HELCOM Stakeholder Conference 2020

Mussel cultivation as a marine mitigation measure

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Science for a better future of the Baltic Sea region

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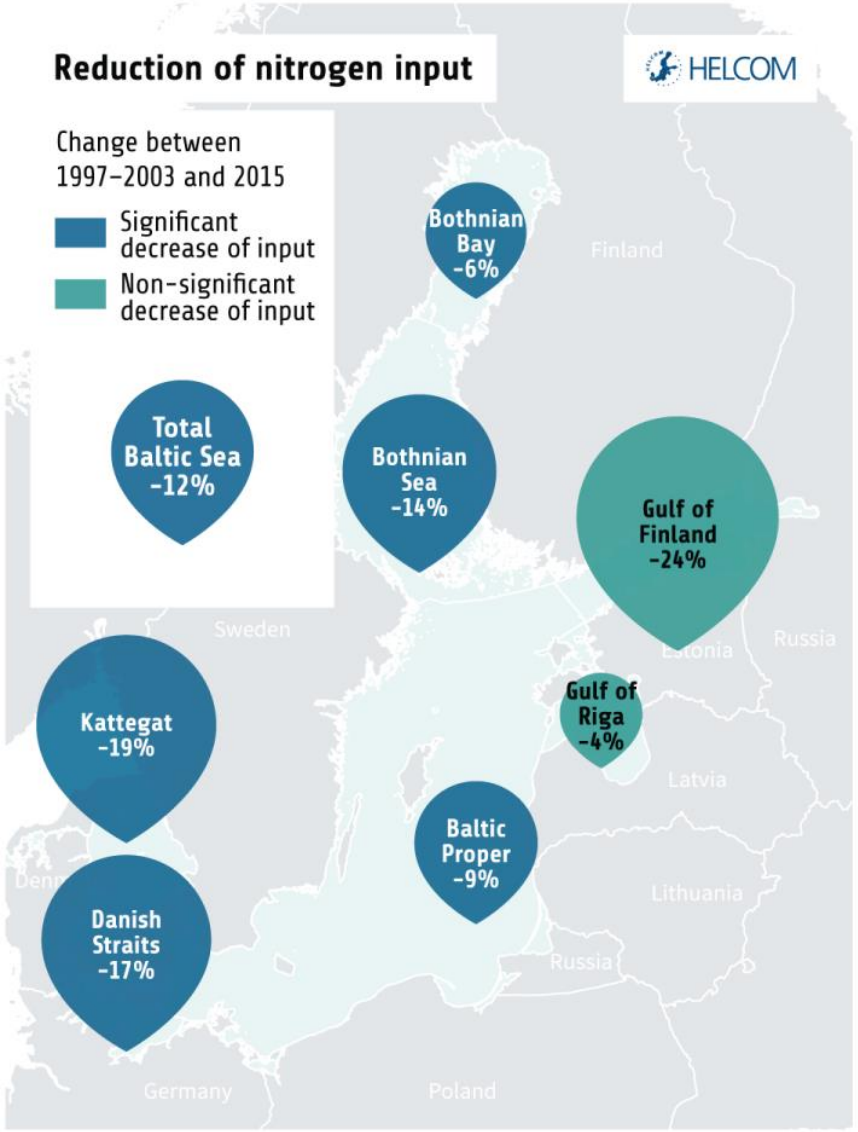
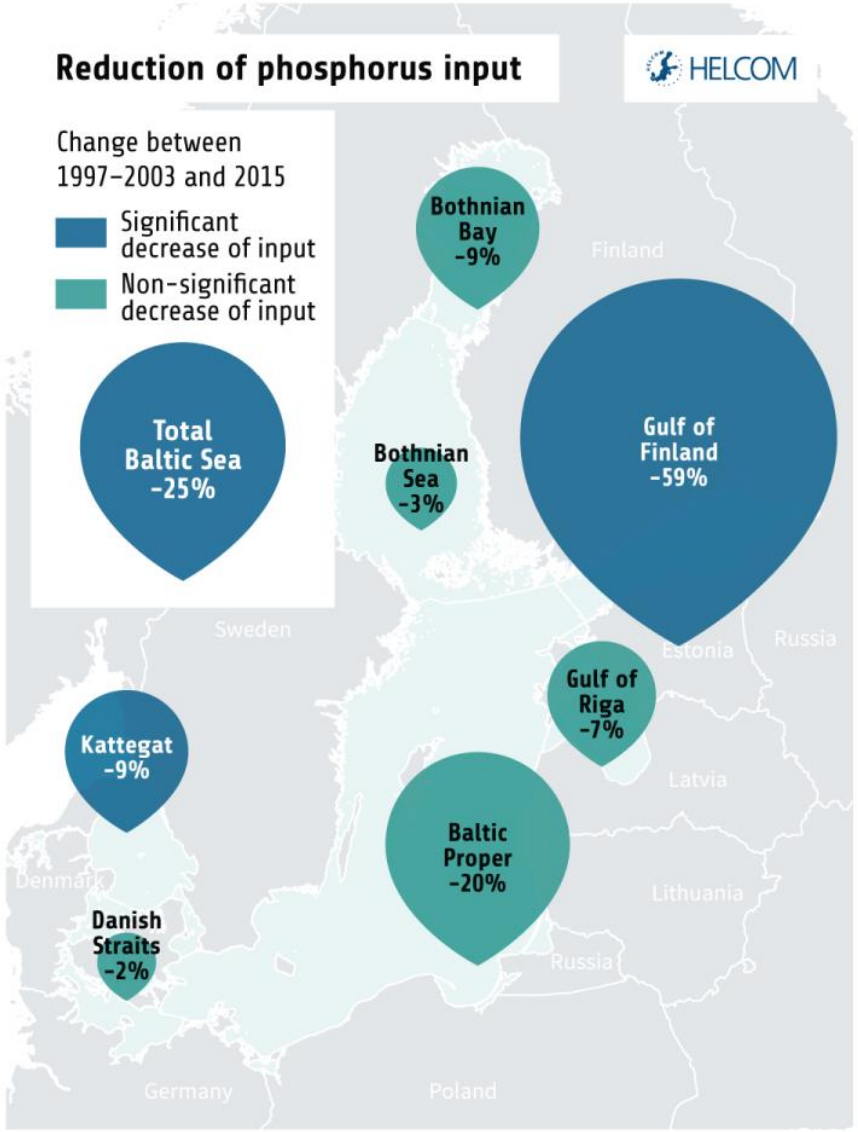
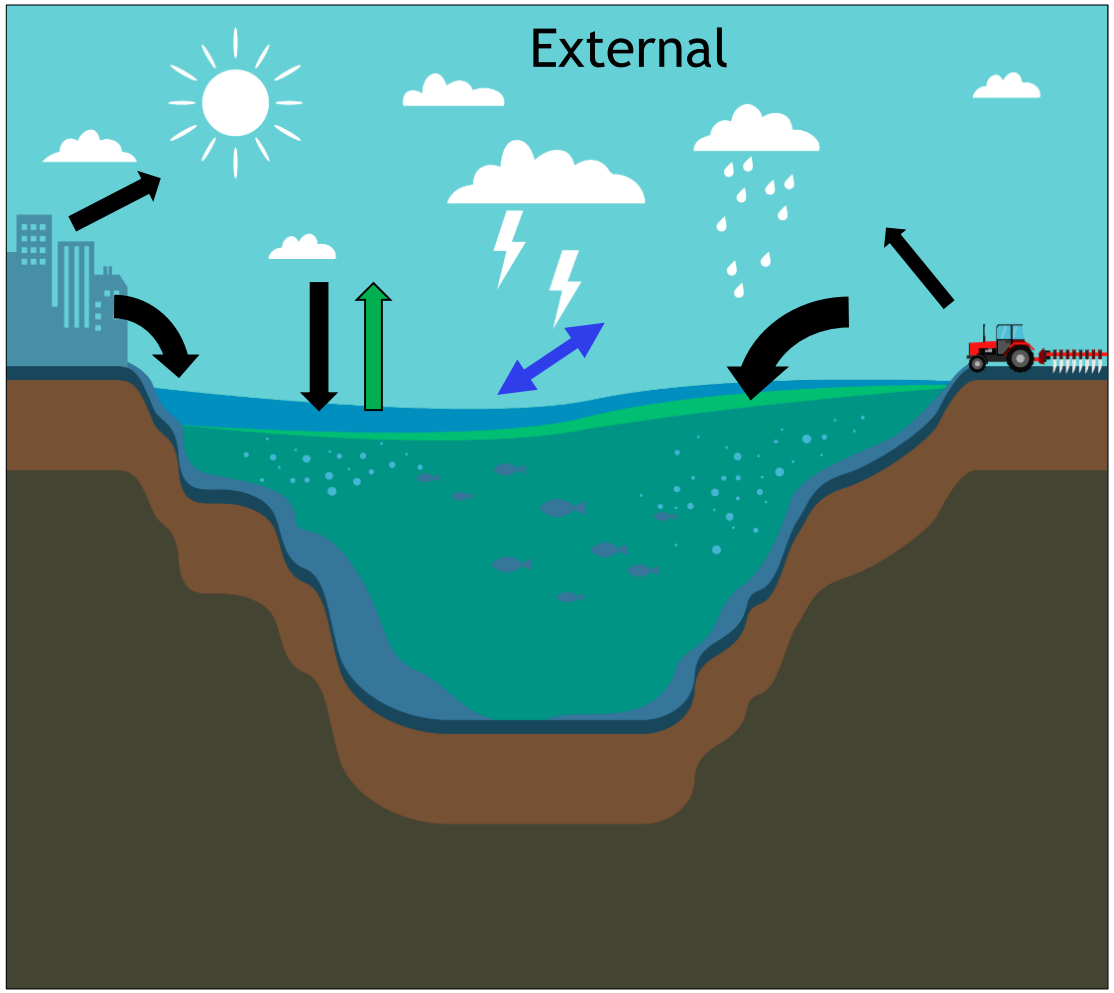
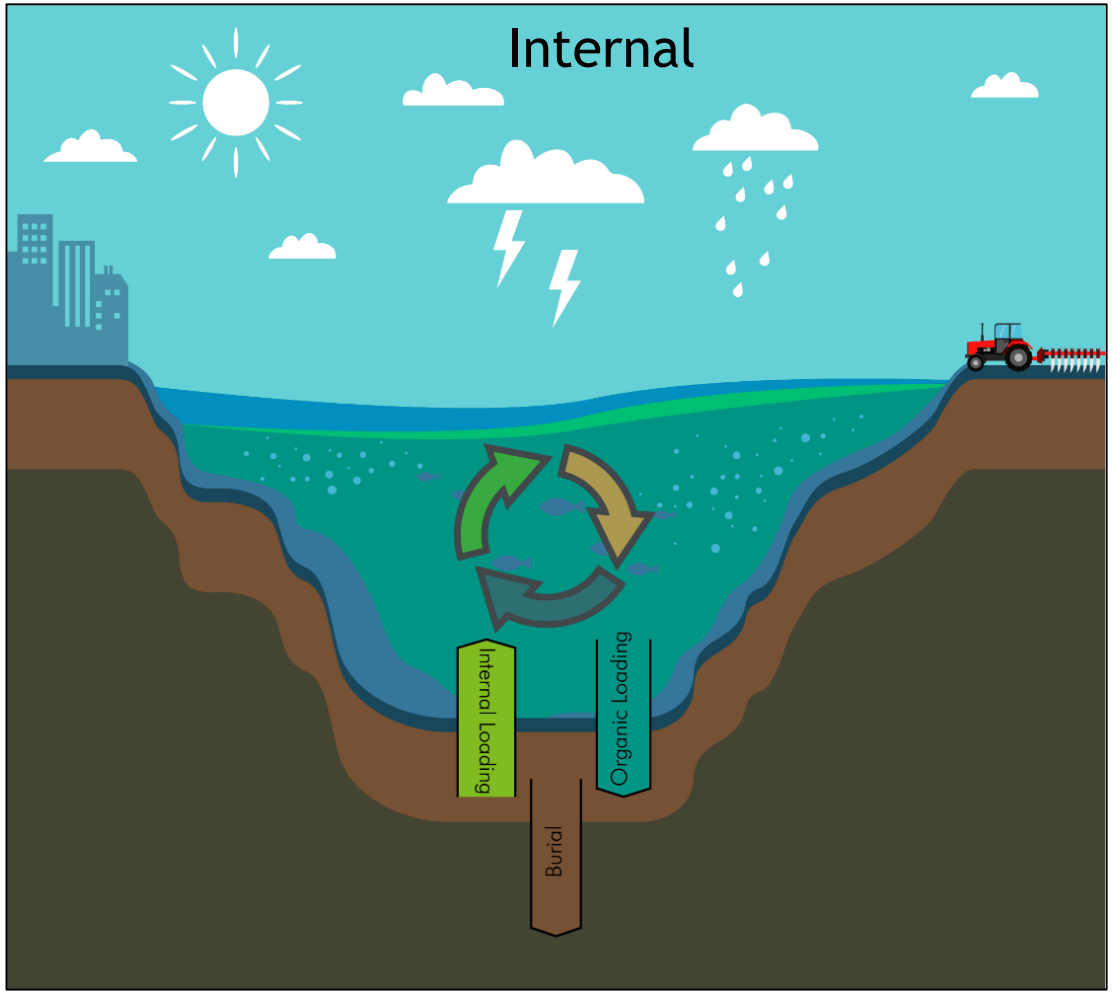

