

# MARITIME SPATIAL PLAN FOR TERRITORIAL WATERS AND ECONOMIC EXCLUSIVE ZONE OF LATVIA

## STRATEGIC SCENARIOS FOR THE USE OF THE SEA

**JUNE 2015**

### FINANCED BY:

European Economic Area  
Financial Mechanism



### CONTRACTOR

Ministry of the Environmental Protection and  
Regional Development



Vides aizsardzības un  
reģionālās attīstības  
ministrija

### SERVICE PROVIDER

**Baltic Environmental Forum - Latvia**  
Antonijas 3-8, LV-1010 Rīga  
Tel.: 67357 555 E-pasts: [bef@bef.lv](mailto:bef@bef.lv)



**Latvian Institute of Aquatic Ecology**



**Latvian maritime Administration**



**Coastal Research and Planning  
Institute, Lithuania**



**Environmental, Planning  
and Consulting company,  
Estonia**



**JŪRAS  
TĒLPISKAIS  
PLĀNOJUMS**



## STRATEGIC SCENARIOS FOR THE USE OF THE SEA

*The Use of the Sea* scenarios are built in order to identify possible maritime spatial development options (alternatives), to perform their strategic assessment and as a result to arrive at an optimal allowed sea use solution that is satisfactory to stakeholders and society. Scenario development method is applied in strategic planning and decision making process when the possible spatial use is dependant from various, often controversial interests and sectorial priorities (Brown *et.al*, 2001)<sup>1</sup> as it is the case in the Baltic Sea area under the jurisdiction of the Republic of Latvia. Scenarios are neither predictions nor forecasts, but rather alternative descriptions (stories, projections, figures/pictures) on how the future might unfold by evaluating various factors determining the development (Alcamo, 2000)<sup>2</sup>.

### *Scenario-building Approach for the Use of Sea*

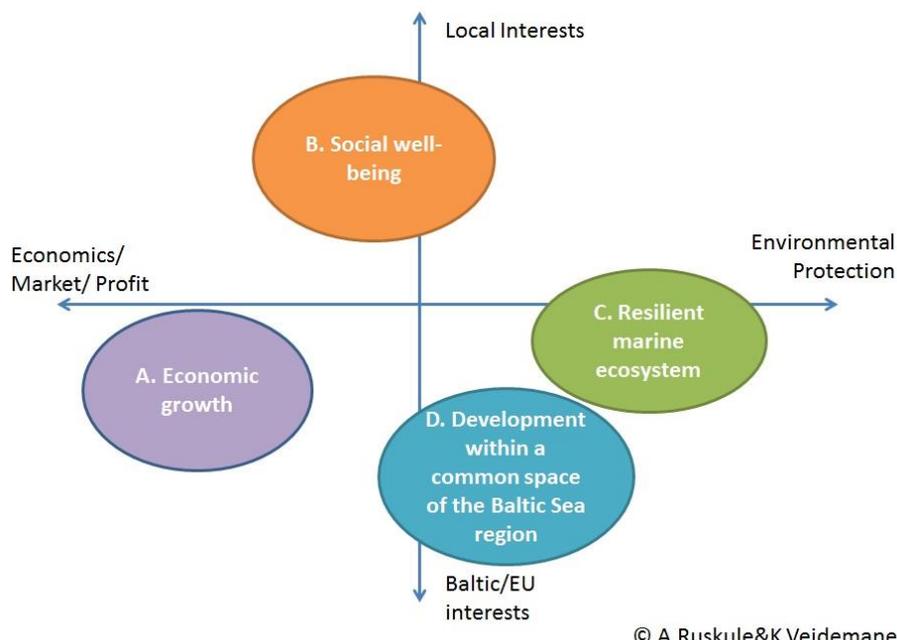
Scenario-building is based on identification of possible development directions (axes) according to the determining factors (driving forces) that affects the marine resources and spatial use, and the situation in maritime sectors. Different **policy** and **societal** priorities are confronting choices for the development. On the vertical axis the development is confronted by accounting for **local** interests and the **Baltic and/or EU** interests. While the **economic** (free trade market, profit, competition) and **environmental** (state of environment, climate change) interests are confronted on the horizontal axis. Depending on evolution of the determining factors in connection with the policy and societal choices (priorities) four distinct by priorities (radical) development scenarios are identified (see Figure 1):

Scenario A: Economic growth

Scenario B: Social well-being

Scenario C: Resilient marine ecosystem

Scenario D: Development within common space of Baltic Sea region



*Figure 1. Possible strategic scenarios in the MSP development in Latvia*

<sup>1</sup> Brown et al. 2001. Trade-off analysis for marine protected area management. *Ecological Economics*, 37:417-434.

<sup>2</sup> Alcamo. 2001. Scenarios as tools for international environmental assessments, EEA Environmental issue Report Nr.24.

