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Desktop Study Report : Linking management of natural coastal resources to socioeconomic development

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Desktop Study Report

Linking management of natural coastal resources to socioeconomic development

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Introduction

The riparian states of the Baltic Sea have a long tradition of economic and cultural exchange. The Baltic Sea constitutes not only a common transport route, but also a shared natural resource and an interconnecting environmental characteristic. From the 13th until 17th century the Hanseatic League constituted a commercial and political confederation which led to great prosperity along the Baltic coast. In the 20th century the exchange along the Baltic coast was interrupted by the cold war and the iron curtain. However, since the collapse of the Soviet Union and the integration of countries such as Poland, Lithuania, Latvia and Estonia into the European Union, the region is once more reverting to its common identity. This is reflected in the increasing number of cross-border co-operations on many private and public sectors. The Baltic countries undertake joint activities in order to strengthen and improve nature conservation and socioeconomic development in the region. The sustainable management of the natural resources of the Baltic coast is a key for successful socioeconomic development of the region. In this respect it is important to utilize synergies between natural resource management and socioeconomic development.

EU funding programmes for the Baltic region

In order to strengthen the cross-border relations, the idea of a “Euroregion Baltic” was developed, which led to a formal agreement on establishing the Euroregion Baltic in 1998. In order to intensify institutional cooperation, common identity and environmental, social and economic development the EU member states established funding programmes within INTERREG which directly target the Baltic region. The Baltic Sea Region was first included in INTERREG III which was running from 2000 until 2006. The INTERREG programmes cover a wide range of sectors and are divided into three so called strands with different geographical scopes and objectives:

- **Strand A: cross-border cooperation**
 - This is targeted at the cooperation between NUTS III regions which are situated directly at federal borders.
- **Strand B: transnational cooperation**
 - This Strand incorporates bigger cross-country regions such as the Mediterranean region, the Atlantic coast region but also the Baltic Sea Region.
- **Strand C: interregional cooperation**
 - This strand covers projects which include EU member states and non-EU member states.

Since INTERREG IV which runs from 2007 until 2013 the EU is providing funding which is directed specifically to the “South Baltic” Region. This highlights the importance of this specific region with significantly more anthropogenic activities such as shipping and cargo transport, tourism, industry and energy production. Included in the programme are the coastal regions of Germany, Denmark, Sweden, Poland and Lithuania.

Background and approach of the desktop study

The idea for the desktop study was developed in the course of the INTERREG IV A South Baltic Programme project HERRING. The project partners found that there is a need to better understand the link between the management of coastal regions including its natural resources and the socioeconomic development in coastal regions. The conducted desktop study had the objective to:

- a) get an overview of finalized and ongoing projects that deal with the management of natural coastal resources.
- b) analyse whether or not these projects included a link between coastal resource management and socioeconomic development
- c) find out examples how former projects implemented such a link

Geographically the study focused on projects in the South Baltic region, which includes in accordance to the INTERREG IV A South Baltic Programme the countries: Denmark, Germany, Poland, Lithuania and Sweden. Furthermore, the study only included transnational projects, but excluded projects with partners from only one country.

Hence the study includes projects which were partly funded within one of the following programmes:

- **INTERREG IV A: South Baltic Region 2007 – 2013**

This programme has not existed in previous INTERREG calls. It has a special focus on strengthening co-operations and the sustainable development of the South Baltic region. For the study especially projects with priority *2.1 - Management of the Baltic Sea environment* and *2.3 – Sustainable use of natural and cultural heritage for regional development* were of significance.

- **INTERREG IV B: The Baltic Sea Region 2007 – 2013**

This programme is funding projects which contribute to the Strategy for the Baltic Sea Region (EUSBSR) which “aims to save the sea, connect the region and increase prosperity”. The most relevant of the four priorities is priority *3 – Baltic Sea as a common resource*.

- **INTERREG IV B: Central Europe Region 2007 – 2013**

This programme region was included in the study because the state Mecklenburg-Vorpommern in Germany and Zachodniopomorskie and Pomorskie in Poland are part of this region.

- **INTERREG IV C**

Due to the very broad geographic scope of this programme usually only single case study areas or projects are situated at the Baltic Sea. Anyhow, the programme was included in the study.

