

SuMaNu platform - nutrient management examples

10th Annual Forum of the EU Strategy for the Baltic Sea Region
Safe nutrient recycling for cleaner Baltic Sea
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Minna Sarvi, coordinator
Natural Resources Institute Finland Luke
minna.sarvi@luke.fi



SuMaNu - Sustainable manure and nutrient management for reduction of nutrient loss in the BSR



- Duration: 10/2018 – 3/2021
- Partners
 - **LUKE** - Natural Resources Institute Finland (*coordinator*)
 - **RISE** – Research Institute of Sweden
 - **HELCOM** - Baltic Marine Environment Protection Commission – Helsinki Commission
 - **BSAG** – The Foundation for a Living Baltic Sea – Baltic Sea Action Group, Finland
 - **ECRI** – Estonian Crop Research Institute
 - **ZSA** – Union Farmers Parliament, Latvia
 - **CDR** – Agricultural Advisory Center in Brwinow, Poland
 - **Organe Institute Aps** - Denmark
 - **JKI** - Julius-Kühn-Institut, Federal Research Centre for Cultivated Plants, Germany
- Associated organizations:
 - **EUSBSR** Policy Area Bioeconomy & Nutri
 - **CBSS** - The Council of Baltic Sea States Secretariat
 - **ESPP** - The European Sustainable Phosphorus Platform
 - **IEEP** - Institute for Engineering and Environmental Problems in Agricultural Production – branch of Federal State Budgetary Scientific Institution, Federal Scientific Agroengineering Center VIM, Russia

Why SuMaNu?

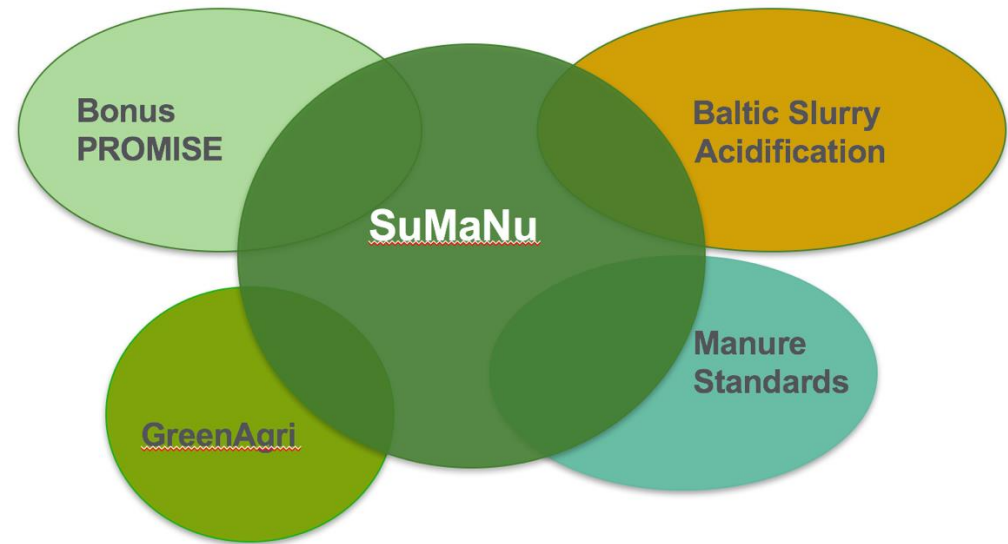
To synthesize the results of participating projects to get more holistic

→ **recommendations on best practices**

and

→ **policy recommendations**

for environmentally and economically sustainable manure management in BSR



More political impact!