Scenarios provide a picture of distinct development alternatives if one or several development conditions are unfold. In order to ensure the credibility and feasibility of the strategic scenarios of the use of the sea their description (narrative story line and characterising parameters) and spatial solutions (schemes) are constructed by implementing the following scenario-building steps:

- 1) Analysis of determining factors (driving forces) for development:
  - Socio-economic driving forces for the spatial changes in the use of the sea and related development trends;
  - Sectorial policy goals and development potentials;
- 2) Consultations with representatives from maritime sectors and different stakeholder groups:
  - Individual meetings with representatives from maritime sectors, February-June, 2015;
  - Regional meetings on MSP development hold in Mērsrags, Pāvilosta and Salacgrīva in March 2015;
  - Conference devoted to the European Maritime day, 21 May 2015, in Riga;
- 3) Assessment on criteria causing constraints for the maritime spatial use:
  - Compliance with the national regulation towards sea use (refer to the Explanatory notes chapter 2.2), incl., economic activity restrictions in marine protected areas and in port areas, restrictions as determined by regulations in other sectors;
  - Limiting factors with regard to development of the economic activity:
    - Natural conditions (navigable depth, suitable depth and bottom for installation of a wind turbine, suitable sites for fishing with bottom trawl, etc);
    - Availability of resources (fish resources, wind/wave energy, hydrocarbons, etc);
    - Carrying capacity of ecosystem/ resilience of ecosystem to pressures and changes in environment (preservation of particularly sensitive or ecologically valuable areas);
    - Technological capacities (e.g., location and expected capacities of new energy generators and related connections to power grids on main-land);
  - Spatial disconnection of incompatible economic activities:
    - Fixed constructions (wind parks, oil production platforms, *etc.*) are not allowed on intensively used shipping routes and military training polygons and in places where they hampers National Armed Forces (NAF) coastal surveillance and defence systems.

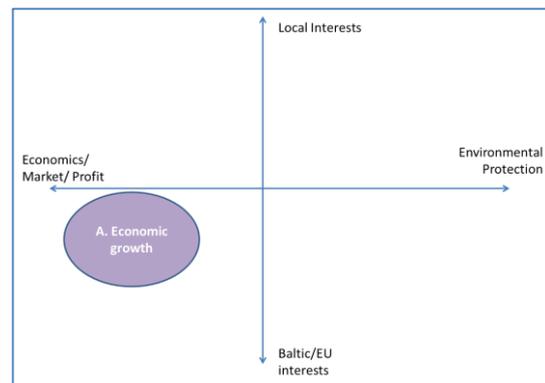
Key socio-economic and environmental indicators are selected for characterization and assessing implications of the scenarios. Based on assessment of the development trends in sectorial sea uses and natural processes, as well as taking into account expert opinion, assumption on a change in trends for selected indicators were outlined for each scenario (see Table 1 and Table 2).

Further elaboration and evaluation of scenarios will be carried out within the regional meetings to be organized in July 2015. Afterwards the scenarios will be evaluated and streamlined to develop an optimal allowed sea use solution acceptable for various stakeholders and society.

## Description of the use of sea strategic scenarios

### Scenario A: Economic growth

Scenario A is directed towards economic breakthrough driven by competitiveness and profit generation of economic sectors. Port development, freight and passenger transport, cruise and coastal tourism, resorts development, as well as maritime technologies and innovations are promoted priority maritime economic areas. Potentially perspective energy sources (hydrocarbons, wind and wave energy) are supported with an aim to secure the energy independency of the country as well as to export



the produced electricity to other countries in the region and Europe. Development of the fishery is stable within the limits of available resources as its growth is limited by the availability of resources and quotas set internationally. The development policy is mainly lead by the interests of powerful national and international companies.

The scenario complies with the National Development Plan of Latvia (NDP) 2020 priority “Growth of the National economy” and its strategic objectives – “Highly productive manufacturing and internationally competitive services with export potential”, “Outstanding business environment”, “Advanced research and innovation and higher education”, “Energy efficiency and energy production”.

#### Policy driving forces:

- National policy is directed to support only competitive and high added value businesses as well as attraction of investments for friendly business environment and infrastructure projects;
- EU policies on “Blue growth” and “European maritime transport space without barriers” are implemented;
- Support programmes for the clusters with export potential are promoted.

#### Economic driving forces:

- Activity of business is mainly concentrated in national and regional development centres by creating maritime clusters – strategically focused networking structures which include largest export oriented enterprises, raw material suppliers, research and educational establishments, providers of smart services;
- Market demand is growing for raw materials, as well as for consumer goods thus promoting freight transport, incl., maritime transport;
- Economic growth is heading for intensification of all activities – mass tourism, large factories, investments are allocated to the sectors generating faster and higher profits;
- Electricity consumption and demand for energy resources is growing due to economic development and increased incomes, and as a result offshore wind energy and hydrocarbon extraction from the sea is encouraged;
- The strategy of the Latvian resort association towards export markets is strengthened and successfully implemented, thus generating of higher added value for the sector. Increasing benefits are obtained from cruise passengers, and that is achieved by higher competitiveness and investments for improvements in cruise piers, higher resources for marketing. Total number of ferry passengers increases at three large ports.

