Part-financed by the European Union
(European Regional Development Fund and
European Neighbourhood and Partnership Instrument)

Case for a Multi-stakeholder Innovation Project as an Example of a Bioeconomy Related Cooperation Activity

Baltic Forum for Innovative Technologies for Sustainable Manure Management

Baltic MANURE

Markku Järvenpää, MTT

Coordinator of the BatMan project

Director of Agricultural Engineering Research
MTT Agrifood Research Finland
Markku.jarvenpaa@mtt.fi

The project is partly financed by the European Union (European Regional Development Fund)

Baltic Manure Context

- EU strategy for the Baltic Sea Region - Action Plan 2009 Objective: To make the Baltic Sea Region:
  - AN ENVIRONMENTALLY SUSTAINABLE PLACE
  - A PROSPEROUS PLACE
    - Baltic Forum for Inventive and sustainable Manure processing
  - ACCESSIBLE AND ATTRACTIVE
  - SAFE AND SECURE

Baltic Sea Region Programme 2007-2013

The project is partly financed by the European Union (European Regional Development Fund)

Manure challenges

- Large animal units and regionally intensive animal production
  - 1320 IPPC regulated farms in Baltic region (EU MS)
  - High amount of nutrients to be distributed
    - Disposal may create environmental loading
  - Logistic challenges
    - Transportation of liquid manure ineffective
- Economy of scale
  - large animal units may make processing of manure economically attractive
    - Concentration of nutrients (water removal)
    - Transportation over longer distances feasible
    - Separation of nutrient fractions (N, P)
    - Recirculation of P
  - Production of renewable energy

Baltic Sea Region Programme 2007-2013

The project is partly financed by the European Union (European Regional Development Fund)

Baltic Manure (BatMan) Project

- Baltic Manure is a Flagship project in the Action Plan of the EU Strategy for the Baltic Sea Region adopted by member states in 2009
- The project is financed by the European Union's Baltic Sea Region Programme 2007-2013

Lead Partner: MTT Agrifood Research Finland

Total budget: 3.7 million €

18 partners from 8 countries (+ Russia associated)

Duration 2010 - 2013

The project is partly financed by the European Union (European Regional Development Fund and European Neighbourhood and Partnership Instrument)

Part-financed by the European Union
(European Regional Development Fund and
European Neighbourhood and Partnership Instrument)

OBJECTIVES:
to turn manure problems into business opportunities by:

- Bringing together stakeholders and enhancing knowledge
- Stimulating technology and business development
- Providing useful policy recommendations
- Improving manure handling and use in the Baltic Sea region

Baltic Sea Region Programme 2007-2013

The project is partly financed by the European Union (European Regional Development Fund and European Neighbourhood and Partnership Instrument)

Part-financed by the European Union
(European Regional Development Fund and
European Neighbourhood and Partnership Instrument)

Baltic Sea Region Programme 2007-2013

Baltic MANURE - Partners

1. MTT Agrifood Research Finland (Lead) (FI)
2. Finnish Environment Institute (FI)
3. Agro Business Park A/S, Innovation Centre for Bioenergy and Environmental Technology (DK)
4. Aarhus University, DK
5. University of Southern Denmark, DK
6. JTI - Swedish Institute for Agricultural and Environmental Engineering (SE)
7. Julius Kühn-Institut, Federal Research Centre for Cultivated Plants (JKI) (DE)
8. Estonian University of Life Sciences (ES)
9. University of Rostock (DE)
10. Green Federation GAJA (Pl)
11. University of Helsinki, Department of Agrotechnology (FI)
12. University of Gdansk, Pomeranian Center for Environmental Research & Technology (PL)
13. Latvia Agricultural University (LV)
14. Lithuanian Research Centre for Agriculture and Forestry (LT)
15. Innovation and Education Centre Hohen Luckow IBZ, German Biogas Association Mecklenburg-Vorpommern (DE)
16. LTC AB/Enterprise Europe Network (SE)
17. Turku Science Park Ltd (FI)
18. Estonian Research Institute of Agriculture (EE)

Baltic Sea Region Programme 2007-2013

The project is partly financed by the European Union (European Regional Development Fund)

Baltic Manure Process

- Core partners: MTT Agrifood Research Finland & Agro Business Park Denmark
  - Teleconference
  - Starting meeting with 5 key partners early 2010
  - Others invited by “jungle drum” and workshops
- The partnership was built being aware of other Agri-Environmental projects such as:
  - Baltic Compass (ongoing BSR project)
  - Baltic Deal (another Flagship in the Strategy, for extension and farmers association)
- Added value of the parallel projects was considered crucial!