Reduction of nitrogen input
HELCOM
Change between 1997–2003 and 2015
Significant decrease of input
Non-significant decrease of input
Total Baltic Sea -12%
Bothnian Bay -6%
Bothnian Sea -14%
Gulf of Finland -24%
Gulf of Riga -4%
Kattegat -19%
Baltic Proper -9%
Danish Straits -17%
Finland
Sweden
Estonia
Russia
Latvia
Lithuania
Germany
Poland

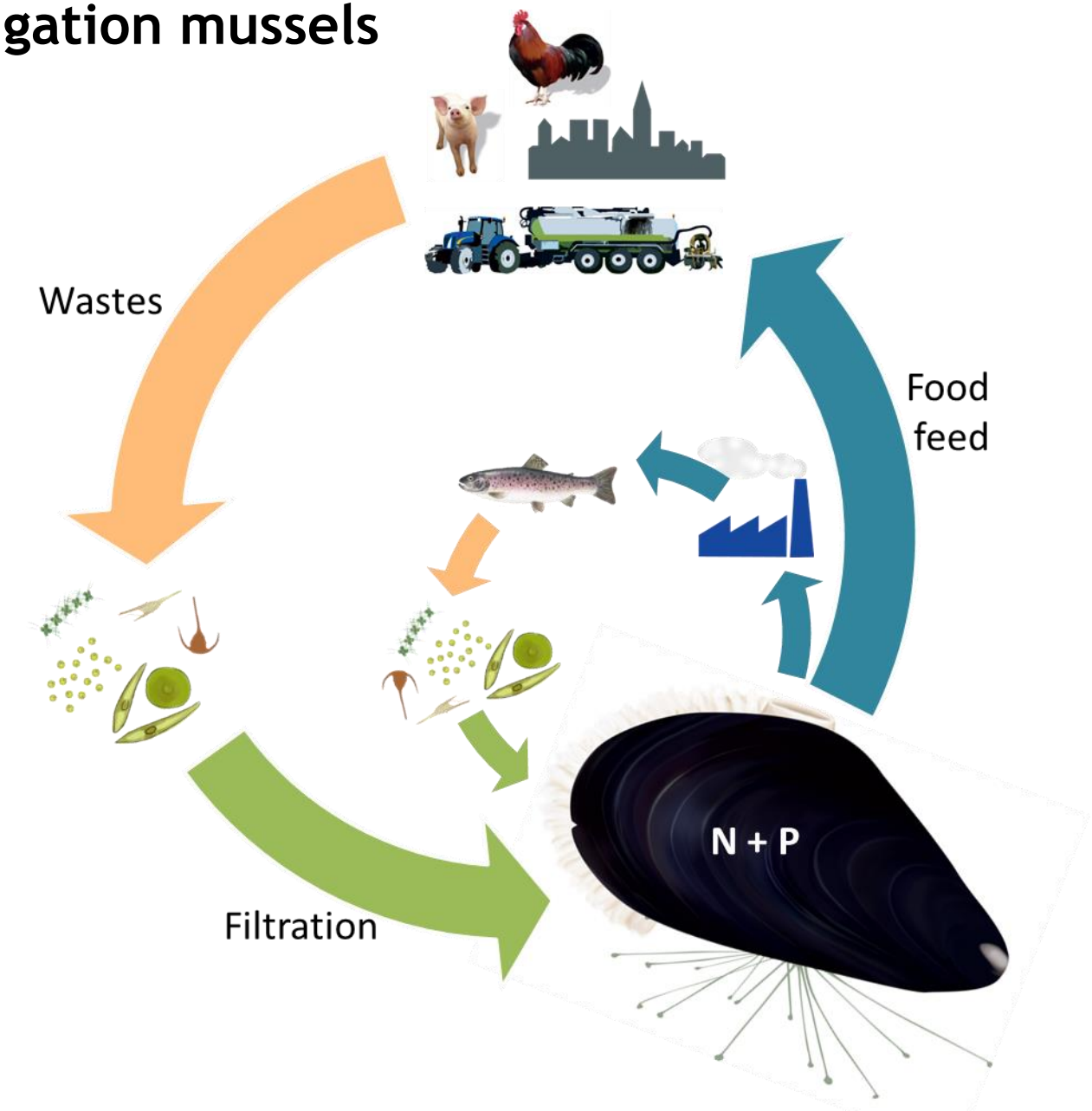

Reduction of phosphorus input
HELCOM
Change between 1997–2003 and 2015
Significant decrease of input
Non-significant decrease of input
Total Baltic Sea -25%
Bothnian Bay -9%
Bothnian Sea -3%
Gulf of Finland -59%
Gulf of Riga -7%
Kattegat -9%
Baltic Proper -20%
Danish Straits -2%
Finland
Sweden
Estonia
Russia
Latvia
Lithuania
Denmark
Germany
Poland

