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Baltic Blue Growth – Initiating full scale mussel farming in the Baltic Sea

Lena Tasse, Region Östergötland
PA Nutri Steering Group Meeting
1 February, Helsinki

www.balticbluegrowth.eu



#BalticBlueGrowth

Basic facts

- Duration: May 2016 – April 2019
- Total budget: € 4.6 million
- Part-financed by Interreg BSR
- Lead Partner: Region Östergötland, Sweden
- 18 project partners + 20 associated organisations
- PA Nutri Flagship
- A SUBMARINER Network project



Baltic Blue Growth



Baltic Blue Growth partners

Mussel producers, public authorities, policy makers, research institutions and interest groupings from six Baltic Sea Region countries:



MUSHOLM



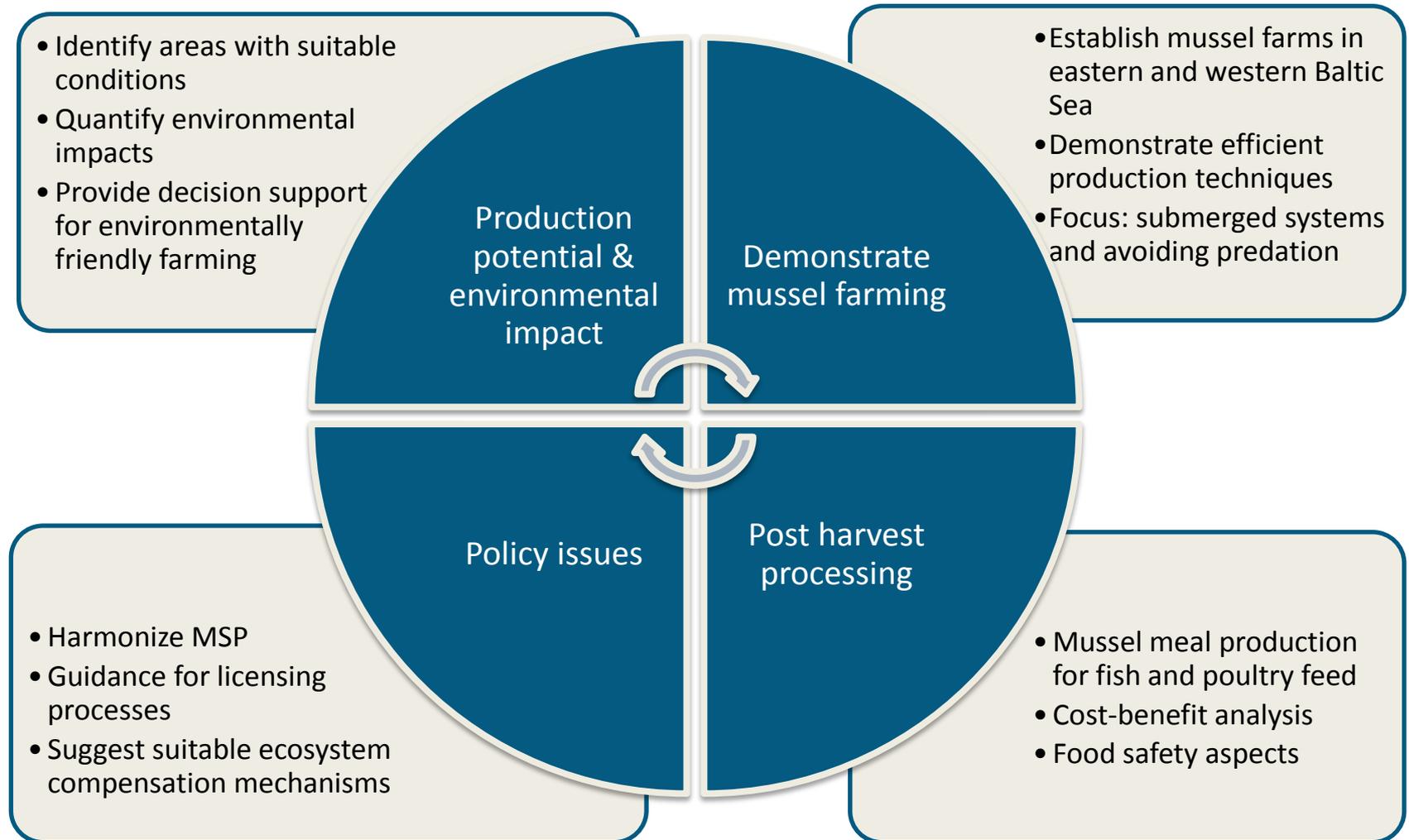
+ 20 associated organisations

Objective

Advance mussel farming in the Baltic Sea from experimental to full scale to improve the water quality and create blue growth in the feed industry



Project structure and activities



New blue growth opportunities for the feed industry?

- 🐚 Baltic mussels too small and fragile for human consumption
- 🐚 Successful trials of producing mussel meal as animal feed
- 🐚 New possibilities: mussels as organic substrate for insects larvae as protein source in animal feed



Expected outputs

Based on data and experiences from 5 project farms, the main outputs will include:

-  Models and functional decision support tools on suitable farming sites and their production potential,
-  Business plans and farming manuals for large scale mussel farms,
-  A demonstration line for processing mussels into insect meal, for use in fish and poultry feed,
-  Guide on licensing process for mussel farming,
-  Recommendations on harmonised maritime spatial planning and ecosystem service compensation measures.