- There is an increasing competition among tourist destinations. Creation of similar products and offers in other region or country frightens with possible draining of target groups to another destination. Although, competition creates the positive effect on growth of the sector.

#### **Technological driving forces:**

- Maritime clusters are promoting development of innovations and technologies because these are securing higher cost-effectiveness and productivity; this is also leading to intensification of economic activities;
- In Europe, the offshore wind energy technologies are developing fast making them cheaper and more competitive when compared to other energy production options. As the result, wind energy technologies are getting more accessible in Latvia as well. Research and technologies are also developing for use of wave energy that provides new opportunities for electricity production;
- Provided land based freight transport infrastructure and connections to ports ensures development,
- Installed capacities of terrestrial power grid networks and connections assigned for maritime power cables also supports development potential;
- Information and communication technologies clearly have advanced in mobile technologies. Competitiveness of tourism is increased by availability of the selection of the site specific services, direct accessibility to accurate and targeted marketing information, technological upgrades in SPA treatment, healing and resort treatment research fields;
- Innovations in the field of leisure activities are creating new technological solutions for the sea, water and wind sports and recreation. Security is increasing because these services are based in larger centres, more accurate weather forecasting – risk prevention, as well as response opportunities for the rescue services.

#### **Social and demographic driving forces:**

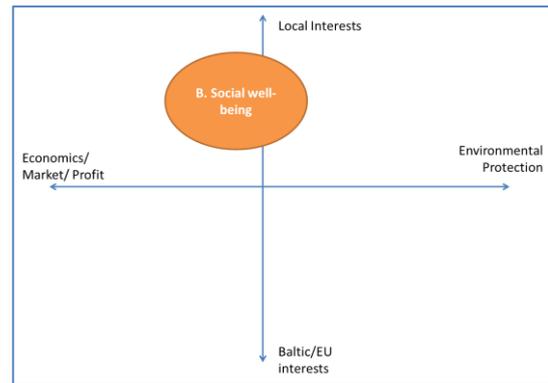
- Decreased or even averted emigration abroad, population is centralised in large cities (incl., cities with large ports – Riga, Liepaja, Ventspils) thus securing sufficient and qualified labour;
- A significant difference in income levels between groups of inhabitants (wealthy and poor inhabitants) creates a social tension in society;
- A share of foreign seniors increases in the tourism, tourism developed in large centres increases pronounced seasonal differences, thus a demand for the seasonal workers increases.

#### **Environmental and nature conditions:**

- Availability of natural resources is used up to their limits;
- Current environmental standards are maintained for development in economic sectors and these are even weakened in certain fields and therefore worsens the state of environment;
- Initial significant climate change effects are noticeable at the coastal zone of Latvia. Coastal erosion processes accelerates and effects of storms are felt more often;
- Depletion of maritime natural resources due to growth of the tourism can result in less attractive destinations in a long-term run. Pollution load of waste-waters from large centres is increasing, marine water quality problems are becoming an issue – for responsible growth the pressure is increasing to a “blue flag” standards;
- Coastal tourism services targeting the wealthy people have been advanced;
- A spread risk of invasive species has been animated by more active global navigation networks and growth in freight transportation.

## Scenario B: Social well-being

Scenario B is directed towards social cohesion policy – balanced development of all regions and diversified growth of economic sectors that secure jobs both, in current fields and offers new ones – with higher added value and wages. Promoted priority maritime activities are those securing high employment rate and income for local economy – coastal tourism and recreation (incl., yacht clubs and tourism development), fishery, ports, passenger transport and short sea shipping, as well as potentially – aquaculture development, increases importance of qualified distant work secured by qualitative road infrastructure along the whole seacoast, increasing mobility, provided fast global network operation. Interest of local community are determining factor that are secured by support to local and regional infrastructure, services and the entrepreneurship, desire of people to live at the seacoast, maintaining of traditions.



The scenario complies with the Sustainable Development Strategy of Latvia (SDS) 2030 priority “Spatial development perspective” and the defined direction towards Coast of the Baltic Sea – to develop the favourable environment for the entrepreneurship that would ensure economic activity and employment possibilities along the entire seacoast; and with the National Development Plan of Latvia (NDP) 2020 priority “Human Securitability” (a form of resilience) and its strategic objectives “Decent work” and “Development of competencies” as well as to the priority “Growth for Regions” and its strategic objectives “Promotion of economic activity in the regions: unleashing the potential of territories” and “Availability of services for creating more equal work opportunities and living conditions”.

