

# Fishing of cyprinids and the use of gypsum on farm fields

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**NutriTrade**  
Nutrient Offsetting for the Baltic Sea



**Interreg**  
Central Baltic



EUROPEAN UNION  
European Regional  
Development Fund



**Fishing of cyprinids**



# Pilot Fish in a nutshell

## Recycling nutrients and bringing cyprinid fish to the dinner table

- Cyprinid stocks have increased in Finnish coastal areas, mostly due to the eutrophication of the Baltic Sea
- By the fishing of cyprinids, a significant amount of nutrients can be recycled from the sea to land
- The pilot promotes the use of domestic, underutilized cyprinid fish by the food industry in Finland

## Pilot implementation

- Contracting of fishermen through an annual open call
- Activation of production chains for cyprinid products

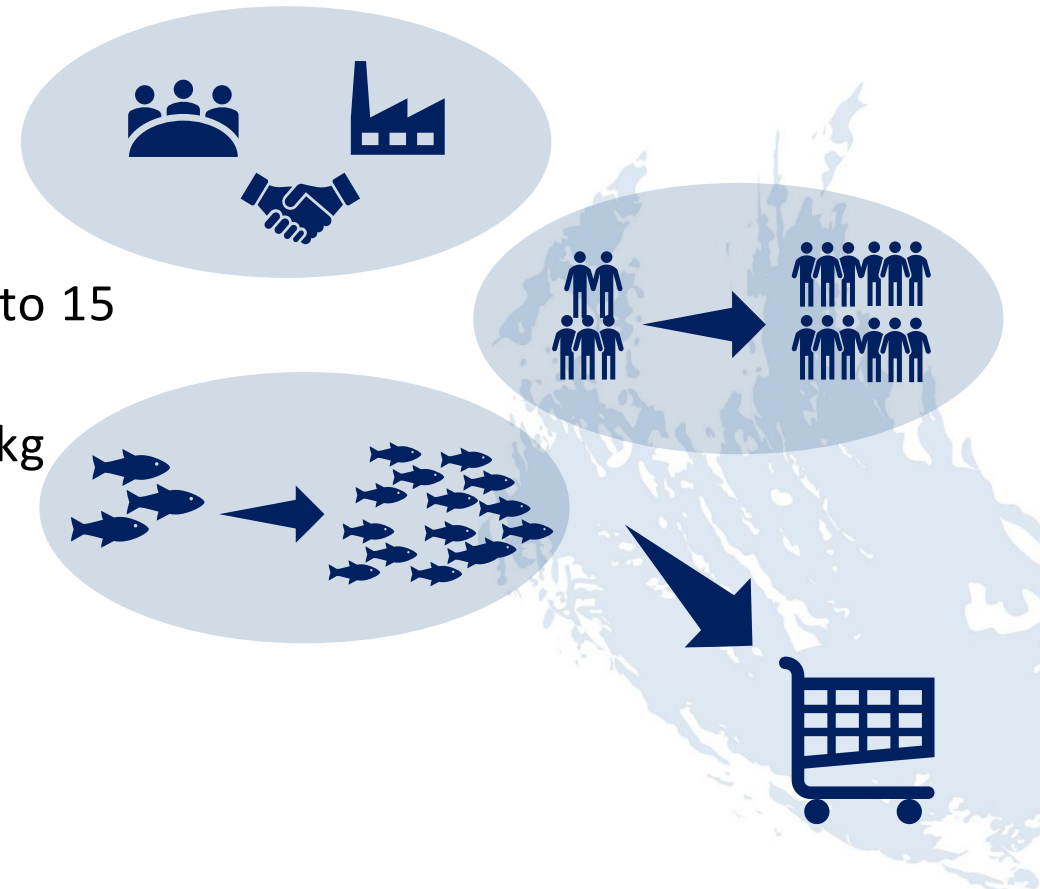
## Operational principles

- Pre-conditions for fishing based on fish stock management to ensure the ecological and social sustainability of the project
- All activities are open and transparent to the public and stakeholders



# Step by step towards the target

- **Step 1:** A local production chain in Turku region
- **Step 2:** The first consumer product launched by Kesko in April 2017, and another in April 2018
  - More companies committed to cooperate
  - The number of contracted fishermen increased from 5 to 15
  - The annual catch increased from 30 000 kg to 200 000 kg

