



Innovative Uses of Baltic Marine Resources in the Light of the EU Blue Growth Initiative

Development plan for the potential resumption of agar production from red algae *Furcellaria* in Latvia

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Information used from presentations of Madgalena Matczak, Angela Schultz-Zehden, Odd Lindahl, Fredrik Gröndahl, Jörg Süling, Detlef Czybulka



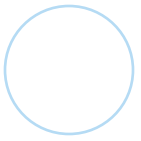
Part-financed by the European Union (European Regional Development Fund)

Specific development plan for the potential resumption of agar production from red algae *Furcellaria* collected from the Baltic Sea coast of Kurzeme, Latvia




Application of agar



- In food industry as:
 - Stabilizer
 - Thickening and
 - Gelling agent
- Pharmaceutical uses
 - Microbiology
 - Dentistry
- Biomedical applications of agarose
 - Immunology, etc.



Collection of furcellaria algae and primary concentrating repositories in the seacoast of Kurzeme



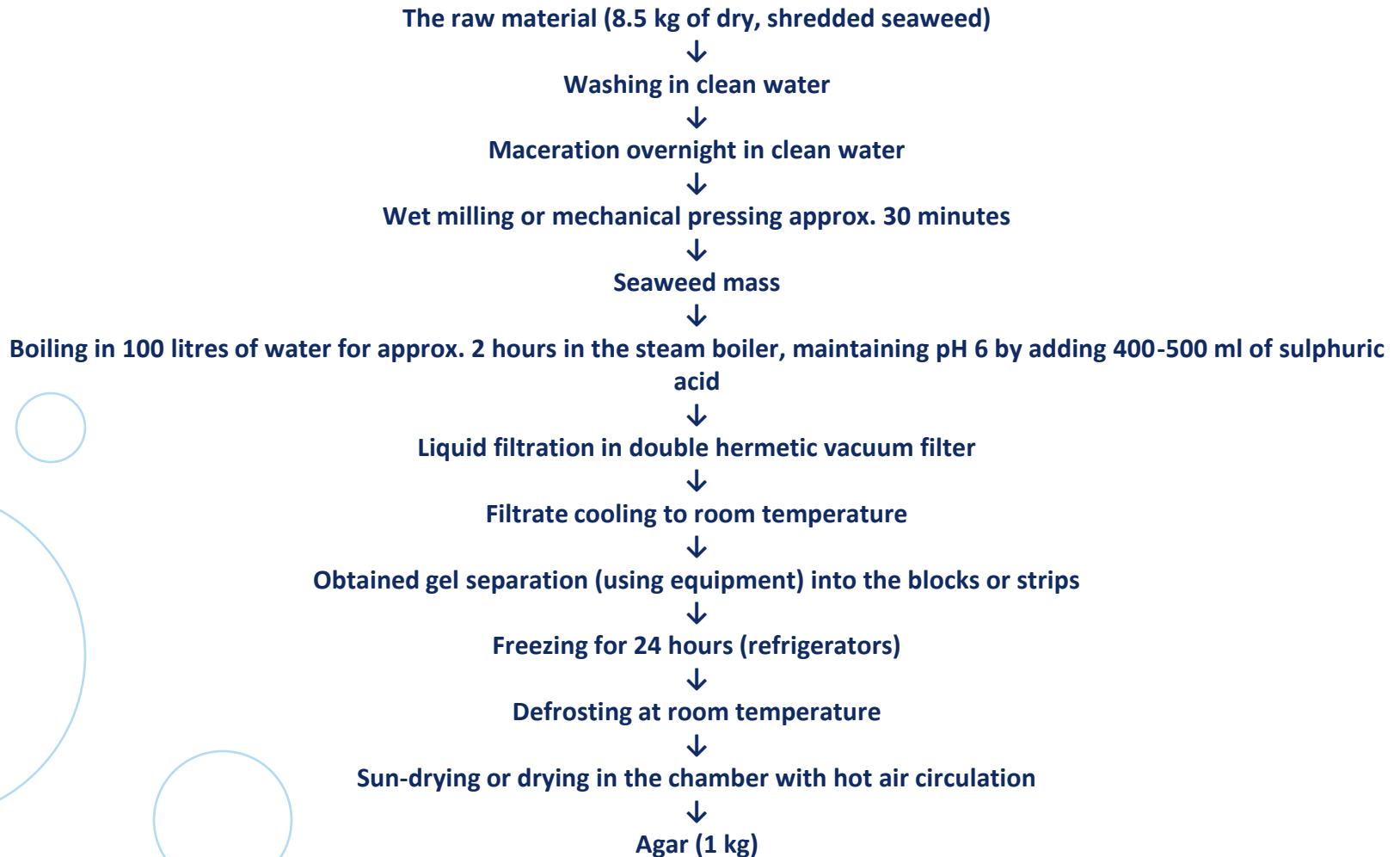
Production of agar

The major steps in the process of agar production includes:

- algae collection
- drying
- extraction
- filtration
- concentration and
- milling