Effects are generally not yet reflected in the status

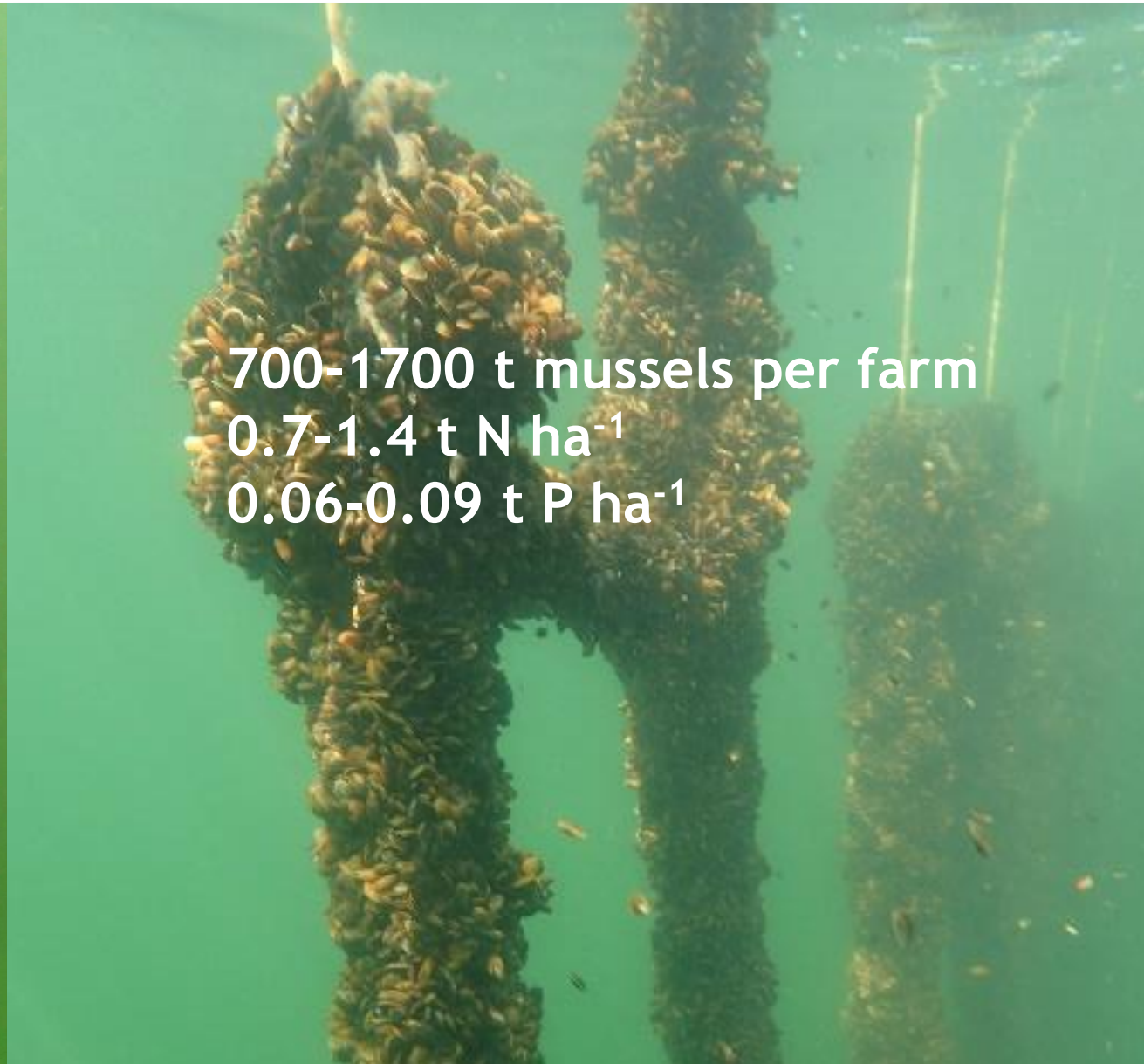

External


Internal
Internal Loading
Organic Loading
Burial

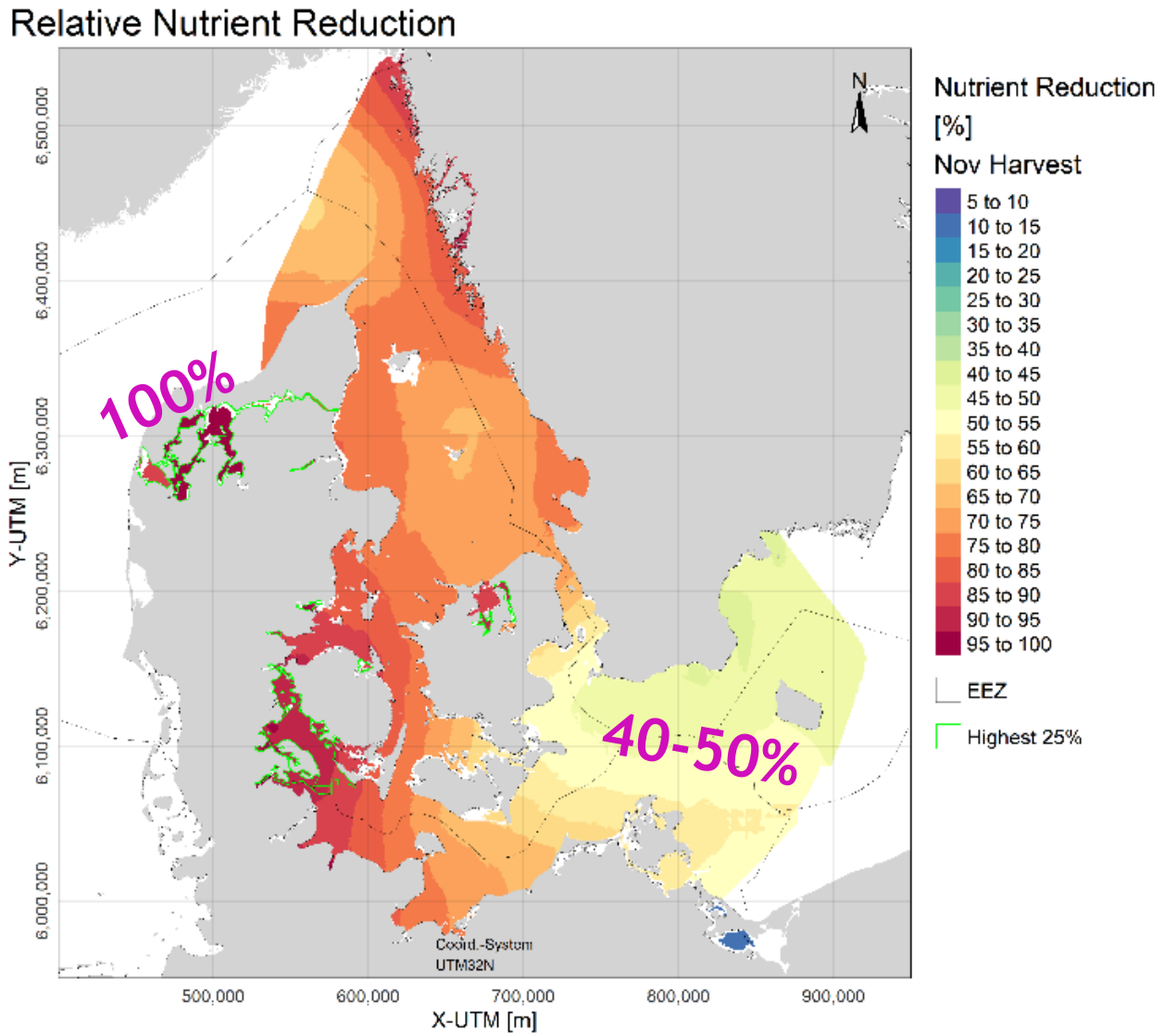
Danish ambition is to produce 100,000 t of mitigation mussels



