

Baltic Forum for Innovative Technologies for Sustainable Manure Management – project Baltic MANURE

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Manure reservoir

The Baltic Sea Region is an area of intensive agricultural production. Agriculture uses substantial amounts of non-renewable nutrients as well as energy, meanwhile animal manure is often considered to be a waste product and an environmental problem.

The EU Strategy for the Baltic Sea Region is trying to find innovative solutions for the economic development of the Baltic Sea Region and at the same time addressing environmental challenges, such as nutrient losses from agriculture. The Action Plan for the EU Baltic Sea Region Strategy seeks to make the BSR a prosperous place, and at the same time develop sustainable agriculture (Priority 9). In order to achieve this, several flagship projects have been introduced and the Baltic Forum for Innovative Technologies for Sustainable Manure Management is one of these. According to the Gothenburg agenda, economic growth and environmental protection should go hand in hand. As manure is the only agricultural product that is currently not processed and utilized commercially, the Baltic MANURE project will focus on this link between economic growth and environmental benefits to make rural areas more prosperous through sustainable manure management.

The project intends to flip this perspective 180 degrees and identify the business opportunities in manure. Manure must be considered a resource instead of a problem. It is calculated that all manure in the Baltic Sea Region contains 981,000 tonnes of Nitrogen and 281,000 tonnes of Phosphorus, currently not utilised properly. The project Baltic Manure provides a forum where researchers, developers, administrators, and business people can come together to develop the many opportunities of manure as fertiliser and energy. Research and development within renewable energy and nutrient recycling will be combined with business innovation efforts to achieve sustainable agriculture, prosperity, and job opportunities in the BSR.

5 themes will be dealt with within the project, namely Innovative technologies for manure handling (1), Standardisation of manure types with special emphasis on the phosphorus challenge (2), Assessment of the sustainability of manure technology chains (3), Energy potentials of manure (4) and Business innovation (5). The business opportunities lie in innovative solutions for manure management and processing. Through conferences, fairs, and B2B events, the innovation potential of the region's SMEs will be improved by joint efforts of the organisations and countries involved.



Manure on the field near the farm in Byszkowo, West Pomeranian Province, Poland

The overall project goals are to enhance business, to improve nutrient cycles, to foster renewable energy use in the region, and to reduce environmental load from agriculture to the Baltic Sea. In other words: to contribute to making the Baltic Sea region an attractive place to invest, work, and live in. The long-term strategic objective of the project Baltic Manure is to change the general perception of manure from a waste product to a resource, while also identifying its inherent business opportunities with the proper manure handling technologies and policy framework.

Baltic MANURE is turning the perception of manure and intensive animal husbandry in some regions as an environmental problem into an opportunity for business innovation. The project develops and utilizes the high potential and know-how for innovative solutions for manure management, such as production of renewable energy, organic fertilizers and other added value products.

Innovation potential of SME's in the region will be improved by joint efforts of the institutions and countries involved through conferences, fairs and B2B events. Common norms for manure quality are required in order to develop sound and coherent policies and regulations, which may stimulate business development in the field. Close scientific cooperation and technological insight are needed also to address the challenge of more efficient phosphorous recycling. Life Cycle Analysis is used to assess environmental aspects of different manure handling technologies and as a basis for recommendations.

To achieve this objective, three interconnected manure forums will be established with the focus areas of knowledge, policy, and business. Project objectives within these three focus areas are:

1. KNOWLEDGE

- To evaluate the existing norms for manure application with a special focus on phosphorus.
- To evaluate the region's existing technologies for animal housing and manure processing.
- To perform a sustainability analysis of new technologies.
- To deepen the knowledge on manure based biogas technology.

2. POLICY

- To evaluate incentive structures and national interpretations of EU directives influencing the development and implementation of innovative manure processing technologies.
- To recommend framework conditions to improve the use of manure resources as fertiliser and energy.

3. BUSINESS

- To identify and analyse the commercial potentials of manure technologies, e.g. for energy purposes.
- To find enablers and barriers for business on manure.
- To stimulate business innovation for manure technologies.
- To make business-to-business events.

The main output of the project Baltic Manure will include guidelines for environmentally and economically sound handling chains for manure in different BSR countries, to be used by farmers, advisory organisations, technology producers, and policymakers (WP 3), a review on Phosphorus supply and chemical speciation in agricultural soils in the BSR to be used for developing farming practices and policy instruments (WP 4), preliminary guidelines for sustainable use of manure and manure-based fertilisers with scenarios for the optimization of nutrient use (WP 4), united database of processed and unprocessed manure, agricultural soils, and manure-based energy potentials in BSR-countries (WP 4 & WP 6), a life cycle inventory of selected manure processing technology chains and their implications for farming (WP 5), scenarios for energy recovery from manure in the BSR leading to recommendations for BSR policy makers (WP 6), model business plans for application of the knowledge produced and for serving as tools for creating new business opportunities (WP 7), as well as recommendations for BSR policy makers regarding actions aimed at improving adoption of new technologies for manure processing to energy and fertilisers (WP 7).

Specific Work Packages include:

- WP 1 Project management and administration (MTT Agrifood Research Finland, FI) – Ensuring strategic, operational and financial management of the project.
- WP 2 Communication (Agro Business Park, DK) – Facilitating communication between actors internally and externally.
- WP 3 Innovative technologies for manure handling (JTI – Swedish Institute of Agricultural and Environmental Engineering, SE) – Identifying innovative technologies for handling and processing manure in an environmentally-friendly way on large farms in the BSR.
- WP 4 Standardisation of manure types with focus on Phosphorus (JKI – Julius Kühn-Institut, Federal Research Centre for Cultivated Plants, DE) – Describing different manure types and their value as a fertiliser and recommending new standards for manure types.
- WP 5 Assessing sustainability of manure technology chains (University of Southern Denmark, DK) – Assessing the environmental consequences of different manure management technology chains of relevance for the BSR.

- WP 6 Energy potentials of manure (MTT Agrifood Research Finland, FI) – Evaluating the energy potentials of different manure types with focus on biogas technology.
- WP 7 Business Innovation (Agro Business Park, DK) – Supporting commercialisation of innovative outputs from the WPs 3-6 in cooperation with commercial actors in the BSR region.

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. It involves 18 project partners from 8 countries (Green Federation GAJA is one of its Polish partners) with MTT – Agrifood Research as lead partner. The total project budget is € 3.7 million and it is partly financed by the European Union (European Regional Development Fund).

Additional information can be found at www.balticmanure.eu