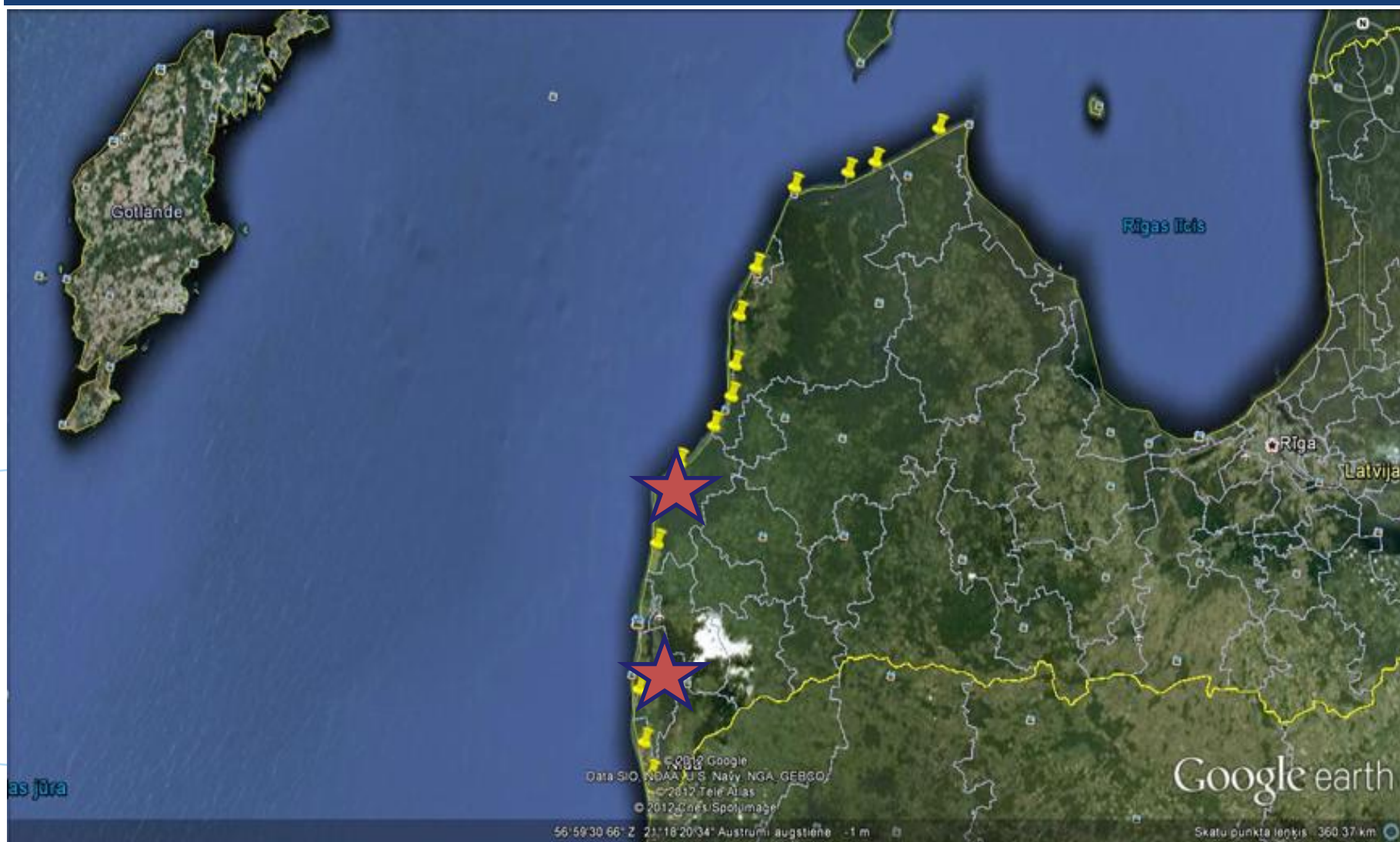
Agar production cycle



Calculation of agar production raw material

Basic expenditures	EUR	EUR/kg
Preparation of the material.		
Collection of furcellaria algae	43825	0,044
Transportation of furcellaria algae	52077	0,053
Purification of furcellaria algae	5122	0,006
Extrusion of furcellaria material	5122	0,006
Processing.		
Washing of furcellaria material	12240	0,013
Rinsing of furcellaria material	57871	0,058
Wet milling	7117	0,007
Extraction	3426295	3,426
Vacuum filtration	129038	0,129
Precipitation and cooling of the filtrate	22015	0,021
Primary processing of the gel	6784	0,007
Processing at low temperatures	3334092	3,334
Drying	3349459	3,349
Milling	12904	0,013
Packing	11574	0,011
General production costs	1576551	
Total:	12 052 086	10,477

Agar production potential



- Scenario Estonia:

- **140 EUR * 3000t = 420000.00EUR (300 000 LVL)**

- Agar production in Latvia:

- **$3000000 \text{ kg} / 8,5 = 252941 \text{ kg}$**

$252941 \text{ kg} * 8 \text{ LVL} = 2023528.00 \text{ LVL}$
 (2882518.00 EUR)

- There is lack of proven technologies and equipment related to agar production in Europe



- Lack of monitoring data – lack of proven data about the quantity of algae
- “Empty” season, because it is financially feasible only if we collect beachcast algae



- FFF-family, friends, fools
- Angels
- Government grants
- Institutional investment
- Banks
- Venture funds



Conclusions

- Need to ensure the cheap heat sources (e.g. biogas stations)
- Need to ensure technological development
- Furcellaria is the most common species of algae in the seacoast of Latvia with the highest amount of biomass
- Agar production would improve the regional development
- Already support from municipalities

Thank you!

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