Towards more sustainable manure and nutrient management

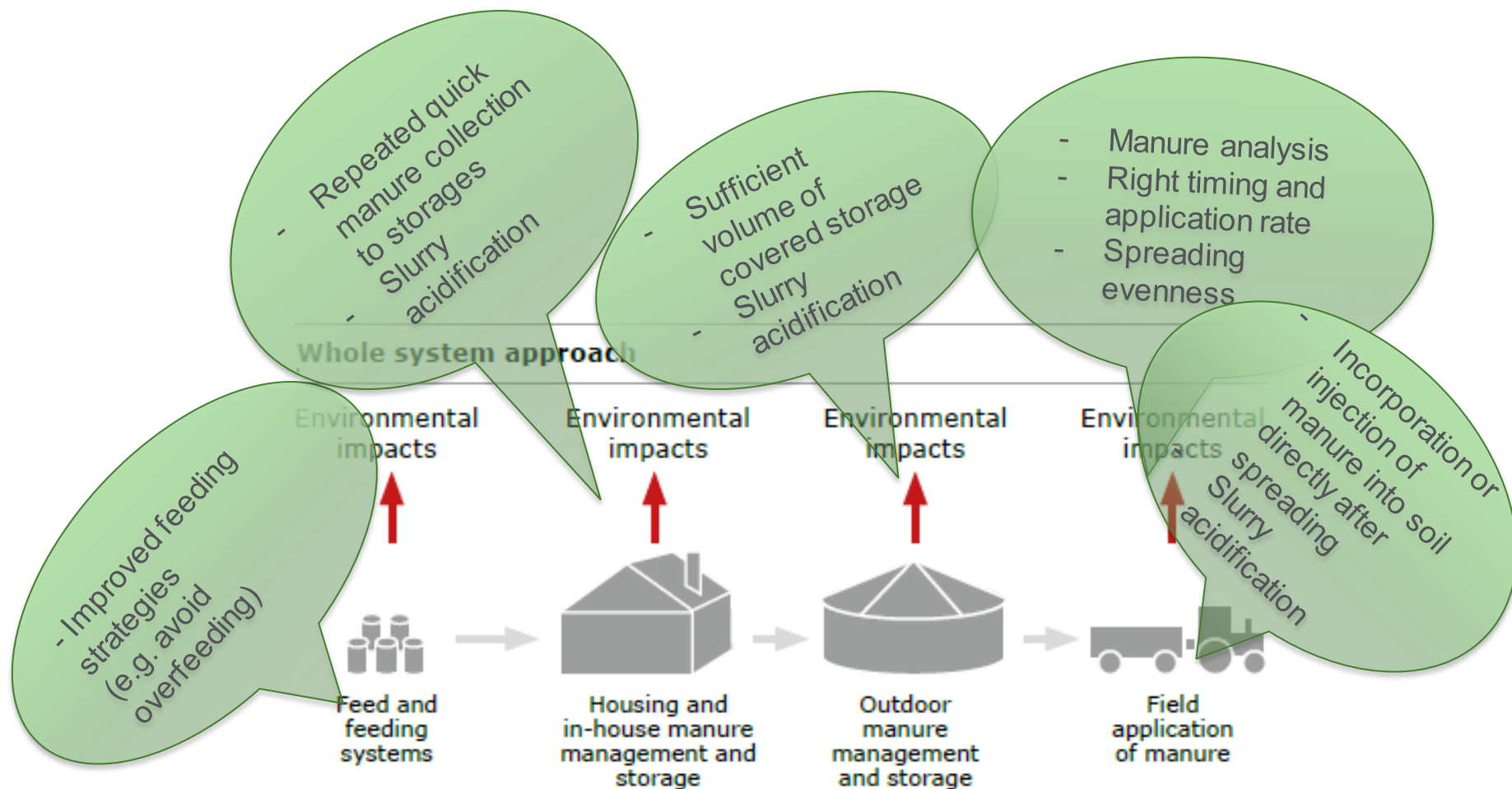
Farm scale

At the farm scale manure and nutrient management can be more sustainable by:

- Increasing manure utilization
- Decreasing ammonia and greenhouse gas emissions
- Reducing runoff and leaching
- Increasing manure recycling
- Decreasing odor nuisance and risks for pathogens and contaminants



Photos: Erkki Oksanen/Luke



Tybirk et al. 2013.

Towards more sustainable manure and nutrient management

Regional scale

Recycled nutrients can replace traditional fertilizers

The total amount of recyclable phosphorus

26 000 t / year

Better use of limited resources is needed!



360 t

Food industry side streams



230 t

Sludges from pulp and paper industry



2 880 t

Municipal sewage sludge



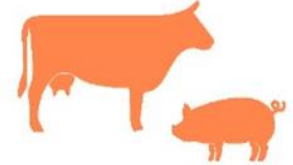
730 t

Municipal biowaste



2 540 t

Surplus grass



19 300 t

Livestock manure

26 000 t =

The portion of recyclable phosphorus would easily cover the amount needed for all of Finland's annual plant production.

>100%



The agricultural consumption of traditional inorganic phosphorus in 2015 was

11 000 t.