- **LIFE programme**

The LIFE programme is EU's funding instrument for the environment and climate action. The general objective of LIFE is to contribute to the implementation, updating and development of EU environmental and climate policy and legislation by co-financing projects with European added value.

Projects which were carried out within the INTERREGIII B: The Baltic Sea Region 2002 – 2007 programme were considered in the study process but not further analysed and included. For the projects which would have fit into the scope of the study, e.g SMAN 2000 or BaltCoast there were no results available any more, because the projects were conducted more than a decade ago.

Additionally a project that was partly funded by the Norwegian Grant was included. The Norwegian Grant is a source of funding for VISLA and for Habitat Mapping. The goal of the NG is to strengthen bilateral relations with 16 EU countries and reduce economic and social disparities in the European Economic Area. There were two funding periods: 2004-2009 and 2009-2014. For the report, a total of 14 projects were selected for an in depth analysis of the objectives and published results. The selection of projects for the report is based on whether or not there exists a direct link or indirect link to socioeconomic development. In order to comprehensively analyze the projects several interviews with project partners were conducted.

EU Blue Growth Strategy

Blue Growth is the European commission's initiative to support sustainable growth in the marine and maritime sector. Seas and oceans contribute to the European economy and have great potential for innovation and growth. The strategy points out five sectors that have particularly high potential for sustainable jobs and growth:

- Aquaculture
- Coastal Tourism
- Marine Biotechnology
- Ocean energy
- Seabed mining

In addition, the Blue Growth Strategy also identifies three essential components for providing knowledge, legal certainty and security in the Blue Growth economy:

- Marine knowledge
- Maritime Spatial Planning
- Integrated Maritime Surveillance

These sectors and essential components provide a structural help when identifying and categorising previously conducted projects and are used in the end of the report to summarise the results.

Desktop study results/ Identified projects

Project	Comments	Key issues
Direct – as a goal of the project - link to socioeconomic development		
SUBMARINER	The impacts of marine uses (e.g., cultivation and/or harvesting of macro algae, microalgae, mussel, reed; fish aquaculture; wave energy) on the environment, their economic feasibility and regional applicability were analysed.	Human uses of living and non-living resources
Parks and Benefits	The projects objective is to strengthen socioeconomic development by implementing a variety of measures towards a more sustainable tourism	Developing sustainable tourism in parks
AQUAFIMA	The project analyses a potential integration of aquaculture in fishery management plans. Potential and feasibility of different aquaculture business, employment potential and education in the aquaculture sector, market survey and promotion of aquaculture products.	Fishery management and aquaculture
Baltic Green Belt	Promotion of conservation measures in the area of the former iron curtain along the Baltic coast.	Nature conservation, promoting the region and tourism
Bucefalos	Cultivation of mussels and algae for production of biogas and water cleaning	Aquaculture
Wetland, Algae and Biogas	Collection of seaweed for production of biogas and fertilizers	Reduction of eutrophication by reconstruction of wetlands, distraction of algae from shores and using them for biogas production and as fertilizers
Not direct - as a goal of the project - but significant link to socioeconomic development		
PartiSEApate	Marine Spatial Planning is determining directions of development of different human activities, like shipping, offshore energy, fisheries, aquaculture, tourism, etc.	Marine Spatial Planning
HERRING	Develop recommendations for a more sustainable management of coastal spawning grounds. Identified the need for awareness raising. Potential awareness raising through the marketing and	Management of coastal spawning grounds

	promotion of local herring products. This potentially benefits the socioeconomic development of the region	
WEBAP	Using wave energy in order to pump fresh oxygen-rich surface water down to oxygen-poor, hypoxic, bottom layers in coastal areas	Ocean energy
Some link to socioeconomic development		
VISLA	Increase of the quality of controlling, diagnosing and forecasting of the environment state is helpful during strategy development for different human economic activities	State of environmental conditions, water quality
Habitat Mapping	The project was mostly focused on conservation issues including the maintenance of biodiversity but collected data on spatial distribution of ecosystem resources is crucial for setting priorities during preparation of the Marine Spatial Plans.	Habitat mapping, biodiversity
ARTWEI	Strengthening of cooperation among various stakeholders will contribute to more effective development of coastal zone management and regional spatial plans considering priorities of different groups of interests.	Coastal zone management, cooperation among stakeholders
The Baltic 21 Eco Region Project	Only minor focus on the management of natural resources. Project advocates a ecosystem service approach to make natural resources more tangible. Stronger focus on energy, mobility, democracy and tourism.	Identifying best practices for sustainable development
Balance project	Worked with Marine Spatial Planning which indirectly addresses economic development by pre-allocation of space for new activities and investments	Marine Spatial Planning