### Policy driving forces:

- National policy is directed to support levelled development of all regions, including the seacoast development by supporting small and medium entrepreneurship (fishery, tourism), development of local infrastructure and securing services, maintaining of traditions and promoting additional commercial activities that are related to the maritime and fisherman life-style services;
- Increasing necessity to invest in territories of low population density creates additional constraints towards the state tax policy;
- Reducing of the speed of economic growth (*deGrowth*) is made topical as an alternative approach in favour of higher quality of life and voluntary activities, shorter working hours, opportunity to devote more time to themselves, relatives and friends thus strengthening the social capital.

### Economic driving forces:

- Due to levelled distribution of state support, the entrepreneurship, although slower, is developing through entire seacoast that secures jobs, economic activity of inhabitants, sufficient incomes and well-being. Both, in large coastal cities and in local centres are developed various networks promoting cooperation, education and capacity building of small and medium enterprises;
- Smaller ports are provided larger opportunities to development because various financial mechanisms are available to contribute to that;

- Due to equated level of well-being for inhabitants, the demand is raising for consumer goods (incl., high quality fishery products), as well as for entertainment, recreation and tourism services. Consumption of electricity increases too, however, this the supply is not secured by maritime renewable energy production because other priorities are nominated for the sea use (fishery, international and local shipping, yacht tourism, recreation at the sea);
- Support to fishery ensures stable fish and development of the fish processing industry directed towards both, local consumption and export;
- Rural tourism gets higher attention due to diversified handicraft products related to the sea and fisherman life-style; certain type of services are getting more expensive because these have to be secured in good quality for smaller size market. Offers at the niche-market are stronger; design of services and individualized market solutions plays important role than before.

#### **Technological driving forces:**

- Support to education in regions from small rural schools to the regional universities serves as a basis for development of competencies and skills of young generation thus promoting progression of innovative entrepreneurship also at the seacoast;
- Investments are made in the technology development for small and medium size enterprises through innovative and to local and regional needs tailored solutions;
- Digital marketing and distant payment possibilities in remote places from the regional centres receives increasing topicality. Immediate implementation of technological innovations is hindered because small and medium sized enterprises are short for the resources to co-finance research and development of prototypes on innovations.

#### **Social and demographic driving forces:**

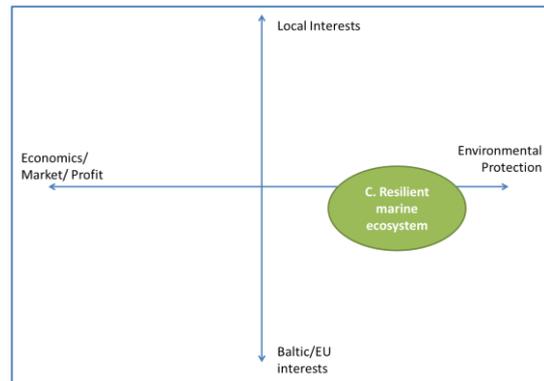
- Due to large support programmes, the demographic indicators are improved in the country – increased life expectancy of inhabitants, decreased mortality and increased birth-rate;
- Number of inhabitants at the seacoast is increasing because of arranged infrastructure, secured services and jobs, as well as attractive entrepreneurship and living environment;
- Settlement structure and population density are comparatively equable along the whole seacoast in Latvia;
- Decreased risks of segregation as contrary to the scenario of economic development (A), a sharp stratification of inhabitants at the seacoast according to their income levels and ability to payments is not observed;
- Old crafts are practiced, harmony links over the generations strengthened, and more powerful local communities are developed.

#### **Environmental and nature conditions:**

- Natural resources are utilized within their sustainability limits and the respective regulation is determined (e.g., conservation of fish resources)
- Current environmental standards are maintained for development in economic sectors, however, in particular fields related to coastal development, e.g., tourism and recreation, there is a new more stringent regulation on environmental quality requirements;
- Initial minor climate change effects are noticeable at Latvian coastal zone creating tension about properties closest to the sea, erosion and threats;
- Increased natural disasters and technology development creates a small niche offer for sea storms watching, etc.

## Scenario C: Resilient marine ecosystem

Scenario C is directed towards maintenance of clean environment and resilient marine ecosystem as a basis for human well-being and sustainable development. While developing maritime activities, the unique and fragile ecosystem of the Baltic Sea is respected, as well as global aims to decrease the GHG emissions and increase the share of renewable energy sources in the total consumption. Promoted priority maritime activities are those securing safe and clean maritime transport, sustainable fisheries and tourism, wind and potentially also wave energy production that is adjusted to the carrying capacity of marine ecosystem. In order to secure the integrity, viability and biological diversity of marine ecosystem new marine protected territories are created.