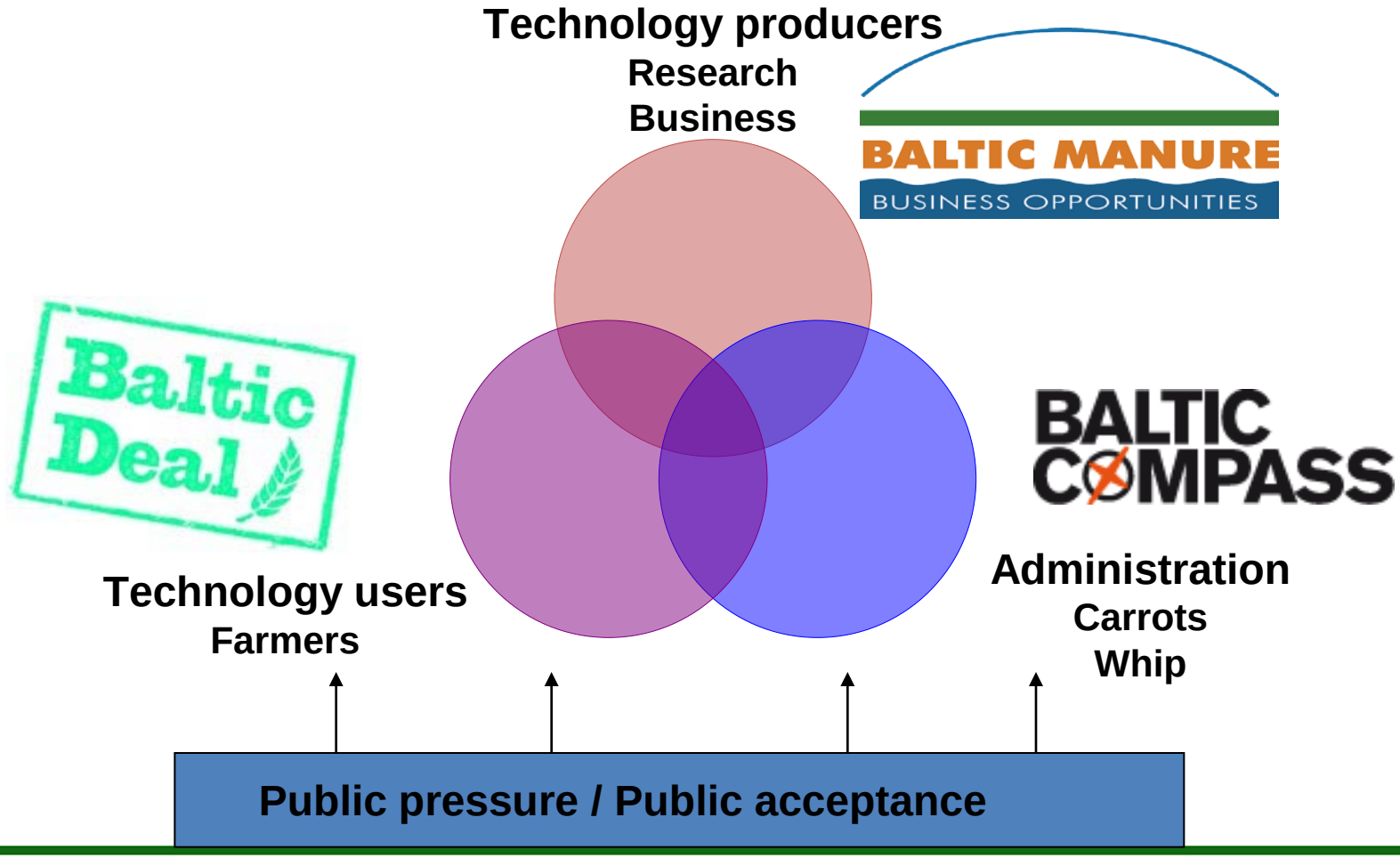
Baltic Sea Region Programme 2007-2013

The project is partly financed by the European Union (European Regional Development Fund)