Project title: AQUAFIMA – Integrating Aquaculture and Fisheries Management towards a sustainable regional development in the Baltic Sea Region

Programme area: Baltic Sea Region Project (INTERREG IV B)

Partnership: The State Development Cooperation Mecklenburg-Vorpommern as Lead Partner and 11 project partners from Germany, Denmark, Poland, Estonia, Norway, Latvia and Lithuania.

Duration: 2011- 2014

Project webpage: <http://www.aquafima.eu>

Main objectives:

The project aims at a substantial expansion of aquaculture activities in the Baltic Sea Region and analysed how this could be integrated in to the management of the fisheries sector. By analysing current fishery policies the project identified and detected potentials on how to better integrate aquaculture based measures, for example restocking strategies. A study of the potential of aquaculture for the regional employment markets was carried out, this expands to strengthening the current education and training in the aquaculture field. Furthermore the project developed recommendations on how to combine aquaculture, fishery and tourism and how to brand, promote and market regional fish products.

Activities:

The project published policy papers on the prospects of (re)stocking, produced a manual on infrastructure and planning needs for new aquaculture facilities, as well as a guide of good practices on how to utilise these facilities for regional development and tourism. Furthermore a curriculum for a specialized M.Sc. in aquaculture was developed.

Link to socioeconomic development?

There exist various aspects in which AQUAFIMA incorporates socioeconomic development in the project. This includes, creating direct revenues from aquaculture and fishery, create employment possibilities, better promotion and marketing of local products, develop and promote innovative tourism products. Combining fishery, aquaculture and tourism has a high potential to benefit the regional development. Angling and recreational fishery is a growing sector with benefits for the region. However, economic numbers are limited and require further research. Aquaculture business could also create synergies with restaurants by expanding their production more towards popular food fish. This is successfully done by e.g. the German company “Die Müritzfischer” and “Welsmeister” which supply local restaurants and promote their products on various public events like slow food fairs, bio food fairs etc.

The project also investigated the potential of aquaculture for the regional employment market. There is high potential in creating new jobs not only in aquaculture facilities, but especially in the fish processing industry. This could help to sustain the shrinking fishery sector in the BSR.

Project title: Baltic Green Belt

Programme area: INTERREG IV B – The Baltic Sea Region

Partnership: University of Kiel - Institute for Geography as Lead Partner and 12 project partners from Germany, Estonia, Latvia, Lithuania, Poland and Russia.

Duration: 2009 – 2012

Project webpage: <http://www.balticgreenbelt.uni-kiel.de>

Main objectives:

The project is part of the European Green Belt initiative, a movement for nature conservation and sustainable regional development in the former border regions of the iron curtain. The main objectives of the project are to establish a network of NGOs, scientific institutions and authorities that collaborate together in:

- the sustainable development of the Baltic coast.
- the improvement of the ecological conditions and the protection of the environment and natural resources.
- the identification of factors which hamper and factors which enhance the sustainable development along the coast.

Activities:

The project conducted a wide range of country specific and transnational activities. For each of the six regions an analysis of the environmental and ecological conditions as well as the main anthropogenic impacts and uses was carried out. Project partners identified major problems, but also the potential chances for a more sustainable development and outlined how these chances might be used and implemented. Activities included public events, fora and exhibitions, national and transnational conferences, workshops and discussions with authorities and stakeholders but also subject based walks, bike tours and trips were conducted during the project.

Link to socioeconomic development?

In respect to stimulate socio-economic development through environmental protection and an improved and more sustainable management of natural coastal resources, the project is mainly focusing on the tourism sector. In the Latvian case study the project implemented a novel kind of tourism – military heritage and history on an abandoned military site.

The Estonian case study on the island Vormsi started to develop and promote touristic activities like floral excursions, biking, hiking and bird watching. These activities would fully match the nature conservation management plan, but still contribute to the regional development by attracting tourists.