The scenario complies with the Sustainable Development Strategy of Latvia (SDS) 2030 priority “Nature as future capital” and the goal: Latvia to become the EU leader in the preservation, increase and sustainable use of natural capital; and with the National Development Plan of Latvia (NDP) 2020 priority “Growth for Regions” and its strategic objectives “Sustainable management of natural and cultural capital”, as well as to the Environmental Policy Strategy 2014-2022 priority “Water resources and the Baltic Sea” and its aim to secure good ecological status and sustainable use of waters.

### Policy driving forces:

- Stringent environmental requirements and the program of measures binding to all economic sectors are determined for achieving of Good Environmental Status. Aims are set for designation of new marine protected areas beyond the territorial waters to ensure the integrity of marine ecosystem and compliance with the international objectives for preservation of biodiversity;
- Utilization of renewable energy sources (RES), incl., sea based, is set as one of the national key priorities. Shipping is organized to release free space for production of RES, reduce the risk of collisions and pressure on the marine ecosystem;
- Tourism sectorial policy highlights the concept of “Slow relaxation” mode that is directed towards development of the eco-tourism in its broadest meaning.

### Economic driving forces:

- Entrepreneurship is mainly concentrated in the national and regional development centres by establishing of maritime clusters between enterprises in the Baltic region that pays high attention to the smart technologies;
- Due to stringent environmental standards particular ports drops their competitiveness while larger ports therefore may gain the freight turnover. Implementation of measures for environmental protection is related to expenditures that are more efficient in large ports.
- Healthy environment, coastal infrastructure to reduce the anthropogenic pressure, “Blue Flag” certificates, as well as dedicated beaches and coastal nature heritage to various target groups ensure quality options for recreation and attracts the target group respecting nature, non-monetary values – both tourists from abroad and local travellers;
- Good Environmental Status ensures sufficient fish resources and settled catch within the maximal sustainable yield (MSY) limits;

- Created favourable, long-term prospective and economically validated environment for investments in “green” technologies (particularly, in marine transport and energy sectors).

**Technological driving forces:**

- Research and innovations are directed to the environmentally friendly technologies. Environmental requirements and aims are driving forces for innovation and development;
- In the tourism, develops utilization of eco-innovations, increases significance of the international EiroVelo 13 cycling path that closely unites this transportation mode with the sea adventure tourism. Increases modal share of the public transport in contrary to the wide use of private cars.

**Social and demographic driving forces:**

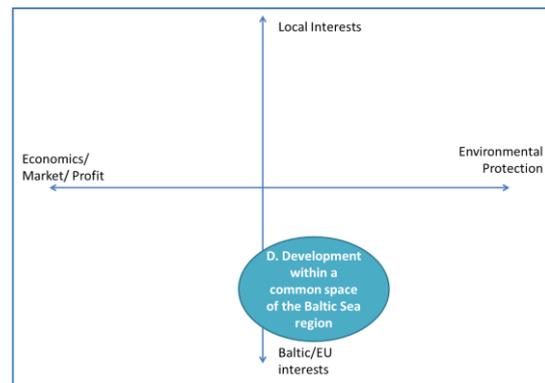
- Demographic indicators of inhabitants are similar to the average indicators from European countries (ageing problem), because there is no observable improvement in demographic situation due to lack of economic growth and pronounced social support programmes.
- Due to achieved Good Environmental Status, Latvia is selected for living by those inhabitants from other countries who values aspects of the quality of life that are related to the nature and environmental quality indicators;
- Increases tension between the share of society with pronounced environmental awareness and the share of those who are not satisfied with increasing expenditures for environmental protection on the cost of economic development.

**Environmental and nature conditions:**

- Environmental quality indicators have improved because the Good Environmental Status has been achieved;
- Nature resources and biodiversity is in good conservation status, increase in biodiversity is occurring in particular habitats and species communities on the top of the overall preservation;
- Due to successful international cooperation (e.g., implementation of the Baltic Sea programme of measures), possible consequences from the climate change on the sea coast are eliminated or reduced.

## Scenario D: Development within common space of Baltic Sea region

In the scenario D, the Baltic Sea is perceived not only as the common ecosystem but also a common space for the development. Cooperation, as well as competition within the Baltic Sea region is becoming as the key driving force for the regional development. Due to this, the international attainability is particularly promoted. Priority activities are those related to the Baltic Sea region maritime activities – coastal tourism, fisheries, shipping transport between the Baltic Sea ports (short sea shipping), shipbuilding and repair, as well as passenger ferryboat services. Due to common energy policy off-shore wind energy production is also developing. Development of maritime activities and sea uses is dominated by the Baltic regional interests.



Due to common energy policy off-shore wind energy production is also developing. Development of maritime activities and sea uses is dominated by the Baltic regional interests.