In general 1 t of mussels = 13.7 kg N & 0.9 kg P

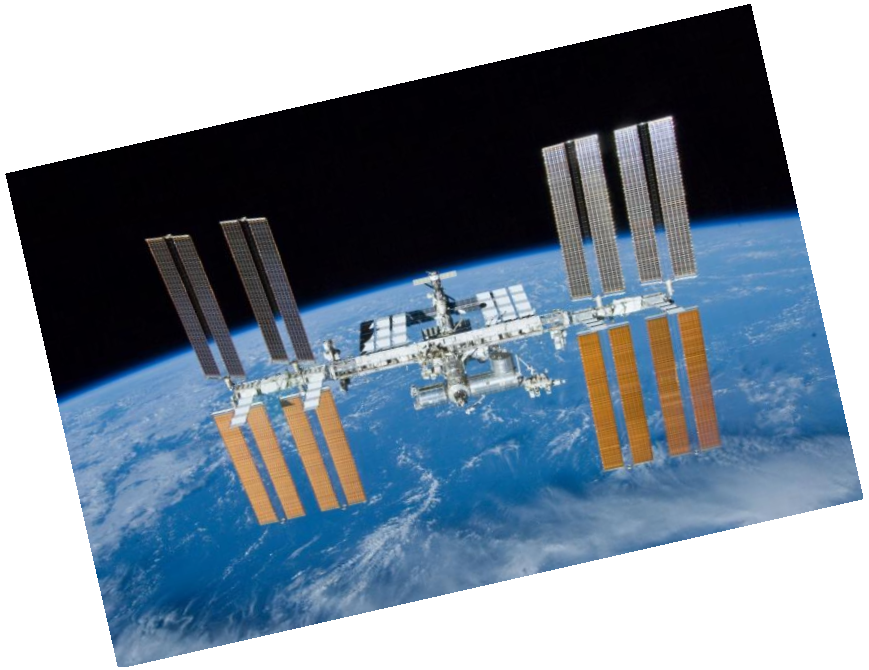


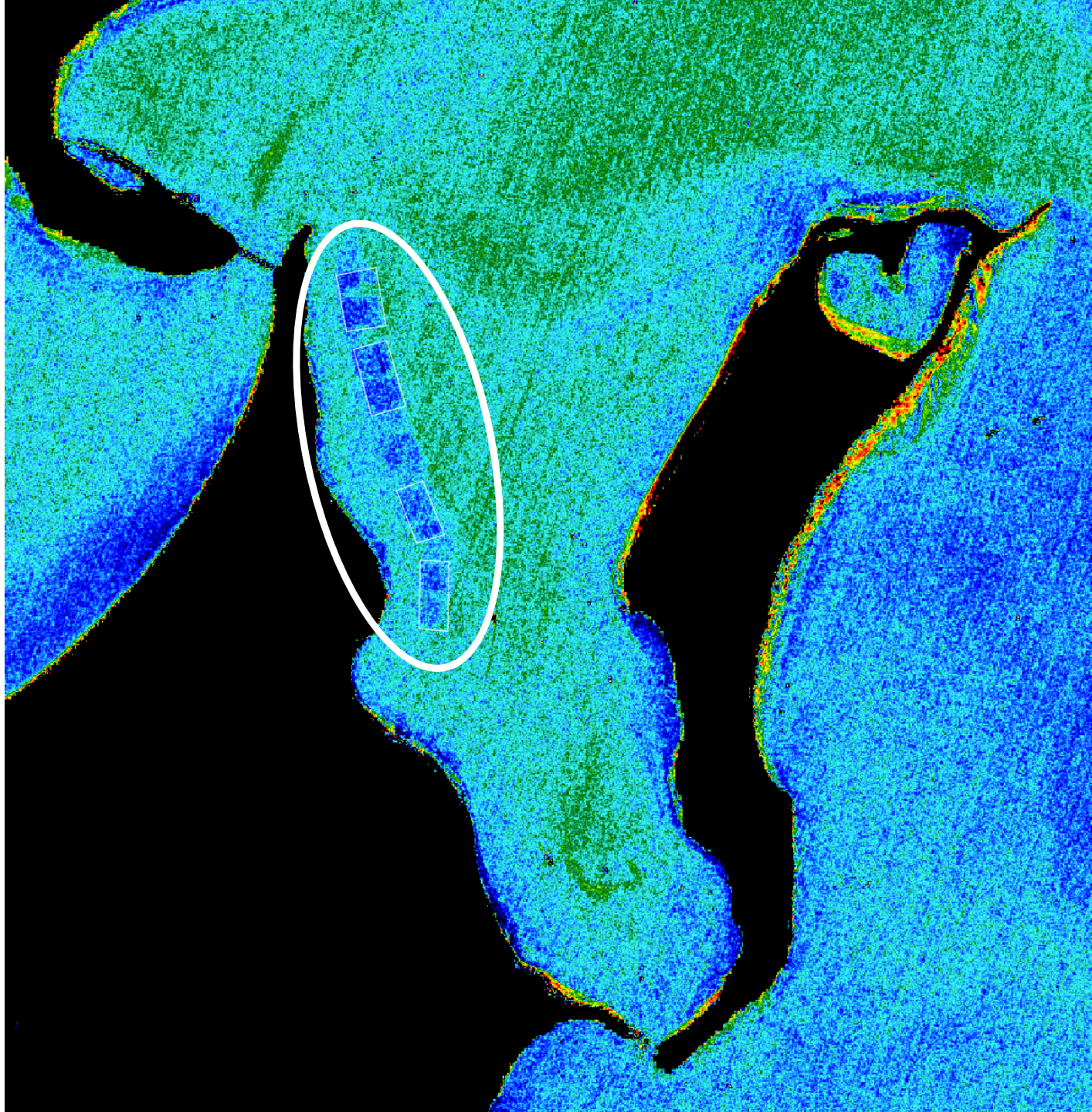
Mussels can be produced in most Western Baltic waters



