Development of a European seaweed strategy

Baltic Sea Status

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Seaweed activities in and around the Baltic Sea basin

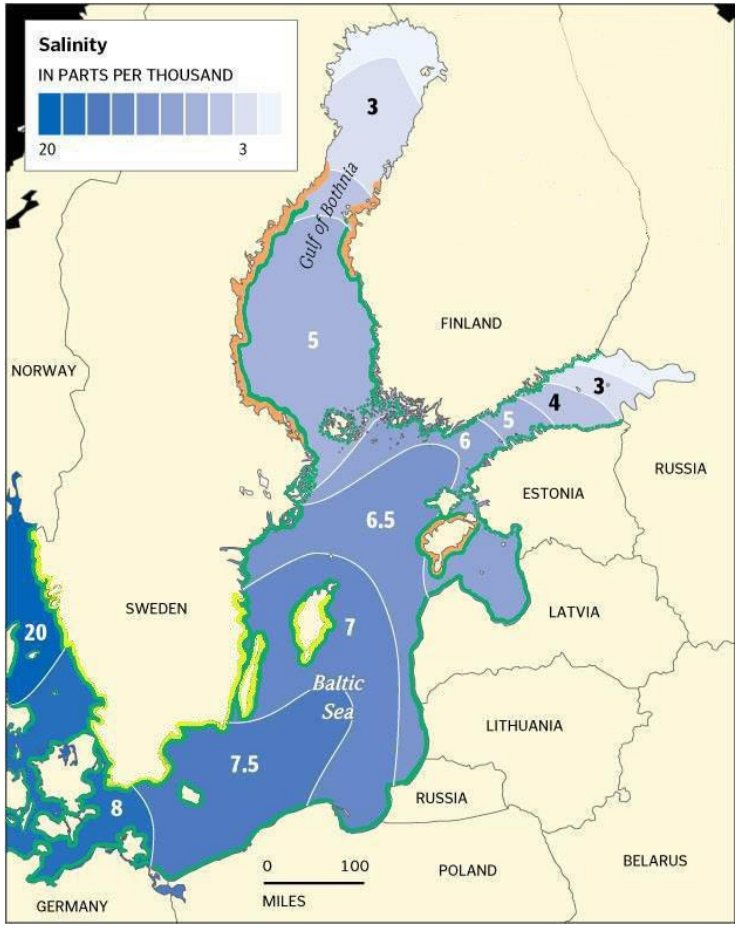
- a brackish inland sea with area of 377,000 sq.km, enclosed by Sweden, Finland, Russia, Estonia, Latvia, Lithuania, Poland, Germany and Denmark,

- eutrophic sea (rich in nutrients), significant salinity differences: from 3-5 in Gulf of Bothnia, through 6-7 in Baltic Proper, up to 20 in Kategatt,

- intensive fisheries and ship transport activities, many military areas, growing windfarm activities,

- seaweed farming mostly in experimental phase.

First semi-industrial farming in: Sweden (1) and Germany (2), wild seaweed industrial harvest and processing in Estonia (2 companies),



Baltic Sea: water salinity

source: https://balticseaweed.com/

Baltic Sea basin: technological status

- The most promising seaweed species in Baltic Proper are: *Furcellaria spp., Fucus spp., Ulva spp.,* while in Western part of Baltic (Danish Straits) target species are *Saccharina latissima* and *Laminaria digitata,*

- Active R&Ds:
  - Public: KTH (SE) , UniTartu (EE), UniTurku (FI), LiepajasUni (LV), BIOR, Tech Uni Wrocław (PL) and many others
  - Private: Baltic Seaweed Solutions (EE), Vetik (EE), Vormsi Agar (EE), J-Tech (PL), Arvo-Tec (FI), SIA Algoritm (LV), oceanBASIS (DE), Nordisk Tang (DK) and many others

- Macroalgae promotion and clastering: SUBMARINER Network for Blue Growth is a leader

- Studies in breeding & cultivation in: Sweden, Estonia, Germany, Denmark

- A lot of studies and many institutions involved in final products development in all countries around Baltic Sea (development of biomaterials and active substances use with special focus on cosmetics, medicine, food and animal feed)

Baltic Sea basin: business status

Demand side:

- although seaweed is not traditionally used bioresource in Baltic Sea region there is recognized growing demand for macroalge products (from both industries and final consumers),

- big consumer interest in seaweed use (according to international consumer research in 2019 [CAWI; n=2000]: 30% of Baltic consumers find seaweed as very healthy food and as many as 25% consumers believe in special benefits of seaweed cosmetics use),

- 50+ commercial companies involved in alginian use in the region (with majority in cosmetics and medicine area),

Supply:

- Close to 100% import

- First attempts to local seaweed farming and biorefinery (Germany, Estonia, Finland, Denmark, Latvia)

Baltic Sea basin: legislative status

- GRASS international project (2019-2021), financed by Interreg Baltic Sea region, with 11 PPs in Sweden, Finland, Estonia, Latvia, Poland, Germany and Russia, for PAs capacity building to create potential for development of macroalgae production and use,

- Specific regulation on seaweed cultivation are largely missing in Sweden, Finland, Latvia, Poland, Estonia and Germany,

- Estonia and Germany have some specific rules on seaweed harvesting,

- For seaweed cultivation, the general aquaculture permit procedures and general water environment and water law apply. Permit paths are different in each country and very complicated. There are no guides for future investors.

- Each country is currently preparing its Maritime Spatial Plans. In some countries the location of aquaculture is foreseen (e.g. Land Mecklemburg-Vorpommern in Germany), in others - it is a permitted function (e.g. Poland), in other aquaculture projects will be evaluated on a case by case basis (e.g. Latvia). Macroalgae are not paid attention in MSPs.

Baltic Sea basin: challenges and needs

- Complicated law, no clear paths to obtain license for cultivation, different regulations in each of the countries of the region – **main obstacle**,
- Limited range of seaweed species to be cultivated in Baltic Proper,
- Limited number of locations for seaweed farming (under evaluation in GRASS project),
- Limited Public Authorities capacity and their knowledge on socio-economic impact on seaweed farming,
- Financing schemes:
  - for investments in commercial farming
  - for seaweed farming as water and environmental service, leading to a reduce eutrophication of Baltic Sea waters and CO_2 accumulation – **main expectation for the future**…

Thank you!

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