The scenario complies with the EU Strategy for the Baltic Sea region; EU Sustainable “blue growth” programme for the Baltic Sea region aimed at utilization of potential in the region for development and innovations; as well as the HELCOM Baltic Sea Action Plan that sets the aims and measures to restrict eutrophication, reduce hazardous substance load, improve marine biodiversity and promote environmentally friendly economic sea use.

### Policy driving forces:

- Common Baltic regional policy and cross-border coordination promotes the specialization of ports by accounting for demand and economically viable routes, as well as creation of internationally recognized coastal tourism centres;
- Concerted energy policy in the Baltic region promotes sea-based production of renewable energy sources and increased capacity of the common power grid;
- Based on the common aims, countries in the Baltic region cooperates closely to implement the EU Marine Strategy Framework Directive and HELCOM Baltic Sea Action Plan, and thus the environmental status is improving, as well as navigation security – reduces risks for collisions and possible oil leakages.
- International political agreements increase their importance, amount of legal regulations is growing, protectionism of the Baltic markets is developing;
- A role of governance institutions as various economic cooperation forms (e.g., associations and commissions) within the Baltic Sea region is increasing.

### Economic driving forces:

- Competition and specialization between ports in the Baltic region increases; not all ports are able to fulfil high standards set by the EU and in the Baltic region (HELCOM) for efficiency and environmental protection and therefore operation of these ports can be restricted or ceased;
- Number of passengers and tourists is increasing in largest and internationally significant ports – mainly in Riga, that is fully secured as most important “sea gate” in the passenger transport. Development of peripheral territories is more directed to the “Riga+” principle – through terrestrial land and without diversification of operation of small ports, as it was described in Scenario B.
- Latvian energy system is successfully incorporated in the Baltic and European energy systems. Responding to the increasing demand for energy resources within Baltic region

and in Europe, production of off-shore wind energy is developing fast because local demand is no longer decisive;

- Joint management of the Baltic Sea fish resources is securing viable fish populations and settled catch within the maximal sustainable yield (MSY) limits;
- Common quality standards are imposed for tourism; internationalization increases highlighting of competitive quality services and advantages of competitiveness. Protected nature is an added value to the business relying on the nature based tourism.

**Technological driving forces:**

- Active cooperation within the Baltic region both in research and in entrepreneurship promotes development of innovations and technologies.

**Social and demographic driving forces:**

- Population is concentrated in largest cities;
- Due to good contacts and cooperation in the Baltic region as well as open labour market, there is high international mobility of inhabitants by searching for most suitable living space and job within the whole Baltic region;
- By intensifying internationalization, the role of regional identity and branding is increasing, regional affiliation is emphasised.

**Environmental and nature conditions:**

- Environmental quality indicators are improved and the good environmental status is achieved for majority of the quality indicators;
- Balanced use of the nature resources and improved status of the biodiversity protection;
- Potential climate change consequences to the sea coast are reduced due to international cooperation.

**Table 1: Socio-economic and environmental indicators for the scenarios on the use of the sea**

	Indicators	Tendency	Current value (year, source)	Target value (year, source)	Scenario A: Economic development	Scenario B: Social well-being	Scenario C: Resilient marine ecosystem	Scenario D: Balanced development within common Baltic Sea space
<b>Marine transport and indicators on operation of ports</b>								
1.	Freight turnover in ports of Latvia (mill. t /year)		74 (2014, CSP)	130 (LIAS, 2030)	Pronounced increase	Moderate increase	Small increase	Pronounced increase
2.	Freight turnover in small ports of Latvia (mill. t /year)		1,6 (20014, CSP)	N/A	Small increase	Moderate increase	Small increase	Stable
3.	Number of passengers served in the port of Riga (thous./ year)		738 (2014, CSP)	>1500 (2030, LIAS, NAP)	Pronounced increase	Moderate increase	Stable	Pronounced increase
4.	Number of ferry passengers served in large ports of Latvia (thous./year)		864 (2014, CSP)	N/A	Pronounced increase	Moderate increase	Stable	Pronounced increase
5.	Number of cruise passengers served in large ports of Latvia (thous./year)		62 105 (2014, CSP)	N/A	Pronounced increase	Moderate increase	Stable	Pronounced increase
6.	Number of ships served in large ports of Latvia (per year)		6857 (2013, port statistics)	N/A	Moderate increase	Moderate increase	Stable	Pronounced increase
7.	Number of ships served in small ports of Latvia (per year)		No data available	N/A	Moderate increase	Pronounced increase	Stable	Stable
8.	Number of ship accidents (per year)		4 (2013, HELCOM)	N/A	Small increase	Small increase	Non existent	Non existent
9.	Leakage of oil (kg/year)		730 (2014, VVD)	N/A	Small increase	Small increase	Non existent	Non existent
<b>Indicators in energy sector</b>								
10.	Consumption of electric energy (GWh/year)		7172 (2014, Eurostat)	N/A	Pronounced increase	Moderate increase	Stable	Moderate increase
11.	Electric energy produced (GWh/year)		5058 (2014, Eurostat)	N/A	Pronounced increase	Moderate increase	Moderate increase	Moderate increase
12.	Off-shore produced energy (GWh/year)	Not established	0	N/A	Pronounced increase	Non existent	Moderate increase	Moderate increase
13.	Share of energy produced from RES in a total bruto final energy consumption (%)		35,78 (2012, Eurostat)	40 (2020, NAP)	Stable	Stable	Moderate increase	Moderate increase