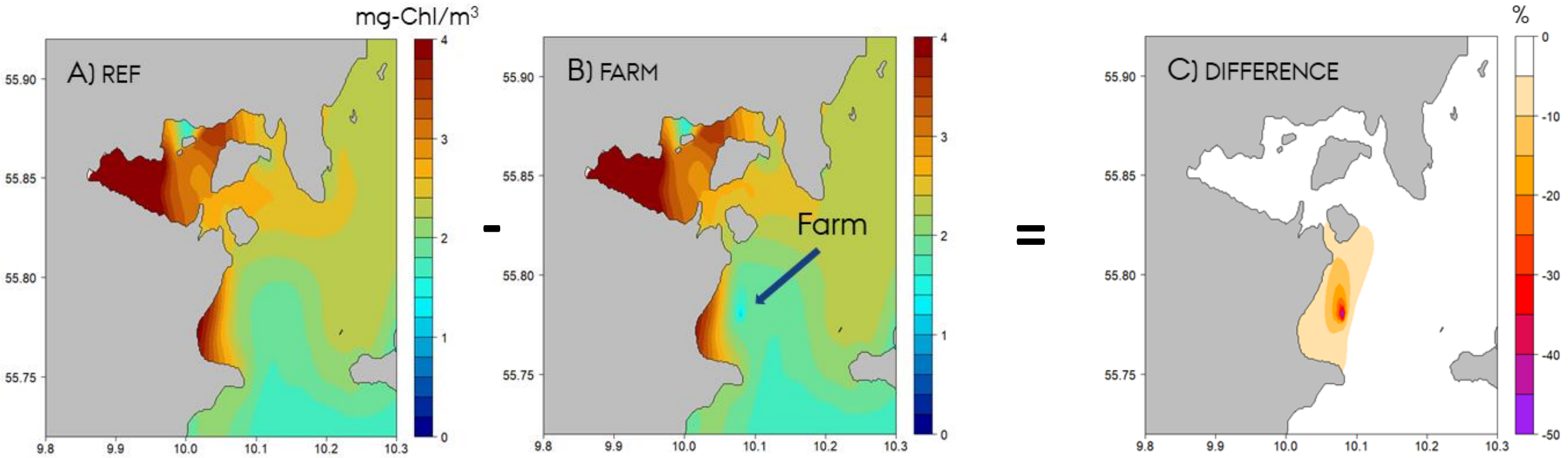

aktivstabil

Effect of filtration on water quality

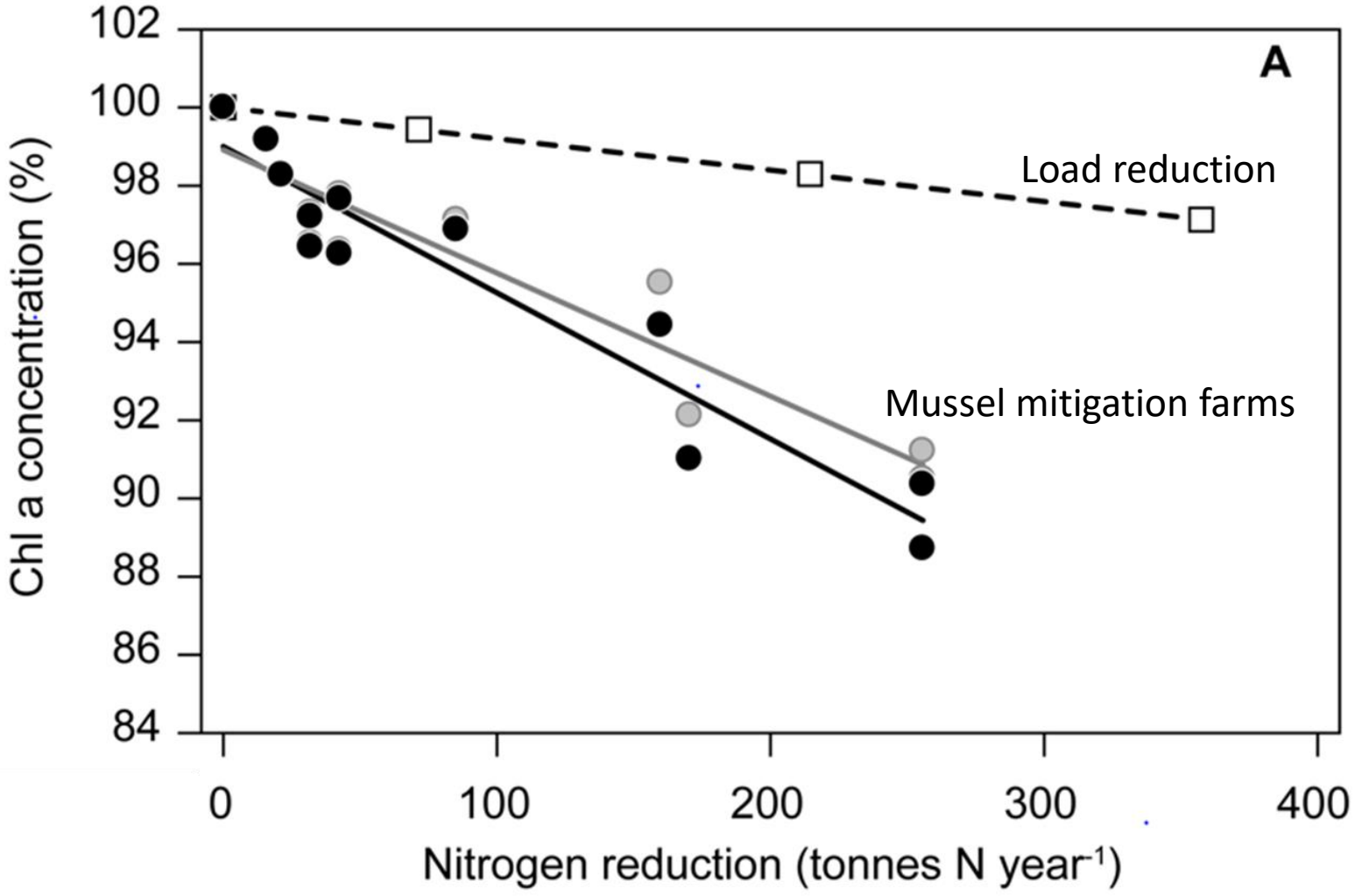




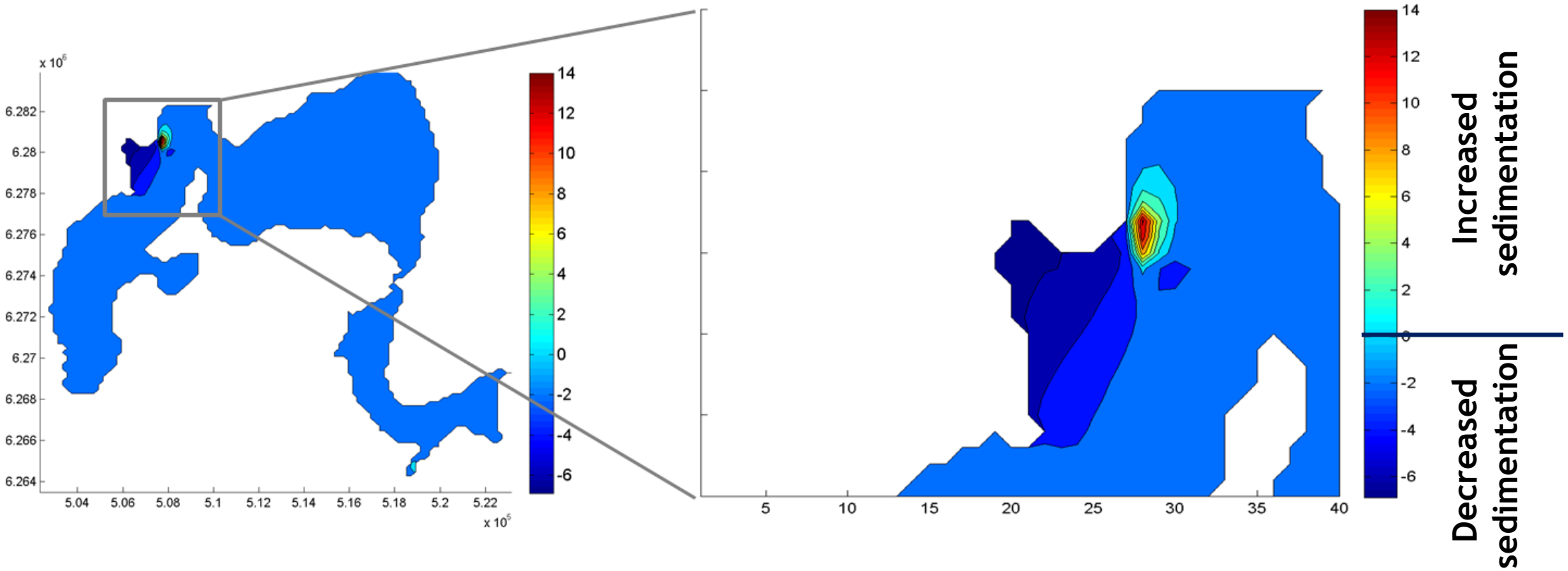
Effect of filtration on water quality



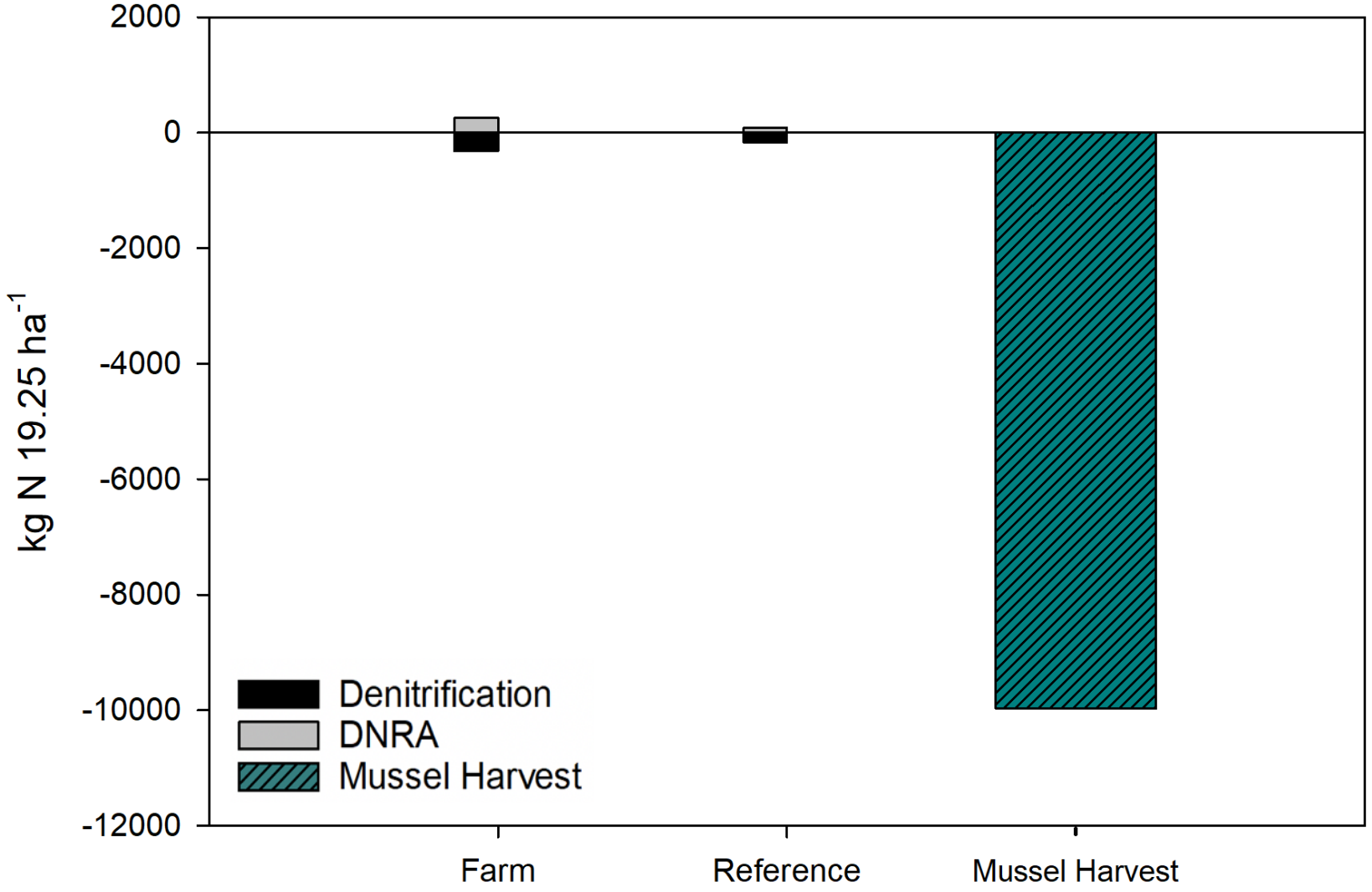