The project also made first steps towards supporting the local marketing of sustainable agricultural and fishery products. This was however not a primary objective and due to the limited time and funds was not further pursued. But some cornerstones were created and the project partner BUND M-V considers the marketing of sustainable local products as one of the main objectives if they would have additional funds.

Project title: HERRING – Joint cross-border actions for the sustainable management of a natural resource.

Programme area: The South Baltic Programme (INTERREG IV A)

Partnership: The Coastal Union Germany as Lead Partner and 3 partners from Poland, Germany and Sweden

Duration: 2012-2015

Project webpage: www.baltic-herring.eu

Main objectives:

The main objective of the project is to develop and promote recommendations for an integrated and improved management of coastal (herring) spawning grounds. This is preceded by an analysis of the ecological conditions of three important coastal spawning grounds in the South Baltic and their main natural and anthropogenic stressors. Furthermore an analysis of the current governance system for coastal areas and its strengths and weaknesses was conducted. Based on these two sub-objectives, the project developed recommendations for regional and transnational stakeholders and institutions.

Activities:

The project carried out an analysis of ecological characteristics, mapped human uses and conducted SWOT investigations for 3 case studies. In order to analyse the governance framework expert interviews with relevant stakeholders were carried out. Numerous round tables, workshops, conferences and a symposium were organized to discuss and disseminate results. Recommendations were also provided in form of policy briefs. The final Report was published as reader friendly book.

Link to socioeconomic development?

It was not a direct objective of project HERRING to create benefits for the socioeconomic development of the region. A major deficit in the current deficient management of spawning grounds is the lacking awareness. Without sufficient awareness of coastal spawning grounds there is no sustainable management. The project partners concluded that the promotion and marketing of local herring products could not only generate socioeconomic development but could also substantially contribute to an enhanced awareness and therefore an improved management.

Therefore a next step could be to develop the synergies between raising awareness of herring and its coastal spawning grounds with the branding and product marketing of locally caught herring. Associated project partners like the fishery co-operative “Peenemündung Freest” are currently working on an MSC for Baltic herring. However, more beneficial could be the direct marketing as sustainable, regional products “from our doorstep”. Benefits for tourism could also be created through promoting herring angling as a unique recreational activity during the time from March to May - a time with rather low tourist numbers.

This could however not yet be implemented in the project, due to limited time and funding.

Project title: Parks and Benefits

Programme area: INTERREG IV B – The Baltic Sea Region

Partnership: The Ministry for Agriculture, Environment and Consumer Protection Mecklenburg-Vorpommern as Lead Partner and 17 partners from Germany, Denmark, Estonia, Latvia, Lithuania and Norway.

Duration: 2009 – 2012

Project webpage: <http://www.parksandbenefits.net>

Main objectives:

The projects main objective is to establish a network of nature parks in six countries which are certified by the European Charter for Sustainable Tourism in Protected Areas. This incorporates an analysis of ecological, economic and social potentials for sustainable tourism and involves close cooperation with all relevant stakeholders in the region of the park. This aims at strengthening sustainable nature tourism in order to generate socio-economic benefits for the development of the region.

Activities:

Project partners carried out a comprehensive analysis of strengths and opportunities, but also of the threats and weaknesses (SWOT) for each park in regard to sustainable tourism. All parks conducted the still ongoing process to achieve the EU Charter goals. This involved close cooperation with all relevant stakeholders and the public.

Link to socioeconomic development?

One of the main goals of the project is to generate socio-economic development by strengthening and implementing measures for sustainable nature tourism. The identification and management of natural resources and cultural heritage allows a better promotion of the region and hence increased revenues. The process to become an official European Charta park incorporates close participation of local businesses, but also for example environmental friendly infrastructure projects which have benefits for the region. The project also aims at marketing local goods, developing environmental friendly infrastructure and the creation of new jobs in the nature tourism sector.

Project title: The Baltic 21 Eco Region Project

Programme area: The Baltic Sea Region (INTERREG IV B)

Partnership: The Federal Ministry for the Environment, Nature Conservation, Building and Nuclear Safety (BMUB) and 23 project partners from Germany, Sweden, Poland, Norway, Finland, Denmark, Estonia, Latvia and Russia.