	Indicators	Tendency	Current value (year, source)	Target value (year, source)	Scenario A: Economic development	Scenario B: Social well-being	Scenario C: Resilient marine ecosystem	Scenario D: Balanced development within common Baltic Sea space
<b>Indicators on tourism</b>								
14.	Number of foreign tourists, visiting for 4 and more days (mill./ year)		0,4 (NAP, 2008) prognose: 0,5 (2014, NAP,)	>1,5 (2030, LIAS, NAP)	<b>Pronounced increase</b> (mainly in Jurmala and large cities)	<b>Small increase</b> (more equal over whole seacoast)	<b>Moderate increase</b> (increases the segment of nature tourism)	<b>Small increase</b> (smoothened on the Baltic I by increase in total visiting duration, but important positioning of places and mutual competition)
15.	Number of beds (excluding Riga), in 20 km coastal zone		~10 000 (2015, SIA Nocticus)	N/A	<b>Pronounced increase</b> (strengthens and increases around large centres, decreases in remote places)	<b>Moderate increase</b> (fragmented changes)	<b>Stable</b> (or decreases in less positioned sector)	<b>Stable</b> (increases the significance of standards, higher quality, less number, decreases in particular sectors)
16.	Number of holidaymakers at the beach/ + holidaymakers on m <sup>2</sup> in official bathing sites		No data available	N/A	<b>Pronounced increase</b> (concentred in clearly positioned places around large cities)	<b>Moderate increase</b> (events diversified, less services, maintained existing infrastructure)	<b>Stable</b> (in total the anthropogenic load is decreasing)	<b>Stable</b> (increases number of sea bathing sites with the “Blue Flag” certificate)
17.	Number of official bathing sites		33 (2015, VI)	N/A	<b>Stable</b>	<b>Pronounced increase</b>	<b>Stable</b>	<b>Stable</b>
18.	Number of tourism events, maritime related, that are organized beyond the summer season		< 10 (2014, SIA Nocticus)	N/A	<b>Moderate increase</b> (several regular and recognized events that turns to visitors attracting “magnets” with regional branding)	<b>Pronounced increase</b> (much smaller size, although varied events with pronounced thematic niches, higher involvement of locals)	<b>Stable</b> (total number is not increasing, a number of events related to environmental awareness and environmental education increases)	<b>Small increase</b> (Increases competition on attraction of international events. Larger and more influential events with higher share of foreign participants)
19.	Number of marinas awarded with the “Blue Flag” certificate		3 (2015, VIF)	N/A	<b>Small increase</b>	<b>Pronounced increase</b>	<b>Pronounced increase</b>	<b>Pronounced increase</b>
<b>Indicators on fisheries</b>								
20.	Total yield (tons/ year)		57 336,6 (2013, ZM)	N/A	<b>Decrease</b> (decrease of fish resources)	<b>Stable</b> (within limits of maximal sustainable yields)	<b>Small increase</b> (within limits of maximal sustainable yields)	<b>Small increase</b> (within limits of maximal sustainable yields)
21.	Total coastal yield (tons/year)		3 664,5 (2013, ZM)	N/A	<b>Decrease</b>	<b>Small increase</b> (within limits of maximal sustainable yields)	<b>Moderate increase</b> (within limits of maximal sustainable yields)	<b>Moderate increase</b> (within limits of maximal sustainable yields)