Effect of filtration on water quality



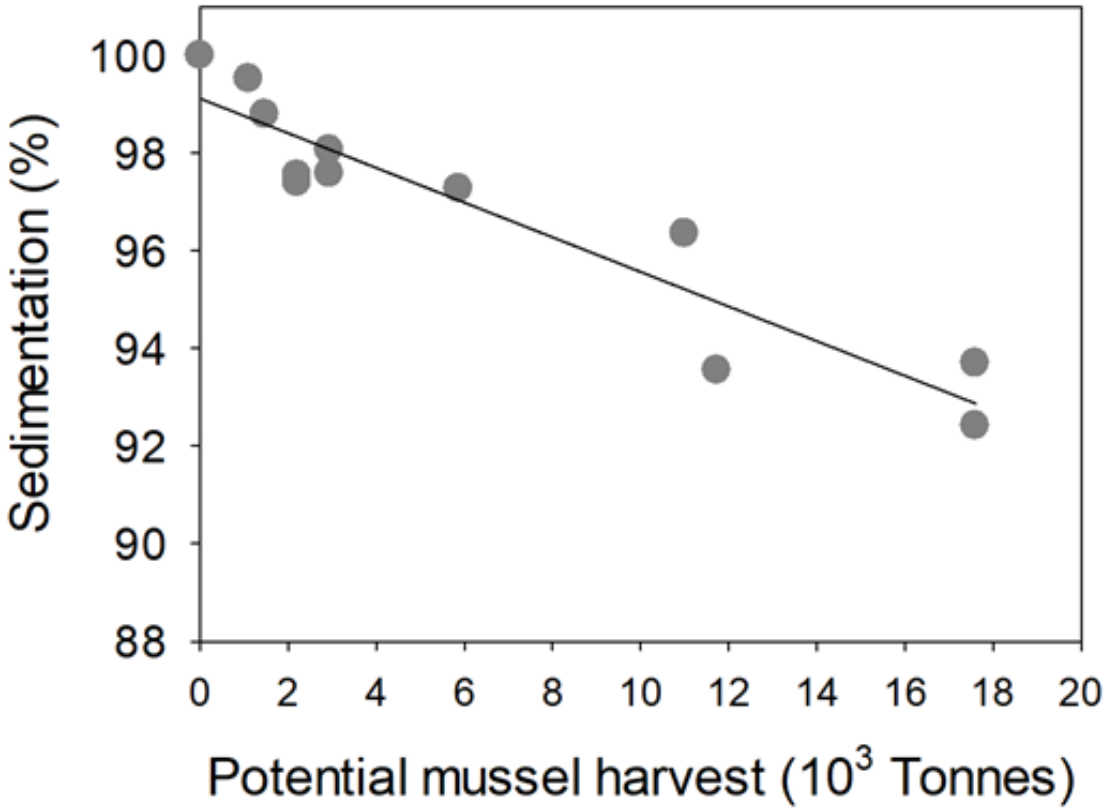
Increased sedimentation under the mussel farm



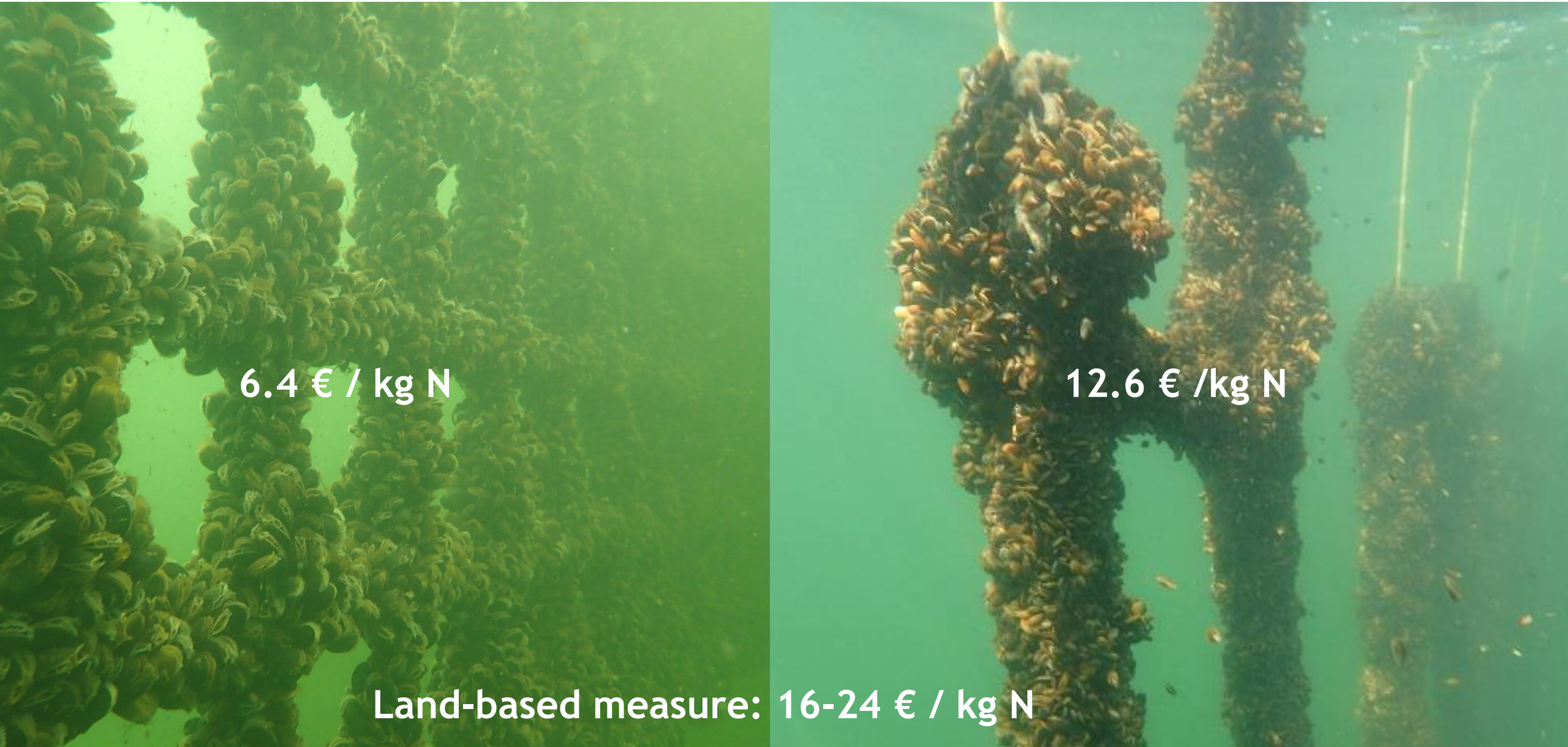
What about decrease in N_2-release from the sediment?



