BALTIC PHOENIX

“Sustainable recovery and recycling of nutrients – safety and efficacy for clear Baltic waters”

Interreg Baltic Sea Region Programme
2nd Call, 14th July 2015
Priority axis 2: Efficient management of natural Resources
Specific Objective 2.1: Clear Waters

PA Agri Flagship

Background

- Unsustainable use of nutrient rich waste streams has caused accumulation of nutrients into agricultural soils
  - Hot spot areas with high leaching potential → eutrophication
- Two interlinked challenges to be addressed
  - Reducing eutrophication of the Baltic Sea
  - Enhancing sustainable nutrient use in the BSR
- We aim at:
  - improving nutrient recirculation in the BSR
  - mitigating excessive soil nutrient content in agricultural hot spot areas, whereby, nutrient leaching will be permanently reduced and water quality of the Baltic Sea improved.

Why nutrient recirculation does not work?

- Adoption of technologies converting manure and sludge into easy-to-use recycled fertilizers is very slow
- Markets for recycled fertilizers are undeveloped
- Farmers have not recognized the potential of alternative sustainable fertilizers
- Inadequate policy support/steering for nutrient recycling

→ sustainable use of under-exploited organic nutrient stocks (e.g. manure and sewage sludge) requires holistic and transnational approaches

  - Recommendations by Baltic Impulse cluster projects (e.g. Baltic Manure)
  - Recent policy relevant research finding: Under-exploited organic nutrient sources would be sufficient to substitute the mineral fertilizers used in agriculture to a great extent, if used sustainably (http://ec.europa.eu/science-environment-policy)

Results or suggestions from the three predecessors: Baltic Compass, Deal and Manure

B.Compass → dialogue between all stakeholders
cost-effective measures should be locally adapted
best measures should be identified more clearly.

Policy makers

B. Deal → both economically and environmentally viable measures
demonstration farm network and advisory network

Farmers

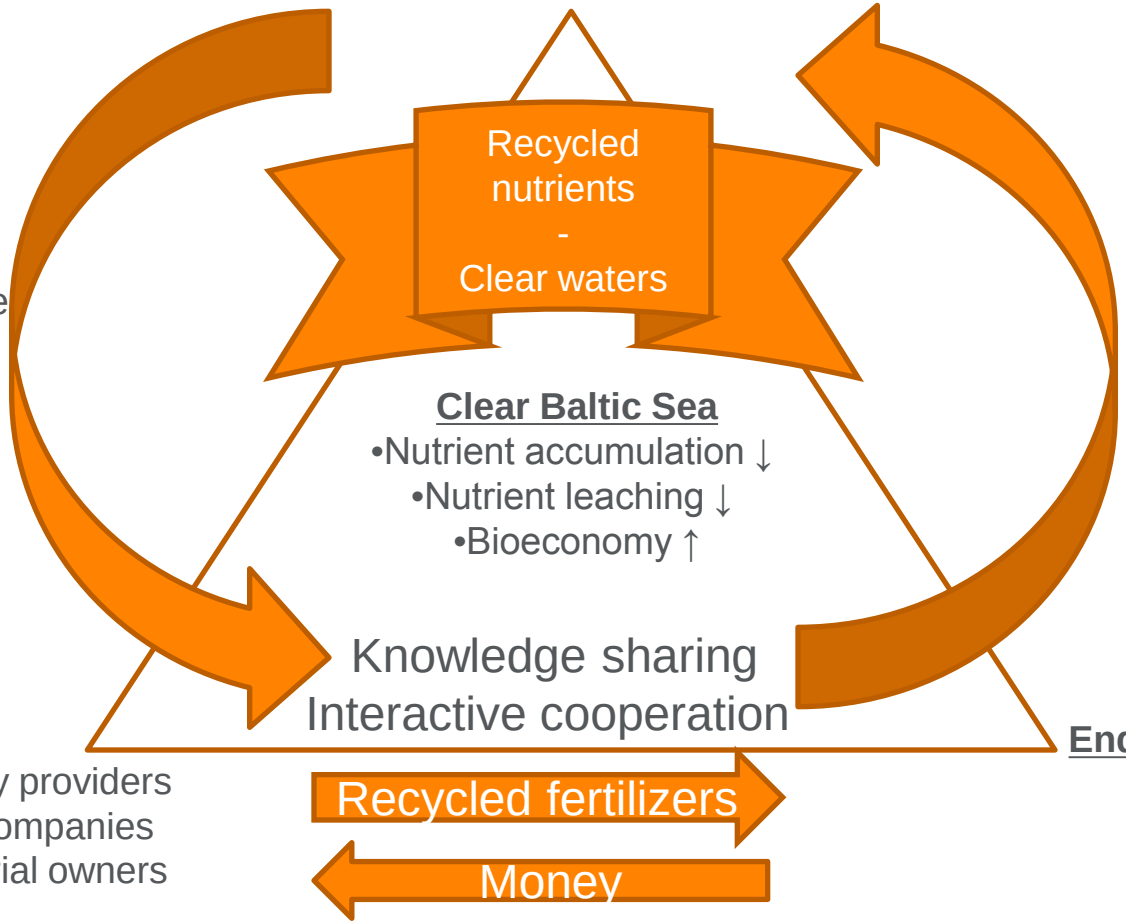
B. Manure → Improved feeding, manure handling, storage, and field applications
Bottlenecks.
1) Costs/economic factors,
2) Technological limitations,
3) Lack of knowledge on solutions, and
4) Regulation or lack of support mechanisms for adopting best available technology (BAT)