What is phosphorus?

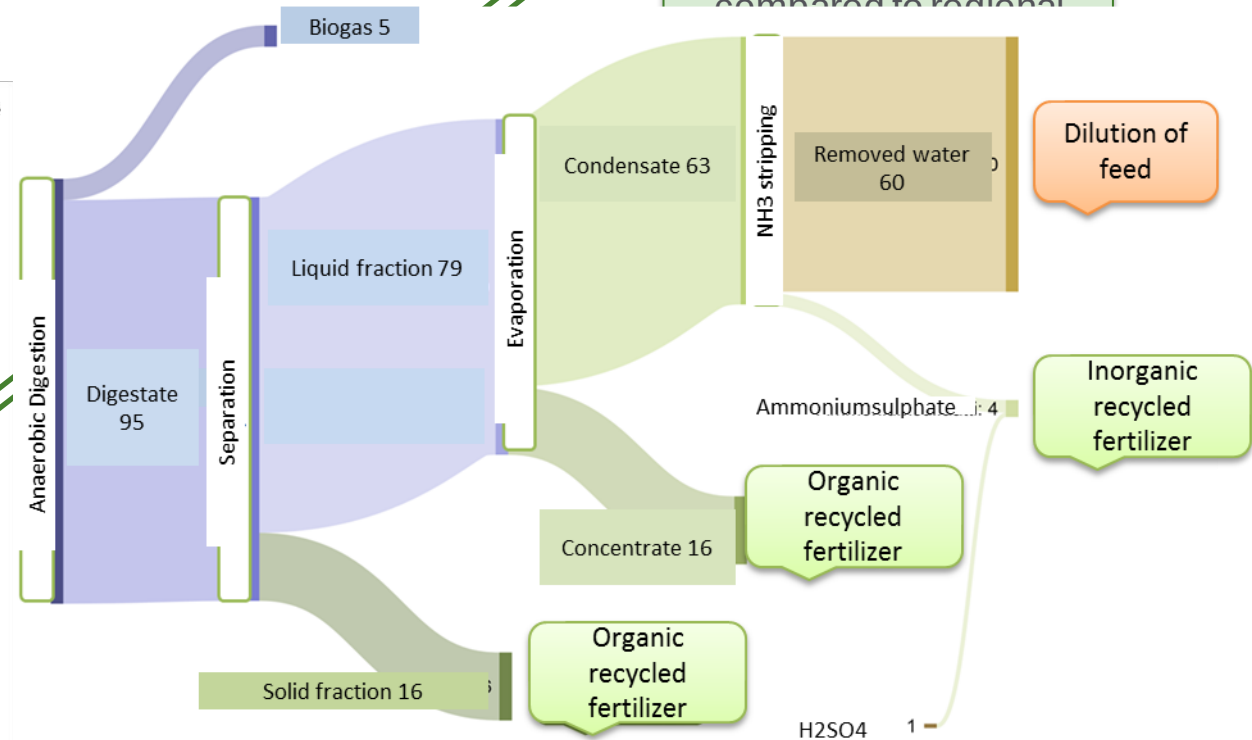
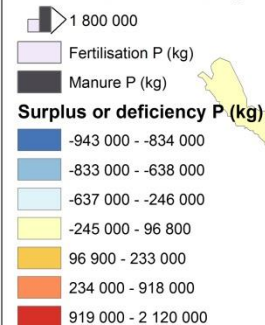
Phosphorus is an element mined from the ground, used as a fertilizer to improve plant growth. Phosphorus becomes a problem when it flows into water bodies, where it causes algal blooms and increases eutrophication.

Example on need for manure processing regional surplus manure

**SOUTHERN
OSTROBOTHNIA**

- Surplus manure P
917 600 kg/a or 4 kg/ha
compared to regional

P fertilisation according to crop need and manure phosphorus



2 processing plants with 200 000 t/a capacity, 70% manure in feed

- Plant 1: 36% pig manure, 30% cattle manure, some poultry & fur animal manure
- Plant 2: 60% cattle manure, 7% pig manure, some poultry & fur animal manure

→ 432 000 t/a of manure P in a transportable form

→ **half of the surplus**

Improved manure and its nutrient management

- better use of existing recyclable nutrients
- reduced need to use and import mineral fertilizers to the BSR
- more efficient use of limited rock phosphate resources!



Thank you!