

## Land Rearrangements and Water Protection Activities in Finland

-Conclusions of a Development Project

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-FIG Working Week  
-7<sup>th</sup> May 2012

1

## Protecting Baltic Sea and surface waters

- **Baltic Sea**
  - Large basin, 85 million people
  - Average depth 52 meters (shallow)



[http://en.wikipedia.org/wiki/Baltic\\_Sea](http://en.wikipedia.org/wiki/Baltic_Sea)



NATIONAL LAND SURVEY – DOWN TO EARTH

2

## Process of polluting Baltic Sea



[http://en.wikipedia.org/wiki/Baltic\\_Sea](http://en.wikipedia.org/wiki/Baltic_Sea)

- Nitrogen and phosphorus to waters from agriculture, communal savages and industry
- Most difficult to handle is fall from agriculture
- Causes algal blooms
  - ↳ Harms usage of water, ecology and recreational usage of waters
- Large areas of Baltic Sea has been polluted – dead zones
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3

## What is solution?

- Minimize nitrogen and phosphorus fall
- Agriculture is over 50 % of the fall
- 1990 – 2005 goal was reduce fall 50 %
  - Total failure – no real change
- 2005 – 2015 goal to reduce 1/3

4

## Means to reduce agriculture fall of nitrogen and phosphorus

- Reduce fertilization
- Reduce autumn plowing
- Protective Strips
  - Vegetation strip between water and field



<http://www.ymparisto.fi/>



<http://www.mtk.fi/>

- Wetland
- Natural Streams
- Change land usage
  - Meadow
  - Forest

5

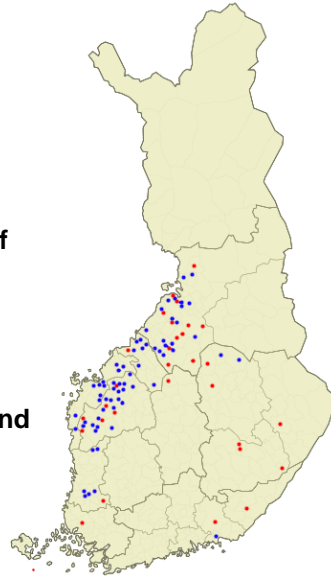
## Currently used means to reduce agriculture fall

- Nitrate Act – Regulations for fertilization
- Environmental subsidies to farmers (EU-CAP)
  - Water protection 295 million €/ year / Finland
  - Farms must do:
    - Cultivation planning
    - Soil Analysis
    - 1 m strip between field and ditch
    - 3 m strip between field and stream
    - Extra measures/subsidies – extra reduction of fertilization, vegetation in winter, light plowing and grass production, wetland maintenance, 15 m strip between stream and field
  - 90 % of farmers in Finland – about 5000 €/ farmer / year
  - Measures are not properly focused

6


## Question

- To this point results are limited or there is no results
- Can Land Consolidations help the situation of the Baltic Sea?
  - Research project of NLS Finland
  - Two Master thesis:
    - Karin Kolis – The Implementation of Farmland Water Protection through Land Consolidation
    - Suvi Kattainen – Protecting Waters in Agricultural Land Consolidation



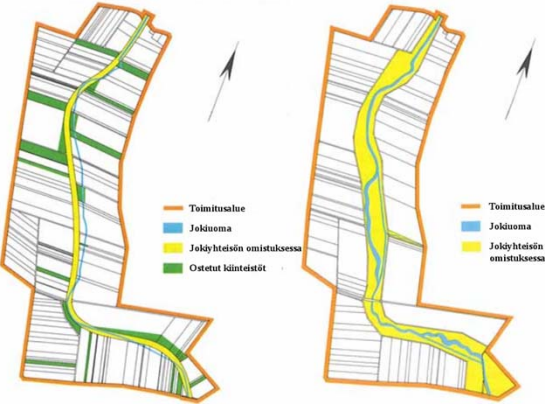
Currently ongoing Agricultural and Forestry Land Consolidations in Finland

## Findings..


  
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## Experiences in Denmark and Germany

- **Denmark**
- Land Consolidations to establish Wetlands
- Land Banking
- Part of Agricultural Program
- **Germany**
- Water protection as part of Agricultural LC
- Establishment of protective strips and areas
- Active Land Banking
- Multiple goals in LC – projects – Better approval of farmers



Implementing protective strips with land consolidation in Rheinland-Pfalz, Germany (Selz River)

9


  
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## What could be done with Land Consolidation?

- Establishment of wetlands
- Establishment of wide (15m) protective strips between field and stream
- Change steep elevation fields to meadows or to recreational usage
- Build natural steams
- Pay attention also to farmers needs – reduction of agricultural expenses
- Use Land Banking – Exchange land

10

## What if?

- Fields of steep elevation in South-Western Finland 11 800 ha – current value 130 million €
- What if meadows and other non agricultural usage would be concentrated in these areas?
  - If implemented in Land Consolidation ,expenses app. 20 million €
  - Because land exchange would be the tool – major part of money put into to Land Banking would come back
- Comparison to 295 million €/ year environmental subsidies

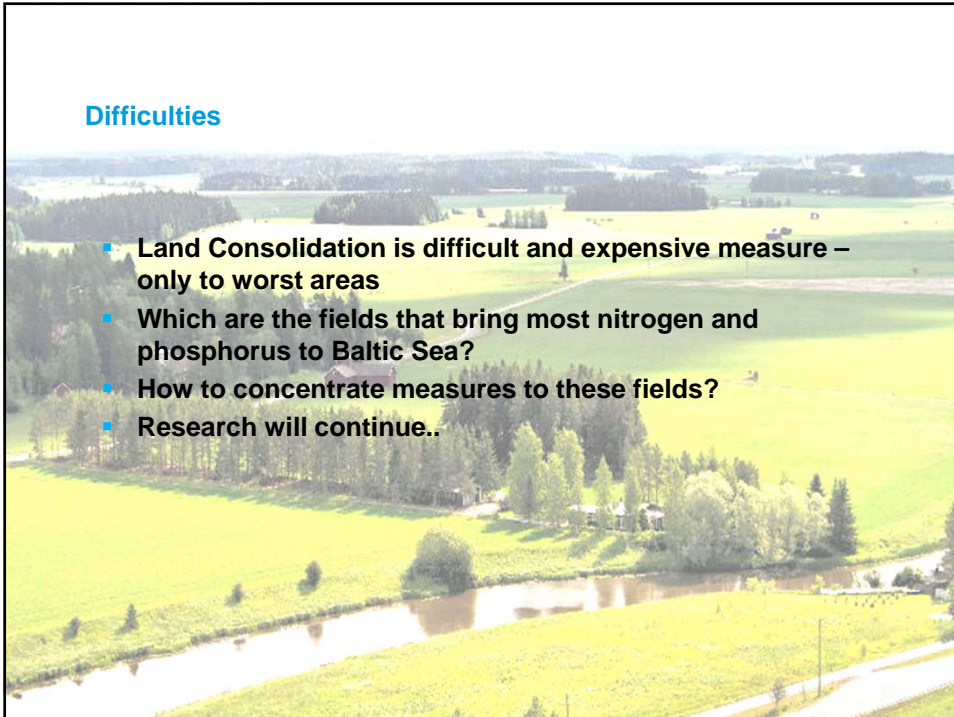


<https://www.salo.fi/>

11

## Difficulties

- Land Consolidation is difficult and expensive measure – only to worst areas
- Which are the fields that bring most nitrogen and phosphorus to Baltic Sea?
- How to concentrate measures to these fields?
- Research will continue..



Thank you for your interest!