Duration: 2009-2011

Project webpage: <http://www.baltic-ecoregion.eu/>

Main objectives:

The overall goal of the project of the project is to develop the Baltic Sea region into the world's first EcoRegion, by identifying best practices for sustainable development. The recommendations are oriented at six topics which have been identified as crucial for sustainable development; 1.) Integrated management of natural resources, 2.) Access and mobility, 3.) Renewable energy, 4.) Sustainable food systems, 5.) Sustainability in tourism, 6.) Youth, democracy and culture.

Each of the ten model regions of the project aims at realising a selected set of priority sustainable development measures. These measures are identified, implemented and evaluated in a cyclical management system.

Activities:

The project utilised a huge network of stakeholders and scientists in order to collect and analyse a wide range of existing good practices for sustainable development. In order to allow others to apply these practices, the project stored them in a public database. The ten model regions introduced an integrated sustainability management cycle consisting of to strengthen their sustainable development.

Link to socioeconomic development?

The project rather focused on the socioeconomic than environmental aspects of sustainability. In respect to the scope of the study on linking natural resource management and socioeconomic development, the most significant topics were *integrated management of natural resources* and *sustainability in tourism*. However in regard to the first topic, the project stays very general and do only provide very general links to socioeconomic development. The projects promotes the implementation and application of a ecosystem service approach in order to make values of natural resources more visible to the society and economy.

Concerning sustainability in tourism there is no direct connection to natural resource management or nature conservation other than the general conclusion, that negative effects on the environment should be avoided or reduced.

Project title: Action for the Reinforcement of the Transitional Waters' Environmental Integrity (ARTWEI)

Programme area: The South Baltic Programme (INTERREG IV A)

Partnership: Coastal Research and Planning Institute, Klaipeda as Lead Partner and 6 project partners from Germany, Lithuania, Sweden, Poland, and Russia.

Duration of the project: 2010 – 2013

Project webpage: <http://www.balticlagoons.net/artwei/>

Main objectives:

The European Water Policy and the EU Water Framework Directive set the guidelines for managing river basins, while marine areas are managed within the EU Maritime Spatial Planning framework. ARTWEI aimed to strike an operational balance between EU requirements for Maritime Spatial Planning framework, Water Framework Directive and Integrated Coastal Zone Management, which do often overlap or contradict each other.

Activities:

This aim was achieved by establishing the South Baltic Transitional Waters' partnership network of the key institutions based on the long-term cooperation agreement and supported by the regional activity network of EUCC – The Coastal and Marine Union. The cross-border cooperation of local and regional interest groups, citizens and politicians appeared to be crucial.

ARTWEI project based on existing experiences from the EU and international Baltic Sea cooperation networks within development of local and regional methods for effective management of TWs.

Various results of the ARTWEI project were achieved: Stakeholder Cooperation Agreements were signed in all the case study areas; "Transboundary Management of Transitional Waters: Code of Conduct and Good Practice examples" was published; several technical reports (e.g. on fisheries and NIS issues) were prepared and uploaded to the project web page; there were four photo-competition organized in all the case study areas; comprehensive cross-border SEA and ICZM action plan has been presented to stakeholders; the Vistula Lagoon WebGIS was created: <http://artwei.mir.gdynia.pl/Mapa/>

Link to socioeconomic development?

Not directly but certainly the sustainable management of the existing resources was always in focus. Strengthening of cooperation among various stakeholders will contribute to more effective development of coastal zone management and regional spatial plans considering priorities of different groups of interests. Economic activities which have potential to increase its importance are different in all the case studies, e.g. marine transportation is extremely important in Oresund but definitely underutilized in the Vistula Lagoon. On the other hand tourism has a potential to grow in all the case studies.

Project title: Ecosystem approach to marine spatial planning – Polish marine areas and the Natura 2000 network (Habitat Mapping)

Programme area: Norway Grants

Partnership: Institute of Oceanology PAS as Lead Partner and 6 project partners from Poland and Norway.

Duration of the project: 2007-2009

Project webpage: <http://www.pom-habitaty.eu/en/index.php>

Main objectives:

Habitat Mapping project main goal was to develop methodology and to create a complete set of habitat maps for the Polish marine areas.

