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# 12+ years of Finnish experience in supporting nutrient recycling

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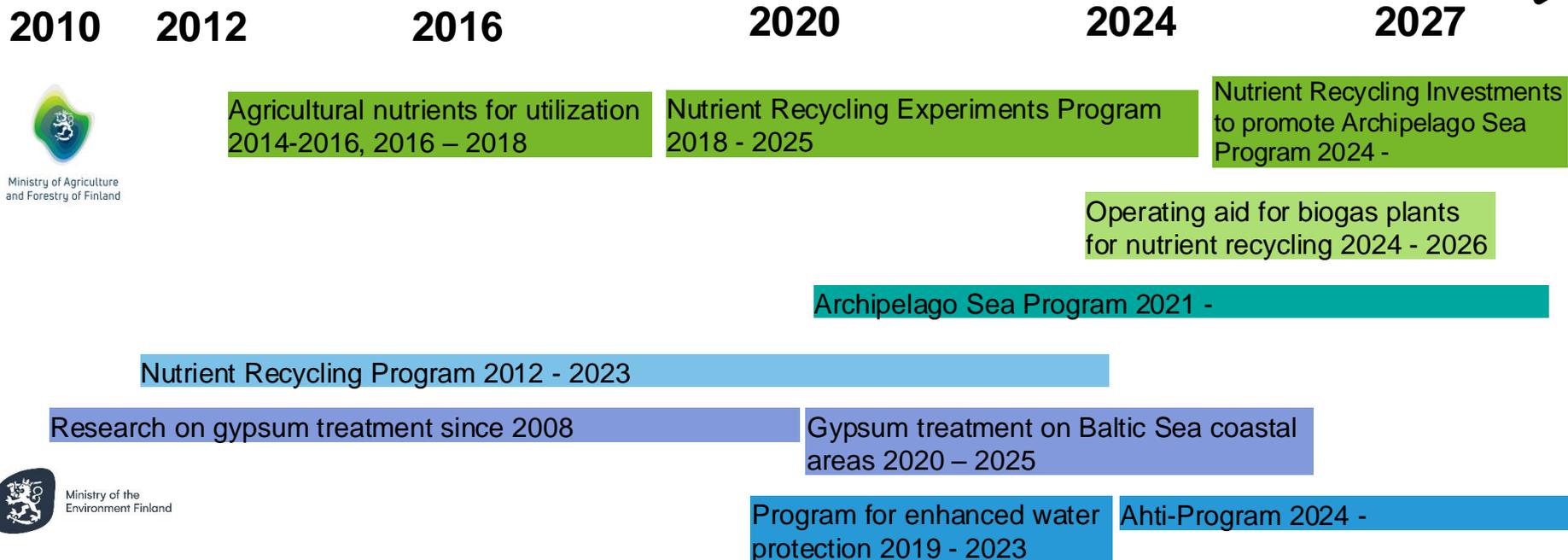
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# Finnish national programs for nutrient recycling

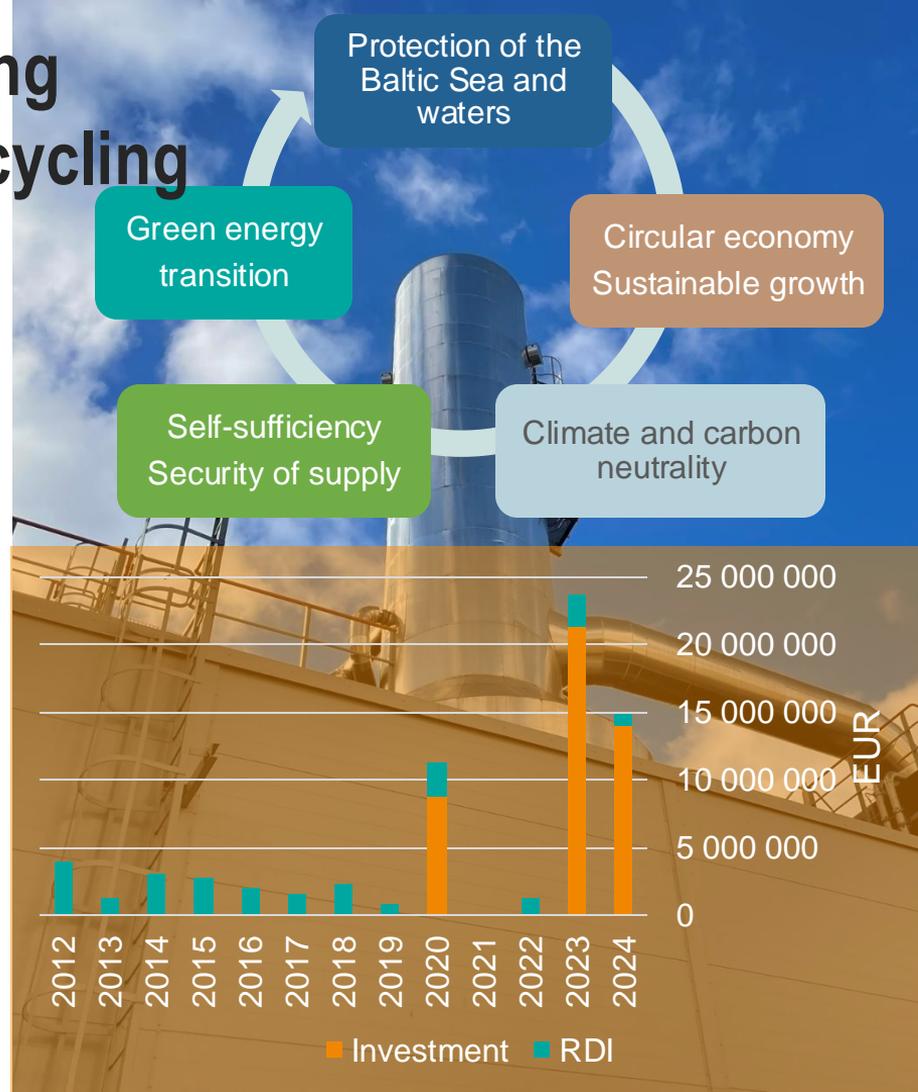


International agreements, EU legislation and strategies, e.g. CAP, EUSBSR, HELCOM, WFD & MFD