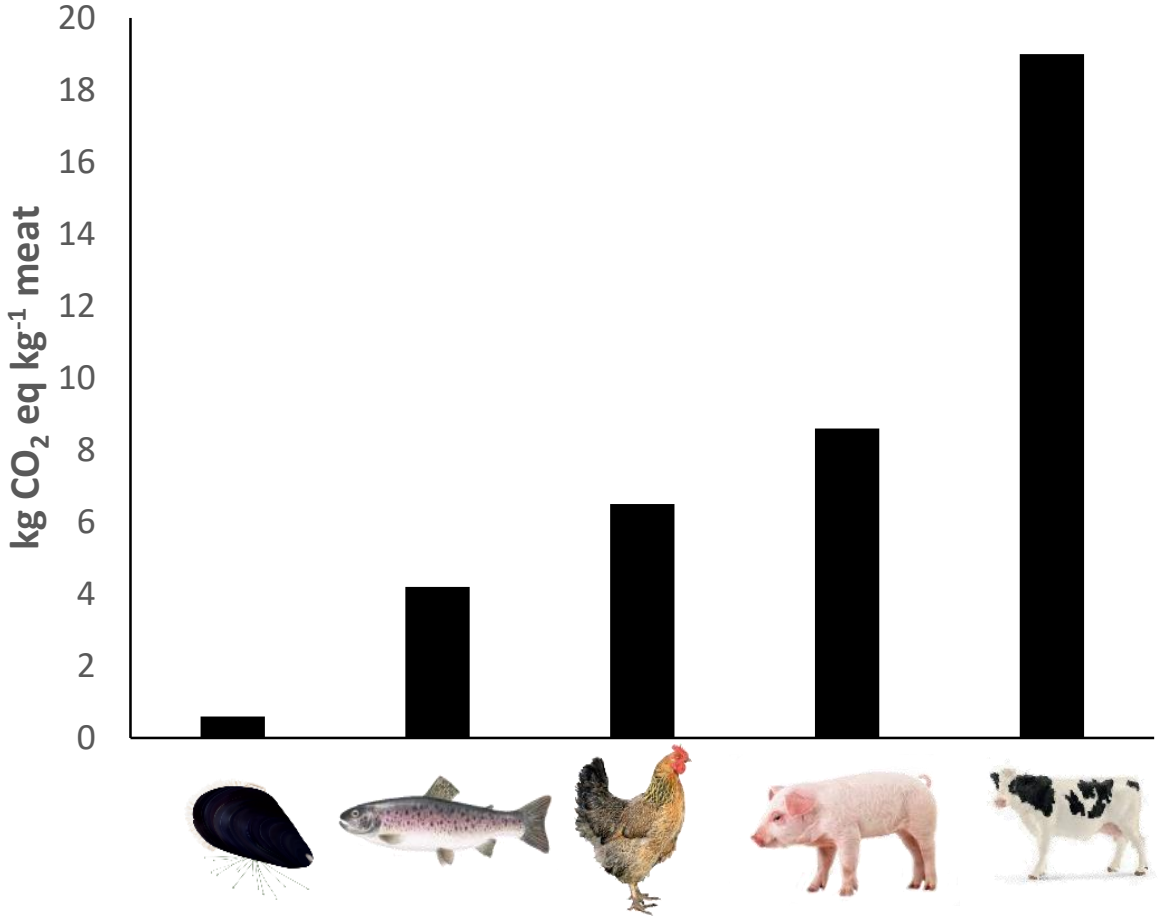
Decreased sedimentation outside the mussel farm



Economy

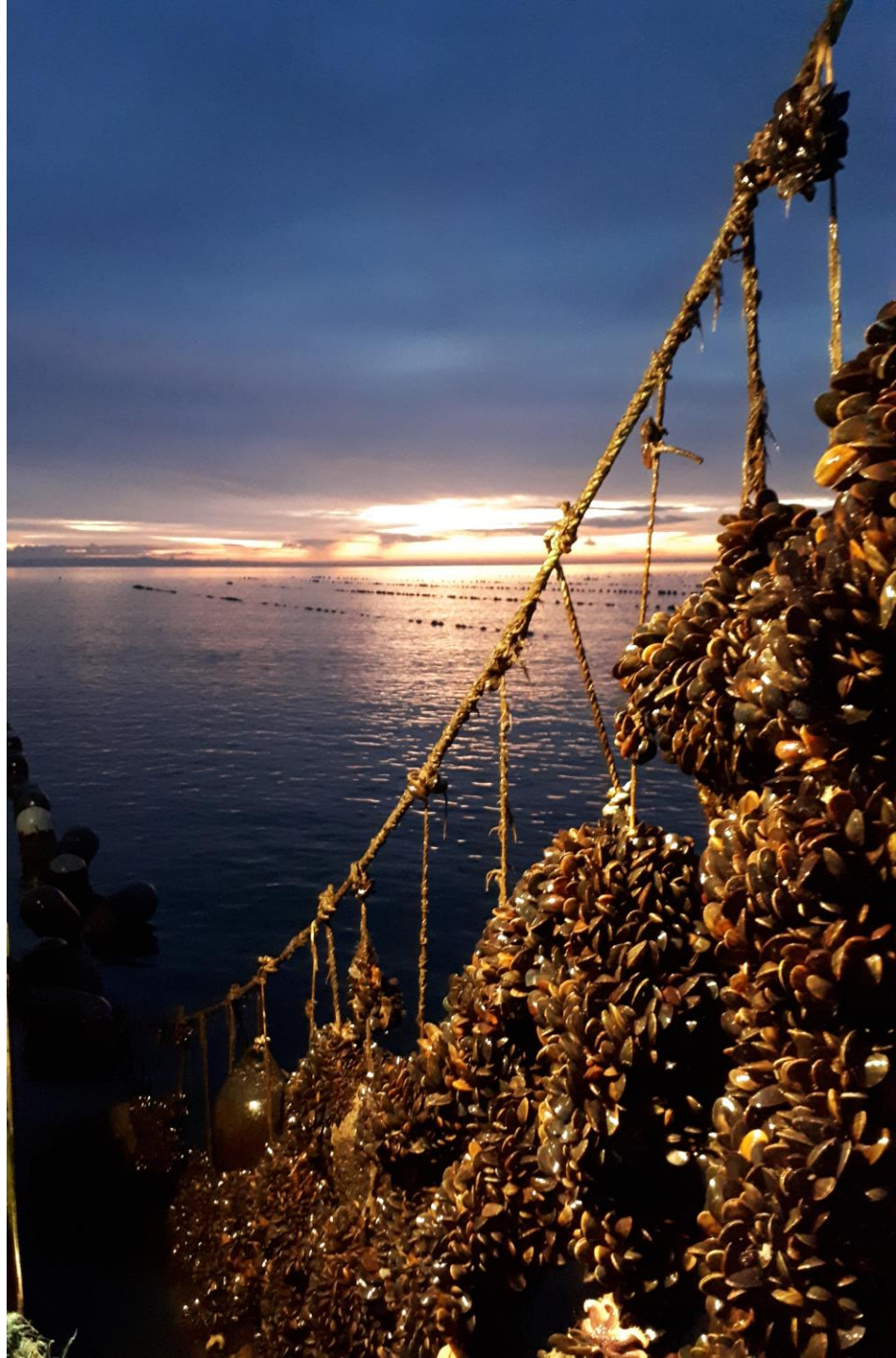


Sustainable blue protein for food and feed



Summary

- Can be produced in most Western Baltic waters
- Area-efficient tool that can remove 0.7-3.0 t N ha^{-1}
- Mussel cultivation provides:
  - Other ecosystem services (better water quality)
  - Sustainable protein sources for food or feed



Thank you for your attention

Read more at:

www.bonus-optimus.eu

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