BBG: First results

-  5 new mussel farms
-  2 very successful harvests
-  Icing conditions not tested yet due to warm weather
-  Technical problems for 2 exposed (currents) farms
-  Predators: Eiders are so far well fed and not easily scared...
-  Operational Decision Support System (ODSS): Beta version [online](#)
-  First draft of "closing the loop" nutrient model available for internal use and integrated in ODSS
-  First mussel-fed insects obtained
-  Licensing guide: first draft available for some countries (internal use only)

Mussel farms (S:t Anna)



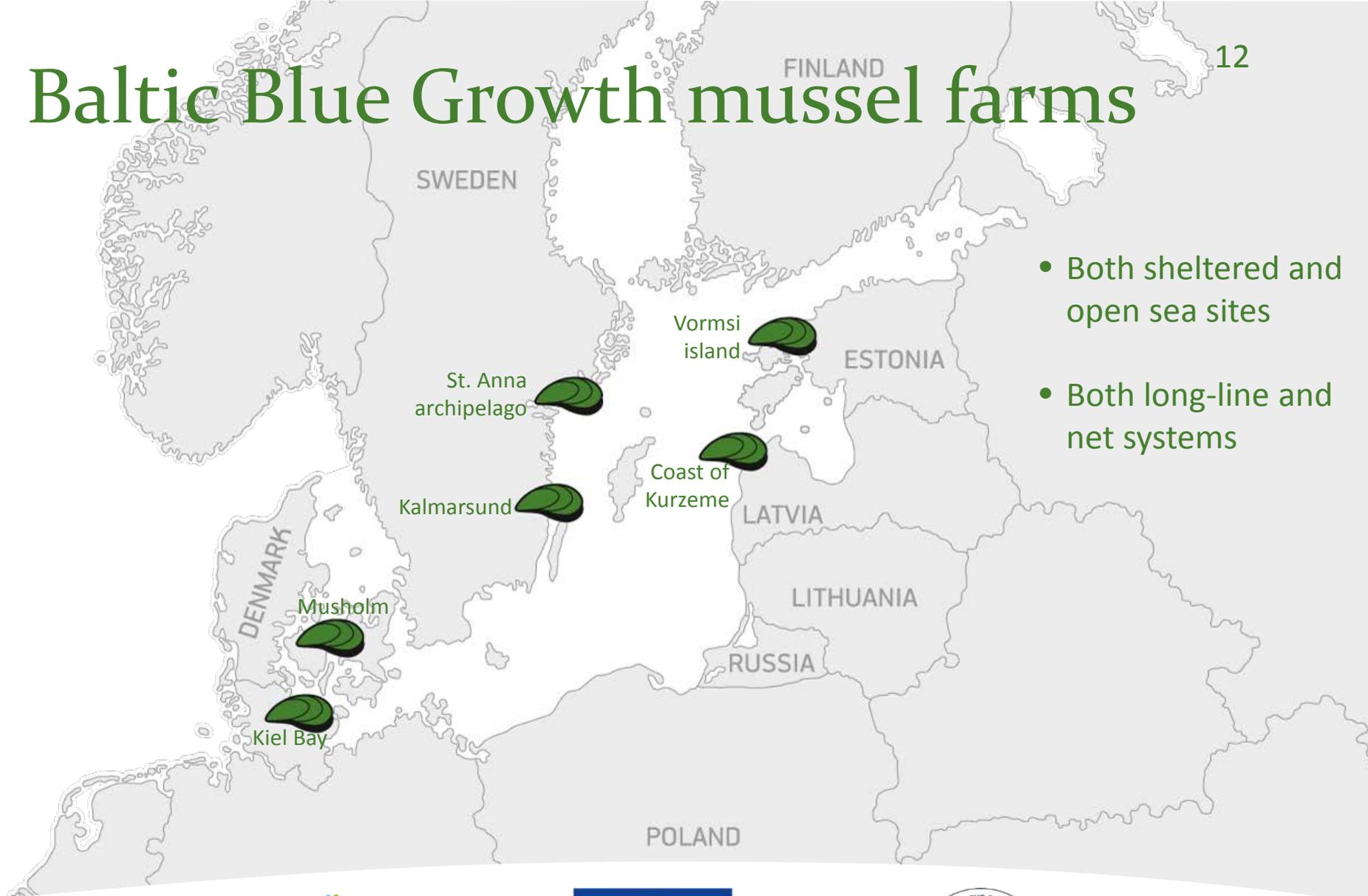
S:t Anna harvest 17 Dec 2017



Insect processing line



Baltic Blue Growth mussel farms



- Both sheltered and open sea sites
- Both long-line and net systems

Conclusions (BBG and others)

-  Baltic mussel farming techniques are reaching TRL7-9 (can be implemented in commercial settings in many BSR waters)
-  A process suitable for full scale production of mussel meal as feed ingredient is likely to be developed within a few years (current estimated TRL=6)
-  Insect meal is still at low TRL level
-  Good stakeholder dialogue, useful networks has been created
-  Likely that relevant MSP methods will exist for integration of mussel farming needs in future plans

Bottlenecks

-  No consensus regarding environmental impact
-  Mussel quality largely unknown (algal toxins, pollutants) – food safety issue with impact on stakeholder dialogue, policy, licencing...
-  Licencing: Harvested mussels is allowed as feed ingredient only in well defined areas – licencing is extremely costly and takes years.
-  Maritime activities critically low in some BSR areas (e.g. S:t Anna, Kalmar) leading to lack of suitable boats, skilled workforce etc – Capacity building needed
-  Cost efficiency in all steps is too low

Remove bottlenecks for mussel production in BSR by...

-  Initiate processes necessary to obtain permission for "mussel as feed production" – already started in Eastern Sweden but financing will not suffice
-  Create financing mechanisms for mussel ecosystem services – where is the business case?
-  **Data collection needed** to support necessary policy changes and to resolve food safety issues
-  Post-harvesting processing improvements in collaboration with industry



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