Activities:

During the 24-month project, methodology for inventorying ecosystem resources was developed for Polish marine areas (PMA) based on European standards (habitat classification according to the modified EUNIS system). The techniques applied included up-to-date technology for identifying marine habitats (satellite imagery, hydroacoustic methods, remote-operated vehicle with video), which permitted creating the first complete set of maps of PMA habitats. Such maps are extremely helpful for the maintenance of biodiversity and spatial planning within the context of the NATURA network.

Results of the project included scientific publications in peer-reviewed journals, a set of ecosystem valorisation maps, and the Atlas of Polish Marine Area Habitats.

Link to socioeconomic development?

There was no directly link to socio-economic development but summarising the existing knowledge on ecosystem resources is an obvious and very important contribution to further analyses on ecosystem goods and services including valuation of the resources. The project was mostly focused on conservation issues including the maintenance of biodiversity but collected data on spatial distribution of ecosystem resources is crucial for setting priorities during preparation of the Marine Spatial Plan(s).

Project title: Sustainable Uses of Baltic Marine Resources (**SUBMARINER**)

Programme area: Baltic Sea Region Project (INTERREG IV B)

Partnership: Maritime Institute in Gdańsk, Poland as Lead Partner and 17 project partners from Estonia, Germany, Latvia, Lithuania, Poland, and Sweden.

Duration of the project: 2010-2013

Project webpage: www.submariner-project.eu

Main objectives:

The impacts of marine uses (e.g., cultivation and/or harvesting of macroalgae, microalgae, mussel, reed; fish aquaculture; wave energy) on the environment, their economic feasibility and regional applicability are still poorly understood. This makes it difficult for decision-makers to judge which uses are most desirable and how they should be promoted, while discouraging potentially damaging ones. The goal was to improve the knowledge.

Activities:

A comprehensive inventory of current and new uses taking into account opportunities and resources across the BSR; environmental and socioeconomic impacts, state and availability of technologies, market chances as well as the current regulatory framework; testing new uses in real conditions, pilot cultivations as well as development of regional roadmaps; recommending necessary new actions to further promote beneficial uses of Baltic marine resources; bringing relevant players together through cooperation events, roundtables and seminars, and developing a Network structure.

Link to socioeconomic development?

This project provides direct and strong link to socioeconomic development by considering at the same time impact of marine uses (cultivation and harvesting) on the environment and it's economic feasibility. Development of innovative and sustainable new uses of marine resources has an ultimate long term goal to contribute to economic development of the coastal regions around the Baltic. The latter one is not possible before we ensure supportive conditions for innovations and before we know what is actually possible and what is not. SUBMARINER contributes to fulfill both preconditions. On sub-regional level new marine uses have been tested in pilot cases and/or sub-regional strategies for specific uses have been formulated. These regional activities included micro- and macroalgae cultivation pilots in Finland and Lithuania, a roadmap for the development of Polish coastal areas, a Masterplan Blue Biotechnology for Schleswig Holstein, zebra mussel cultivation at the Curonian Lagoon as well as experiments on using Baltic blue mussels for feed and harvesting biomass from an offshore wind park in Southern Denmark.

Project title: System of environmental and spatial information as the background for sustainable management of the Vistula Lagoon ecosystem (**VISLA**)

Programme area: Norway Grants

Partnership: University of Warmia and Mazury in Olsztyn, Poland as Lead Partner and 2 project partners from Poland and Norway

Duration of the project: 2008–2011

Project webpage:

http://visla.uwm.edu.pl/index.php?option=com_content&view=article&id=95&Itemid=99&lang=en

Main objectives:

The principal aim of the project is to increase the quality of controlling, diagnosing and forecasting as regards the state of the environment and its changes in the shallow brackish waters of the Vistula Lagoon.

Activities:

Project aims were achieved through: data collection from existing data bases, measurements and *in situ* sampling, biogeochemical and biological samples analysis, satellite image programming, acquisition and processing, testing and calibrating the hydrodynamic and water quality model.

The above activities allowed to obtain a number of results: 1) Model GEMSS to predict changes of Vistula Lagoon environment influenced by anthropogenic and climate change factors (calibrated based on data from the Polish part only); 2) Data base of environmental data and collection of satellite images reflecting water quality parameters for actual monitoring and scientific use; 3) Scientific publications including monograph describing Vistula Lagoon environment and project activities; 4) Information and dissemination of results to local society: schools, local authorities and communities, fisheries, ecological organizations, investors, etc.