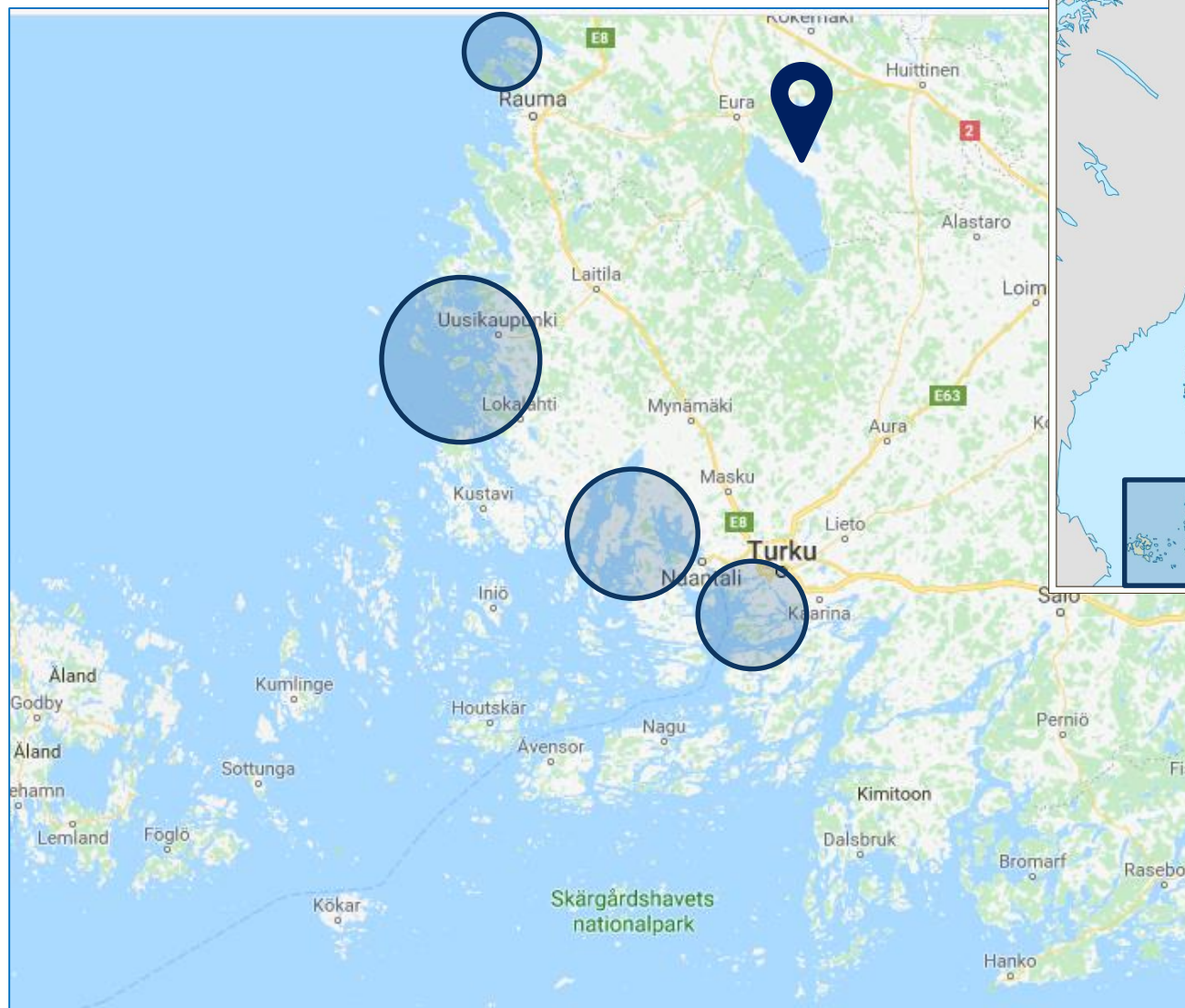




# Fisheries

- Turku region
- Mynälahti and neighbouring area
- Uusikaupunki region
- Outside of Eurajoki

 Production in Säkylä



# Results

- The first commercialized management fishery in the Finnish coastal waters
- Successful consumer products made of Archipelago Sea bream
- Phosphorus removals increased from 250 kg P in 2015 to 1600 kg P in 2018 \*