Manure quality

Stakeholders

Policy steering
- Ministries
- Local authorities
- Legislative bodies

Main Outcomes
Handbook of rec.fertilizers
Decision support tools
Business opportunities
Policy recommendations



Business
- Technology providers
- Fertilizer companies
- Raw material owners

End-user of recycled fertilizer
- Farmer (associations)
- Industry (organizations)
- Advisory services

Establishment of markets
Sustainable use of nutrients

Present partnership: 12 partners (+6)

- Luke Finland
- UCPH Denmark
- POMInnO Ltd. Poland
- BSAG Finland
- Arhus University Denmark
- SEI Tallinn Estonia
- University of Rostock Germany
- Biovakka Oy Finland
- Biokasvu Oy Finland
- M.E.E. GmbH Germany
- SEGES Denmark
- BioRec Sweden

- Institutes have long experience on nutrient management and water protection, which ensure close and practical interaction with stakeholders
- Private companies, industrial organizations and farmers associations and advisory services represent end users perspectives
- Foreseen additional partners:
  - Agricultural Advisory Center in Brwinów Poland
  - Germany:MS Agrarberatung – Centre of Agricultural Advice Service (for for Mecklenburg-Vorpommern-Schleswig-Holstein Ltd

. Latvia, Lithuania, Estonia and Sweden: partners capable of communicating with policy makers and organizing demonstrations for farmers

Main outputs

- The main outputs of the project will be clustered to three main themes:
  - Decision support tools for sustainable management of P stocks and flows at multiple levels (WP2)
    - Farmers, farm advisors, business and River basin managers (local authorities)
  - Handbook of recycling fertilizers (WP3)
    - Transnational web-accessible catalogue on properties of alternative recycled fertilizers and practical instructions of their use at farm level
    - Tool kit for analytical methods to assess these fertilizers coherently around BSR countries and
    - Examples of successful adoption of nutrient recovery technologies
  - Policy recommendations (WP5)
    - Taking into consideration: Marine Directive, River base management plans (WFD), revision of EU fertilizer regulation, national and international nutrient initiatives, outcomes of ongoing EU-projects
    - Economical constraints now and in near future (WP4)

Main expected results

- Farmers' interest, willingness and capability to use recycled fertilizers instead of mineral ones will increase.
  - This result will create markets and business potential, which facilitates trading of nutrients from hot spot areas to deficiency ones.
- Capability of business sector to adopt novel technologies to process marketable recycling fertilizers will increase.
  - This result contributes to redistribution of nutrients and facilitate resource efficient and sustainable bioeconomy in the BSR region
- Enhanced capacity of decision makers to use nutrient recycling as a measure to mitigate nutrient load to the Baltic Sea.
  - targets on reduction of nutrient load to Baltic Sea can be achieved only if result 1 and 2 will be supported by policy level decisions in transnational context

Organising the work

- WP1: Management and WP1x: communication
- WP2: Nutrient recycling – improvement of nutrient efficiency
  - tools for sustainable management of P stocks and flows
- WP3: From raw materials to value added end projects
  - Practical use and tool kit to evaluate quality
- WP4: Environmental and economical feasibility
  - model of the economic environment of recycled nutrients versus mineral fertilizers
- WP5: Policy analysis
  - Synthesis of policy recommendations
- WP6: Business opportunities
  - Creating connections between stakeholders

Associated partners and co-operators

- Associated partners are expected to have an active role in thematic dialogue sessions:
  - EUSBRS Prio Agri and Prio Nutri representatives
  - Relevant ministries and local authorities from BSR countries
    - Authorities dealing with Water Framework Directive, Marine Directive, River basin management plans etc.
  - Farmers's associations
  - Industrial organizations, waste water treatment plants, large companies, relevant technology representatives
  - HELCOM, WWF, national NGO's
  - On-going BSR projects
    - Related to nutrient recycling
      - » Biosolids etc.
    - Joint efforts for example thematic dialogue sessions

WP3 From raw materials to value added end projects

Target groups:
Relevant ministries, regional authorities, NGO's
Companies
Advisory services
Farmers' unions

Thematic dialogue sessions in each country:
To develop "handbook" for quality assessment and fertiliser value and evaluate marketability criteria

UCPH
Rostock.
Luke
BSAG
Companies

"Handbook" of bio-based fertilizers

Bio-based fertilisers tested by farmers:
Seges, Denmark
BSAG, Finland
MS Agrarberatung; Germany
Agricultural Advisory Center in Brwinów Poland
Latvia, Lithuania, Estonia, Sweden

Thank you for your interest