Link to socioeconomic development?

There was no direct link to socio-economics, but using new techniques of water quality monitoring e.g. satellite images as well as modelling tools should contribute to more efficient methods of mitigation measures development when implementing the EU Water Framework Directive goals. In consequence, it may potentially influence directions of future economic development in the lagoon and its drainage area. One of the most important areas of economic development is tourism. The possibility to evaluate consequences of different tourism development scenarios (e.g., building the channel through the Vistula Split) is of high importance and helps to find appropriate compromise between socioeconomic development and environment protection.

Project title: Balance project

Programme area: Baltic Sea region programme

Partnership: Danish Forest and Nature Agency (Lead Partner) and 5 other organizations from Denmark, 1 from Estonia, 4 from Finland, 1 from Germany, 1 from Latvia, 1 from Lithuania and 6 from Sweden

Duration of the project: 2005 - 2007

Project webpage: www.balance-eu.org

Main objectives:

- Identify and collate relevant and available marine data in the Baltic Sea, Kattegat and Skagerrak area.
- Define Baltic Sea marine landscapes and develop habitat maps, the latter in 4 pilot areas.
- Assess the existing Baltic Sea Marine Protected Areas network and develop a “blue corridor” concept.
- Develop Baltic marine zoning plans in 2 pilot areas.
- Communicate with stakeholders and disseminate the results to partners, stakeholders and the public.

Activities:

The project activities were grouped into four main workpackages addressing:

- **Data Management** - which developed standards and protocols for intercalibration of sectoral data (biology, geology, oceanography). A metadatabase portal was also set up by the Geological Survey of Sweden (SGU) in order to enable sharing of data between BSR countries and different sectors to facilitate better use of resources.
- **Marine landscapes and Habitats** – which worked with Identification of Baltic marine landscapes and habitat distribution for use in marine spatial planning and nature conservation
- **Blue corridors and Natura 2000** – working with development of the "blue corridor" concept and evaluation of the representativity of the Natura 2000 network.
- **Marine Spatial Planning** – developing a management template with guidelines on a) planning and managing of marine areas, b) assessment of management efficiency, and c) stakeholder involvement and participation in spatial planning of marine areas.

Link to socioeconomic development?

This project doesn't address socioeconomic development directly but still fall into the Blue Growth strategy as it is developing Marine Spatial Planning which is included in the strategy as one of three essential components needed to provide knowledge, legal certainty and security in the blue growth economy. One of the purposes of MSP is to ensure secure investments by allocating specific areas for specific purposes.

Project title: BUCEFALOS

Programme area: Life programme

Partnership: Skåne Regional Council (Lead Partner), Municipality of Trelleborg and Municipality of Malmö

Duration of the project: 2012 - 2015

Project webpage: <http://malmo.se/Bo-bygga--miljo/Miljoarbetet-i-Malmo-stad/Sveriges-klimatsmartaste-stad/BUCEFALOS.html>

Main objectives: The BUCEFALOS project's overall objective is to demonstrate a holistic approach to regional coordination for sustainable resource management of aquatic biomass. The project will demonstrate innovative methodologies and technological applications for cultivating and harvesting mussels. It will also restore wetlands and establish algae cultivation sites with a view to cleaning freshwater and providing efficient yields of biomass for biogas.

Activities:

Within the project the city of Malmö, through SEA-U marine science centre, has established two large scale mussel farms with the purpose to clean sea water and produce biogas. The municipality of Trelleborg will demonstrate a full scale biogas production based on algae and seaweed that is collected from the beaches and wetlands in the nearby area. Moreover the project will also establish a pilot facility for cleaning of sewage water by using micro algae. The micro algae will also be used as material for the biogas production.

Link to socioeconomic development?

There is a clear link between management of natural resources and economic development in this project. It falls into the category of aquaculture in the EU Blue Growth strategy by the cultivation of mussels and algae. As a second step production of biogas was tested and proved technically feasible. However, project results show that the economic value of producing biogas in this way is not viable as production costs are quite high and end product cannot compete economically with other fossil fuels like oil.

Project title: Wetlands, Algae and Biogas -A southern Baltic Sea Eutrophication Counteract Project

Programme area: South Baltic Sea

Partnership: Municipality of Trelleborg (Lead Partner), 3 other Swedish partners as 5 Polish partners.