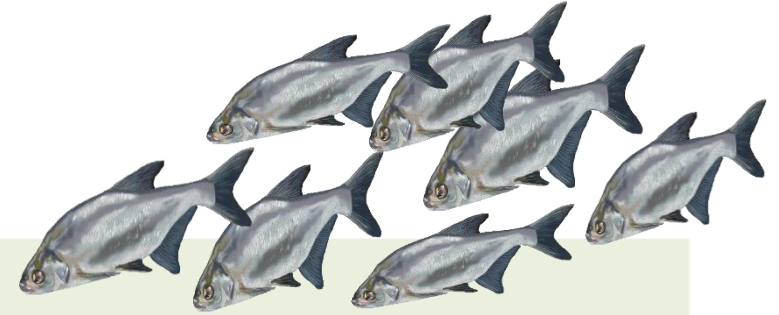
\*Based on the 0,8% P content in cyprinid fish (Setälä et al. 2012), equalling to 25% of annual P loading from Turku Kakolanmäki WWTP

- The cost of **66€/kg P** removed from the Sea



# Sustainability of fishing plays a key role

- Involvement of key stakeholders to ensure social acceptance
- Preconditions for fishing
- Monitoring and reporting of catches
- Stock estimate for bream: 30 – 40 million kg (Luke)
- A lot of growth potential for sustainable fishing



John Nurmisen Säätiön Lähikalahanke  
Saalisraportti 10.7. tietoon tulleet (vk 22 alkaen)

	<u>Kalastaja:</u>				
<u>Saalis:</u>	1	2	3	4	<u>Yhteensä:</u>
Lahna >1kg (kg)	2748	1090,5	25676	5311,5	<b>34826 kg</b>
Särkikala, pääosin pientä lahnaa (kg)	669	252,5	2456	950,5	<b>4328 kg</b>
<u>Vapaaksi lasketut (kpl):</u>					
Kampela	1	0	1	1	<b>3 kpl</b>
Siika	11	0	19	20	<b>50 kpl</b>
Taimen	11	0	4	6	<b>21 kpl</b>
Hauki	2	1	8	0	<b>11 kpl</b>
Ahven	10	20	236	3	<b>269 kpl</b>
Kuha	14	10	51	1	<b>76 kpl</b>

*Example of summary catch report from 2016: cyprinid catch and released catches (e.g. pike, pikeperch, perch, whitefish, trout)*



# Future potential

## Nutrient removal by fishing the cyprinids

- Locally significant amounts of nutrients can be removed by cyprinid catches: 1 million kg fish = 8 tons of phosphorus
- Ecologically sustainable as long as the preconditions for fishing are well defined, fishing is monitored, and by-catch is released
- Amount of nutrients removed from the sea can be easily verified

## Utilisation of catch for food production

- Economically sustainable if stable, efficient value chains can be established
- Low fat fish do not accumulate hazardous substances (e.g. dioxins)
- Market demand for healthy, ecological food products is growing



# Baltic Fish



# Project partners

- John Nurminen Foundation
- Rädda Lumparn
- Ålands Fiskarförbund
- Race for the Baltic
- Guldhaven Pelagiska

The project is financed by the Baltic Sea Action Plan (BSAP) Trust Fund



# Project objectives and scope

***Overall objective:*** commercialization of management fishing activities at the Swedish coast and Åland Islands and by this, removing excess nutrients from the eutrophied Baltic Sea ecosystem

## ***Scope of the project***

- Creating commercially based, targeted management fishing of cyprinid species (roach and bream) in Sweden and Åland Islands
- Opening market for products made of cyprinid species in Sweden - creating demand in food services, institutional kitchens and consumer side

## ***Results of the project***

- Commercial production chain for roach and bream products established in Sweden and Åland Islands
- Market demand established for roach and bream products in Sweden





# Activities (1)

## Creating commercially based, targeted management fishing of cyprinid species (roach and bream) in Sweden and Åland Islands

- Consultations with the local fishery agency and other stakeholders
- Contacts with commercial producers, foodservices and institutional kitchens to utilise the catches
- Test fishing activities to find the best fishing gear, most suitable fishing seasons and to establish production chains
- Based on test fishing results, drafting rules for sustainable management fishing
- Signing contracts with the participating fishermen and supporting the purchase of suitable fishing gear
- Starting commercial fishing and production chains