Baltic Manure Process

- Application was prepared for the Baltic Sea Region Programme 2007-2013
- The Strategy for the BSR was not – as such – coherent with the objectives of the Baltic Sea Region Programme
  - The Flagship status in the Strategy was not enough
  - We had to identify a call with appropriate objectives and
  - We had to prepare a good and competitive proposal!
- At 7. Feb.2011 a Grant Contract was signed between the lead partner and the Investitions Bank Schleswig Holstein
- Baltic Deal got the Grant six months before
- Very soon, a voluntary Cluster of the three Agri-Environmental Projects were established

The Agri-Environmental Cluster



Baltic Sea Region Programme 2007-2013

The project is partly financed by the European Union (European Regional Development Fund)

Baltic Manure Process

- Further Clustering: The BSR – Programme Joint Technical Secretariat established a further cluster of "Water Saving Projects": The Baltic Impulse, with the aim to collect and streamline the results of 9 projects;
- Coordination by the Baltic Sea Action Group (BSAG)
  - http://www.bsag.fi/en/focus_areas/cross-sectoral_activities/Pages/Baltic-Impulse.aspx
- A very important action by the JTS to add value to individual projects!
- Policy Recommendations to be further developed by the HELCOM ministers.

Baltic Manure Results

- Recommendations for farmers
- Recommendations for technology producers
- Recommendations for policy makers

- All aspects needed to boost to change the current paradigma!
- Farmers were reached by Baltic Deal and National Extension projects (like TEHO)

- Joint Annual Result Conference:
  - A Greener Agriculture for a Bluer Baltic Sea (GABBS)
  - Forum for stakeholders

Baltic Sea Region Programme 2007-2013

The project is partly financed by the European Union (European Regional Development Fund)

Baltic Manure Results

Manure value chain - Benefit/Euro

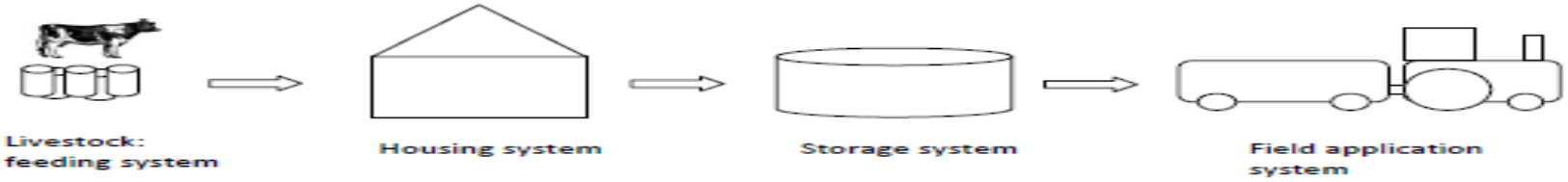


Figure 3.1. Model of basic manure handling chain for a particular livestock type. This is an adaption of the model used as a reference scenario for Life Cycle Analysis (LCA) of manure handling chains conducted by Baltic Manure WP5 (Assessing sustainability of manure technology chains).

FEEDING	HOUSING	PROCESSING	STORAGE	APPLICATION
Feeding strategies	Control water use	Energy recovery	Cover it	Know the nutrients
Phase feeding	Urine and Feaces apart	Separation liquid-solids	Make it big enough	Make a fertilizer plan
Nutrient balanced feed	Cooling the channels	Further processing towards fertilizer product	Check for leaks	Precision application (GIS)
P and Phytase optimisation				Better technologies (injection, acidification…

Baltic Manure Lessons Learned

- Number of key partners: not too few – not too many
- Flexibility of the work programme
- Flexibility of the partnership
  - Entrance and Exit of partners
- Different Languages of different actors (mis-interpretation; need time to learn communication)
- Good communication between funding body and the actors
  - (The BSRP JTS is excellent in this ankle!)

Baltic Sea Region Programme 2007-2013

The project is partly financed by the European Union (European Regional Development Fund)

Baltic Manure Recommendations

- Innovation is a complex issue:
  - Technology: a lot is available but not adopted
  - Users: habits, existing infra and knowledge are barriers of change
  - Regulatory barriers: the regulatory framework often blocks systemic changes
  - Triple Helix!
- The Systemic Chance involves a wide spectrum of actors and
- Reserve time and effort for the dialogue

Baltic Sea Region Programme 2007-2013

The project is partly financed by the European Union (European Regional Development Fund)