Duration of the project: 2010 –2012

Project webpage: <http://www.trelleborg.se/sv/bygga-bo-miljo/klimatforandringar-och-miljo/miljoprojekt/wetlands-algae-biogas/>

Main objectives: The overall idea of the project is to establish a holistic approach for reducing eutrophication by combining the reconstruction of wetland, distracting algae from shores as well as using them for biogas production and as fertilizers in regional production cycles

Activities: The project activities include two regional pilot actions in Sweden (Trelleborg municipality) and Poland (Municipality of Sopot / Pomorskie region). Whereas the pilot action in Trelleborg can build on extensive pre-work and will result in the establishment of a full regional cycle with all its components at the end of the project, the activities in Poland will start from scratch. The project is divided into three major actions; Wetlands, Algae and Biogas. In realizing the three steps the WAB project recovers the nutrients lost from the agricultural land whilst creating a mechanism to assist in the counteraction of eutrophication. At the same time renewable energy is being produced and habitats for biodiversity are created.

Link to socioeconomic development?

This project has a clear link to socio economic development and falls into the category of aquaculture, pointed out by the EU Blue Growth Strategy as sector with high potential for jobs and growth. Aquaculture, in this case cultivation of reed and collection of seaweed, promotes the production of biogas and fertilizers.

Project title: WEBAP – Wave Energized Baltic Aeration Pump

Programme area: Life programme

Partnership: Swedish Environmental Research Institute (Lead Partner) and Municipality of Simrishamn.

Duration of the project: 2010 – 2013

Project webpage: <http://www.webap.ivl.se>

Main objectives:

The main objective of the WEBAP project was to demonstrate a cost-effective wave-powered device, the 'Wave Energized Baltic Aeration Pump' (WEBAP), which mitigates the problem of oxygen depletion (hypoxia) in coastal zones and open seas. The main aims of the project were to demonstrate the technical and ecological feasibilities of the aeration pump, to prepare for a full-scale implementation of the aeration pump, to demonstrate its transferability as a mitigation measure to other hypoxic marine environments, and to disseminate project results in Europe and other regions.

Activities:

The project developed a pilot wave-powered pumping device, along with a smaller electricity-powered unit for reference and verifications. The device was used to pump oxygen-rich surface water down into oxygen-poor, hypoxic, bottom layers in coastal areas near Stockholm and Simrishamn in Sweden. Further, the project elaborated methods enabling the monitoring and evaluation of these underwater interventions. Over a period of more than 12 months, the pumping devices worked very efficiently in technical terms and, with low energy consumption, moved oxygen-rich surface water down to oxygen-poor deeper sea levels. The pumping activity was accompanied by active sampling of marine and biological data around the test areas.

Link to socioeconomic development?

Under the EU Blue Growth Strategy this type of project falls into the category of Ocean Energy as a sector with high potential for sustainable jobs and growth. The main objective of the project is more related to environmental protection than to economic development but the potential for economic development in the field of wave energy is still evident in the project.

It is concluded in the outcomes of the project that WEBAP can help to improve conditions for the biota at the sea bottom which might have a positive impact on fish stock and subsequently in fisheries.

Summary

Coming back to the five sectors pointed out by the EU Blue Growth Strategy as sectors with high potential for sustainable jobs and growth we see that in the case of German lead projects there is a strong focus on tourism related projects and only a limited amount specifically deal with a certain natural coastal resource. Projects which aim at promoting tourism seldom include natural resource management in their strategies, apart from minimizing adverse impacts. However, there are a few projects which successfully link natural resource management and tourism, e.g. Baltic Green Belt, Parks and Benefits and also to some extent AQUAFIMA. An identified good practice is to design tourism strongly in coherence with nature conservation strategies. But it is also important to directly link tourism to certain natural resources.

Several projects fall under the category Aquaculture. Although all projects didn't have economic development as the main objective of the aquaculture farming, the possibility of generating economic value of the cultivation was investigated.

Several projects also fall into the category of Marine Spatial planning which by the Blue Growth strategy is seen as a component that can provide knowledge, legal certainty and security for the development of sustainable jobs and growth. MSP is a broad concept that can serve several different purposes, economic security being one of them.