# Activities (2)

**Opening market for products made of cyprinid species in Sweden - creating demand both in institutional kitchens and consumer side**

- Based on test fishing, analysing relevant toxic substances such as dioxins and mercury in cyprinid catch to be used for human consumption
- Producing information material on the ecosystem and health benefits of eating sustainably caught Baltic Sea fish
- Marketing products to foodservices, institutional kitchens and commercial retail chains in Sweden







# Use of gypsum on farm fields



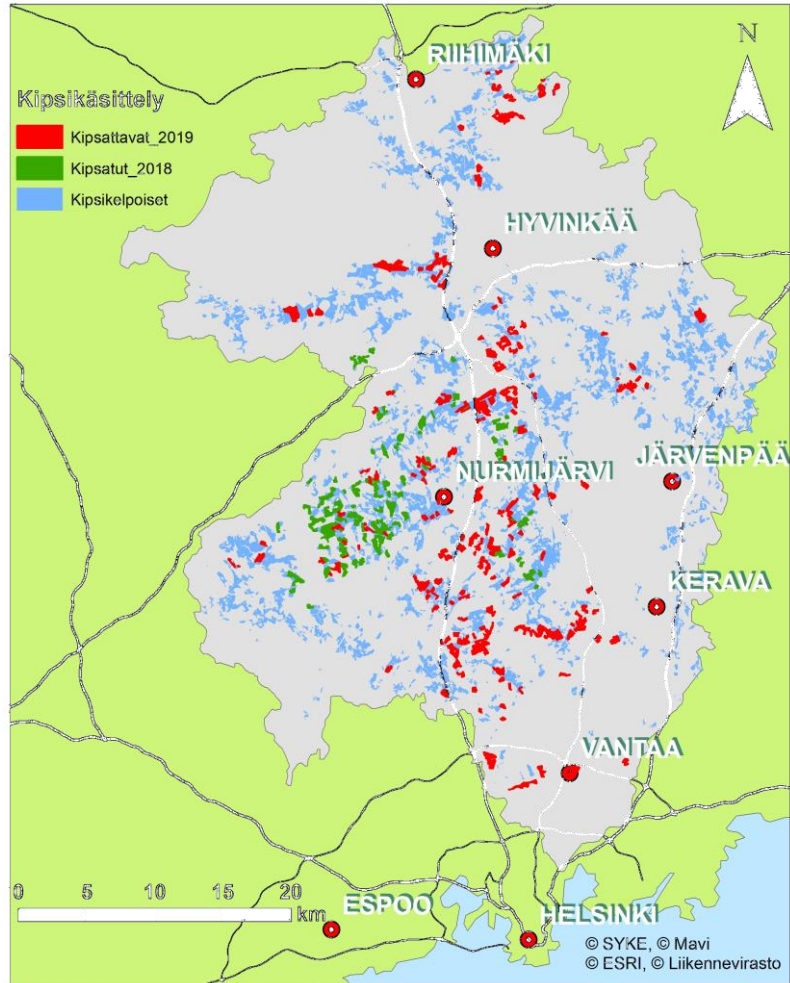
# Spreading of gypsum

- Reduces erosion and leakage of nutrients from agricultural fields
- Improves water quality and the living conditions of aquatic species
- Reduces eutrophication
- Does not affect harvest levels





# Project area







# Project partners

- John Nurminen Foundation
- Water Protection Association VHVSY
- University of Helsinki
- Finnish Environment Institute (SYKE)





# Objectives

- To cooperate with local farmers and to spread gypsum on appr. 3500 ha of field in 2018-2020
- To reduce the runoff of phosphorus by 10 tons and suspended solids by 5000 tons
- To carry out a dialogue with farmers' organisations, agricultural experts, political decision-makers and the media



Photos: Pasi Valkama





# Project in figures

70 farms

3500 hectares

14 million kg gypsum

310 truckloads

66 eur/kg P



# More info on gypsum

- <https://johnnurmisenसाठी.fi/vantaanjoen-kipsihanke/>
- Project SAVE
  - Info package <https://blogs.helsinki.fi/save-kipsihanke/materials/?lang=en>
  - Frequently asked questions <https://blogs.helsinki.fi/save-kipsihanke/faq/?lang=en>





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