UNIVERSITY OF HELSINKI

# ECONOMICS OF AQUATIC FOODWEBS (ECA)

## Background

- Anthropogenic nitrogen and phosphorus discharges in aquatic ecosystems have led to major **losses of ecosystem health, biodiversity and ecosystem services**.
- In Finland, agriculture is the primary source of nitrogen and phosphorus loads into marine and inland waters. **Optimal management of nutrient loads from agriculture** is therefore essential in restoring aquatic ecosystems.
- Management of the ecosystem function through **biomanipulation** (in particular through targeted fishing) is another potentially cost-efficient method to support the other measures for aquatic ecosystem restoration.
- The efficient allocation of society's resources into aquatic ecosystem restoration calls for comparison of the costs and benefits of different management measures. Benefits relate to the **value of ecosystem services**.
- Targeting all these questions in a new and relevant fashion calls for an **interdisciplinary** approach, combining branches within both ecology and economics.

## Consortium

### Researchers and Institutes

Professor Marko Lindroos (ECA-project leader), Dr Anna-Kaisa Kosenius
*University of Helsinki, Department of Economics and Management*

Professor Eija Pouta, Dr Antti Iho, Dr Yulia Pavlova, doctoral student Janne Artell, doctoral student Heini Ahtiainen
*MTT Agrifood Research Finland*

Dr Marita Laukkanen, doctoral student Kimmo Ollikka
*Government Institute for Economic Research (VATT)*

Dr Heikki Peltonen, Dr Soile Kulmala, Dr Laura Uusitalo
*Finnish Environment Institute (SYKE)*

Dr Outi Heikinheimo
*Finnish Game and Fisheries Research Institute (FGRI)*

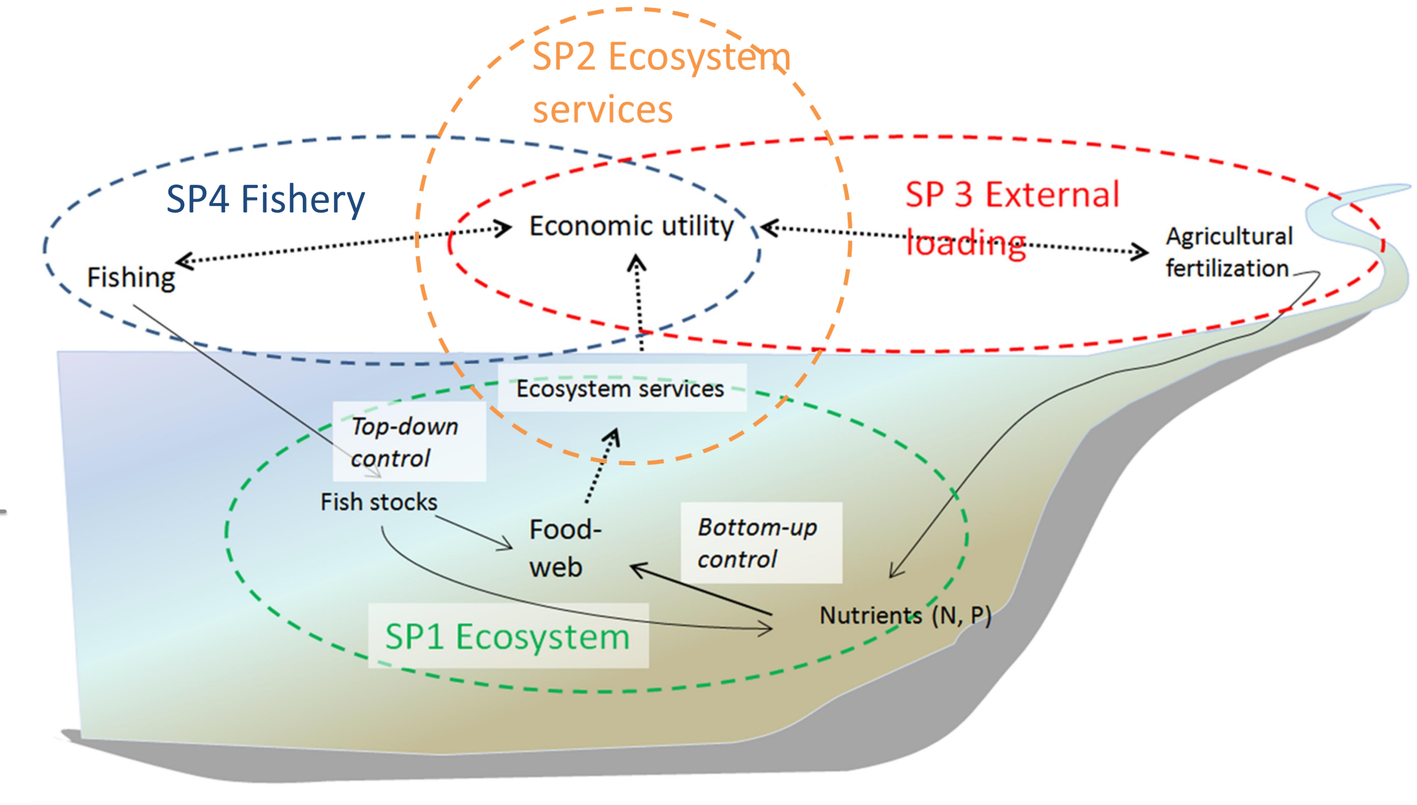
## Four Sub-projects

SP1: Modeling the integrated management of ecosystems and fisheries

SP2: Value of the ecosystem services provided by aquatic environments and foodwebs

SP3: Policies and instruments to control agricultural phosphorus loading

SP4: Economics of biomanipulation




**Linkages between sub-projects and integration of disciplines.**

## Research Objectives and Policy Goals

- Provide science-based **solutions and practical guidelines for the sustainable governance and restoration of aquatic ecosystems**, e.g. water quality improvements.
- Develop integrated **ecological-economic models** which support the management of aquatic ecosystems.
- Support integrated management of both **marine and lake ecosystems**.
- Support implementation of the EU Marine Strategy Framework Directive, the Water Framework Directive and the Common Fisheries Policy.
- Provide valuable results for the Ministry of the Environment, Ministry of Agriculture and Forestry, regional authorities, coastal municipalities, HELCOM, ICES…