A Regional Development Strategy for

Marine Biotechnology in Schleswig-Holstein

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Brussels
Schleswig-Holstein

- Total Area: 15.799 km\(^2\)
- Capital: Kiel (240,000)
- Population: 2,83 Mio
- Economically active population: 1,28 Mio
- Rate of unemployment: 7% (national average 7.2%)
- Business: 99% are SMEs (less than 250 employees)
- Focus: Medical technology, maritime, food, information and communication technology, machinery, renewable energy, health, life science
- Life Science: medicine, medtech, biotech, pharmacy

- “to promote a structured, integrated, and innovative maritime policy and
- to project Schleswig-Holstein’s maritime expertise beyond the region”
- pool and coordinate maritime activities in Schleswig-Holstein’s government
- Concentrate on maritime competences
- create of networks and clusters
- support innovation and ideas
- strengthen maritime economy
- maritime model region
- Maritime Action Plan
Masterplan Marine Biotechnology
Schleswig-Holstein

- Responsible within SUBMARINER: Norgenta
- Cluster “Life Science Nord” for MedTec, Pharma and Biotech
- Focus topics within Biotech:
  Drug research, molecular diagnostics, cell technologies and marine biotechnology
- Agency in charge for the Masterplan: dsn
- Status analysis of companies, research institutions and further stakeholders
- Determination of trends, needs and potential uses
- Highlight strengths, weaknesses, opportunities and threats
- Recommendations and proposals for projects
Masterplan Marine Biotechnology
Schleswig-Holstein
Time schedule

Oct 2010
Development Masterplan Norgenta & dsn

Nov 2011
Online survey

Nov 2012
Interviews
Additional discussions

Dec 2013

Kick-off Meeting
Partner Meeting Trelleborg
Partner Meeting Kiel
BlueBiotech Event Kiel
Masterplan Document
Cabinet SH CSA Final Conference
Official launch (24-5-13)
Compendium Roadmap BSR Network

Workshops
Advisory board meetings"
Establishment of an advisory board consisting of representatives from economic (big company: DuPont & SME: CRM), politic (federal: BMWi & regional: MWAVT), partner cluster organization (BioCon Valley), science (director GEOMAR, director EMB)

4 advisory board meetings
Module 1
Project management

- Module 2: Document analysis and processing of information
- Module 3: Online survey
- Module 4: Structure interviews and additional discussion
- Module 5: Workshops

- Database
- Module 6: Preparation of the document “Masterplan”
- Module 7: Final presentation

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Players in Schleswig-Holstein

Research institutions in total: 22  Basic & Applied Science

› GEOMAR Helmholtz Centre for Ocean Research Kiel  www.geomar.de
Kieler Wirkstoff-Zentrum: Biological active substances from marine microorganisms for application in the field of human and animal health, plant protection, cosmetics and nutraceuticals

› Fraunhofer Research Institution for Marine Biotechnology  www.emb.fraunhofer.de/en
Aquatic cell culture and aquaculture

Business in total: 26  Products & Services

› Sea & Sun Technology GmbH  www.sea-sun-tech.com
Cultivation of microalgaes for different applications

› Coastal Research & Management / oceanBASIS  www.crm-online.de / www.oceanbasis.de
Research in the field of biological active substances from marine macro-organisms. Production of marine cosmetics.
Research institution scope of activities

n=11
multiple answers possible

- pharmacy
- aquaculture
- chemistry
- environment
- cosmetics
- diagnostics
- food
- industrial processes, processing
- energy
Business scope of activities

n=16
multiple answers possible

- pharmacy
- diagnostics
- aquaculture
- food
- cosmetics
- chemistry
- industrial processes, process..
- energy
- environment
- others

- priority 1
- priority 2
- priority 3

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SWOT
Workshops, Interviews, Earlier Studies
Some Examples

Strengths
- strong academic expertise (GEOMAR, EMB, cluster of excellence “Future Ocean”)
- existing technological equipment
- location between two seas
- living networks

Weaknesses
- short-term funding
- only little cooperation between research and industry
- scarcity of financial resources and stakeholders

Opportunities
- Increased use of renewable resources and alternative technologies
- Participation in ERA-NET Marine Biotech

Threats
- strategic changes in research institutions
- low risk-taking of investors
- no or only little focus on “strong” topics
The Masterplan identifies opportunities for a **strategic development** of marine biotechnology in Schleswig-Holstein.

Promising **potentials** should be used to foster **growth and employment** in a **sustainable way** by systematic **transfer** of technology and know-how.
Vision

Until **2030** Schleswig-Holstein will generate **similar** amounts of added value through **marine biotechnology** as through **conventional agriculture**.

With the development and implementation of **sustainable technologies** and the use of **marine resources**, marine biotechnology will make a significant contribution to a **resource-protecting use** of environmental resources, to **CO₂-neutral energy production** as well as to **human health and well-being**.
“Actual” Masterplan
Proposed Activities
some examples

Research
- combination of technologically and ecologically approaches
- marine biomaterials in tissue engineering
- marine cell cultures as environmental test systems
- new marine nanoparticles
- micro- and macroalgae

Industrialisation
- marine biotechnicum
- high-throughput enzyme screenings
- development of new aquaculture systems
- better up-scaling in marine aquaculture
- combinations with other technologies

Dialogue & Structure
- strengthening interaction
- establish coordinator
- joint internet platform
- awareness raising campaign in industry

Qualification
- qualify non-academic staff
- study course “marine biotech”
- Qualify techtrans personnel

Economy
- food from marine resources
- better sustainability in marine aquaculture

Five Central Focus Areas
“Actual” Masterplan Implementation

- Schleswig-Holstein’s government (cabinet) agreed to the masterplan, 2/2013
- Regional innovation strategy
- Working group consisting of members of “Sea Our Future” and experts in the field
- Public presentation and discussion in Kiel, May 24, 2013

**Implementation concept:**
- Networking
- Financial resources
- Coordinator
- Attract private capital
- …
Thank you!

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