# Nutrient Recycling Program – long term commitment on nutrient recycling

- The program has accelerated **water protection and circular economy** already for 12 years and 3 government periods
- Funding for RDI projects and investments
  - Feasibility studies, knowledge increase and awareness raising
  - Development and implementation of new technology
  - **175 funded projects, 69 MEUR** funding in total
- Results
  - **Increased awareness, knowledge and skills** related to nutrient recycling
  - Developed **new technologies** for nutrient recovery and increased knowledge on their **applicability**
  - **Full-scale implementation** and pioneer investments have been initiated
- Future
  - From 2024 onwards, measures for nutrient recycling are continued as part of the **new Ahti-program**



# Gypsum – a cost-efficient measure to boost water protection

- Research and trials of gypsum amendment on fields since 2008
  - 30 - 50 % decrease in particulate P runoff – immediate effect, lasts for 4-5 years
  - Maximum potential to reduce 14 % of all agricultural P load (if all suitable field amended)
- KIPSI-project started in 2019
  - Aim to treat 100 000 ha of fields by 2025
  - Treatment is free for the farmers, costs 400 – 440 €/ha
  - Handbook and advise on gypsum use available
- Results
  - By August 2024, 64 000 ha of fields have been treated → more than 77 t less P to the sea
- Future
  - Aim to secure long term funding
  - Large scale piloting and use of other soil amendments (fibers, structural lime) and combined use



# Measures for enhanced water protection

- Co-funding for activities, research and stakeholder involvement
  - Decreasing **nutrient runoff** with a stronger focus on measures on the **catchment areas**
  - **Restoration** of water bodies
  - Decreasing the **harmful substance** emissions from urban environment and shipwrecks, and protection of groundwater
- Results
  - Over 80 catchment area plans and close to 100 piloted methods
  - Restoration measures implemented on ~50 000 ha of inland waters, ~800 ha coastal waters and close to 20 km rivers
  - More than 80 new methods studied or implemented to decrease loading from urban areas; 4 shipwrecks restored
  - Research on methods and data collection of the status of waters
  - Thousands of stakeholders involved in activities; regional networking activities and platforms for collaboration established
- Future
  - From 2024 onwards, measures continued as part of the **new Ahti-program**
- Funding
  - 69 MEUR in 2019 – 2023, (incl. gypsum)
  - 30 MEUR in 2024 – 2027 (incl. gypsum + nutrient recycling)



# Archipelago Sea Program 2021 -

- Archipelago Sea is a focus area of nutrient recycling measures – “pilot area for nutrient recycling”
  - Joint program of four ministries, incl. Ministry of Economic Affairs and Employment and Ministry of Transport and Communications
- Agricultural load to Archipelago Sea is the last HELCOM hot spot in Finland.
  - Assessment of the possibilities to removing from the hot spot list is underway.
  - Prior to the application to HELCOM, we need to achieve a continuous decrease of diffuse load of N and P achieved owing to the taken measures.
- Work programme for 2024-2027 includes e.g.:
  - Three pilot areas: River basins of Aurajoki and Paimionjoki, and Kemiö island
  - Intensive activities in a highly targeted manner to reduce the loads.
  - Cooperation with all sectors, especially private companies in the food sector



# Program for nutrient recycling experiments and investments

- RDI activities and investments for nutrient recycling, biomass processing, and carbon sequestration -> security of supply and sustainability of food production
- Trial program that has encouraged new openings but also production-scale investments
  - Mainly experiments or piloting (74 % of RDI projects)
- Primarily for SMEs, in certain cases also for large companies and other organisations
- Since 2020
  - Almost EUR 9 million to 65 RDI projects
  - Over EUR 11 million to 9 investments
  - Most projects focused on producing recyclable fertilising products or soil improvers from biomasses
- From 2024 onwards the focus will be on supporting investments but much less funding will be available



Pilot equipment to test nutrient recovery  
Pellets processed from digestates  
Field soil improvement fiber treatment



# State aid for promotion of ecological recycling

## “Operating aid for biogas plants for nutrient recycling”

- A new type of aid based on performance.
- The scheme is based on phosphorus kilograms in manure or aquatic vegetation.
- Aid is granted based on eligible P kilograms received and processed into recycled fertilizers.
- Aid is granted through a competitive bidding process (auction) where each biogas entrepreneur submits a bid, consisting of their offer (Euros/received P kg) = aid level.
- The first auction was organized in 2024.
  - 5.3 million euros / 0,5 milj. Kg P recycled by the end of 2026.
- “Technology-neutral” aid scheme for other nutrient recycling plants (without bioenergy production) is currently being investigated.



# In a nutshell

- Improving nutrient recycling requires actions across the society – from catchment area to politics
- Various activities, good cooperation and long-term efforts are needed for lasting results
- In Finland, the actions are organized under several parallel programs with close collaboration and coordination and strong stakeholder engagement
- Successful results have been achieved – continued efforts and new measures are still needed

**Thank you!**



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