	Indicators	Tendency	Current value (year, source)	Target value (year, source)	Scenario A: Economic development	Scenario B: Social well-being	Scenario C: Resilient marine ecosystem	Scenario D: Balanced development within common Baltic Sea space
22.	Number of people employed in coastal fishery		115 (2012, SIVN EJZFRP)	N/A	Decrease	Small increase	Stable	Stable
23.	Number of people employed in a fishery beyond the coastal zone		484 (2012, SIVN EJZFRP)	N/A	Decrease	Stable	Stable	Stable
24.	Number of fishing ships (12-40m) beyond the coastal zone		68 (2013, ZM)	N/A	Decrease	Stable	Decrease	Decrease
25.	Total capacity of engines for fishing ships beyond the coastal zone (kW)		19 122 (2013, ZM)	N/A	Decrease	Stable	Stable	Stable
26.	Number of fishing ships and boats (length <12m) for coastal fishery		628 (2013, ZM)	N/A	Decrease	Small increase	Stable	Stable
27.	Total capacity of engines for fishing ships and boats in coastal fishery (kW)		4 640,5 (2013, ZM)	N/A	Decrease	Stable	Stable	Stable
28.	Amount of aquaculture products produced (tons/year)	Not established	0	N/A	Small increase (only to fish aquaculture)	Pronounced increase (integrated fish, alga, mussels aquaculture)	Moderate increase (only algal/mussels aquaculture for improvement of environmental conditions)	Non existent (economically more suitable environmental conditions are in sea water of other countries)
<b>Social indicators</b>								
29.	Total number of inhabitants in coastal large cities		798 052 (2015, CSP)	N/A	Small increase	Small increase	Decrease	Small increase
30.	Total number of inhabitants in coastal towns and parishes		45 317 (2015, CSP)	N/A	Small decrease	Small increase	Decrease	Decrease
31.	GDP per inhabitant per year (EUR according to purchasing power parity)		17300 (2013, CSP)	>27000 (2030, LIAS)	Pronounced increase	Small increase	Stable	Moderate increase
32.	Employment rate in age group from 20 to 64 years (%)		70,7 (2014, Eurostat)	>75 (2030, NAP)	Pronounced increase	Pronounced increase	Pronounced increase	Pronounced increase

	Indicators	Tendency	Current value (year, source)	Target value (year, source)	Scenario A: Economic development	Scenario B: Social well-being	Scenario C: Resilient marine ecosystem	Scenario D: Balanced development within common Baltic Sea space
<b>Environmental indicators</b>								
33.	Emissions of biogenic elements (N, P) to surface waters from point sources (tons/year)		241 (P) 1818 (N) (2103, LVGMC)	N/A	Stable	Stable	Decrease	Decrease
34.	Share of marine protected areas (%)		15% (2015, VARAM)	N/A	Stable	Stable	Moderate increase	Moderate increase
35.	Conservation status of habitats of Community interests	No data available	Bad (2013, DAP)	Good (2020, ES BDS)	Decrease (status worsens)	Stable (bad status maintained)	Increase (achieved favourable conservation status)	Increase (achieved favourable conservation status)
36.	Biological diversity (D1): Soft bottom Benthic quality index BQI: in the Gulf of Riga (RL) and in the Baltic Sea (BJ)	Reference value by 2004: 4,6-6 (RL) (2013, JVSSN)	Good status	Good status 5,4 (RL) 7,0 (BJ) (2020, JVSSN)	Decrease (good status not maintained)	Stable (good status maintained)	Stable (good status maintained)	Stable (good status maintained)
37.	Population of commercial fish and shell fish (D3): Spawning stock biomass (Bpa) – Gulf of Riga, Baltic herring	No data available	Not good status 95.9 (2011, JVSSN)	Good status 60.0 JVSSN 2020:	Decrease (good status not maintained)	Stable (good status maintained)	Stable (good status maintained)	Stable (good status maintained)
38.	Concentration of Summer Chlorophyll a in the Gulf of Riga (RL) and in the Baltic Sea (BJ)	No data available	Not good status 2,88 – 13,94 (RL) 2,67 – 10,42 (BJ) (2013, LHEI)	Good status 1.8 mg m <sup>-3</sup> (RL) 1.2 mg m <sup>-3</sup> (BJ) (JVSN, 2020)	Stable (bad status maintained)	Stable (bad status maintained)	Increase (achieved good status)	Increase (achieved good status)

**Abbreviations:**

N/A – not available

LIAS – Latvian Sustainable Development Strategy 2030

NAP – National development Plan of Latvia 2014.-2020

CSP – Central Statistical Board

JVSSN – Initial assessment of marine environment (2012). Part D: Defined targets and assessment of the current environmental status of Latvian marine waters, Latvian Institute of Aquatic Ecology

VVD – State Environmental Service

VI – Health Inspectorate

VIF – Foundation for Environmental Education

ZM – Ministry of Agriculture

SIVN EJZF – Environment report of the European Maritime and Fishery Fund

VARAM – Ministry of the Environmental Protection and Regional Development

LVGMC – Latvian Environment, geology and Meteorology Centre

DAP – Nature Conservation agency

LHEI – Latvian institute of Aquatic Ecology

**Table 2: Spatial indicators on the scenarios of the use of the sea**

	<b>Scenario A (km<sup>2</sup>)</b>	<b>Scenario B (km<sup>2</sup>)</b>	<b>Scenario C (km<sup>2</sup>)</b>	<b>Scenario D (km<sup>2</sup>)</b>
<b>Reserved areas for shipping/navigation</b>	7072	6780	4637	11557
<b>Reserved areas for development of wind energy</b>	1167	0	829	925
<b>Reserved areas for research on wave energy</b>	222	0	0	
<b>Reserved areas for new marine protected areas</b>	0	0	681	620
<b>Reserved areas for fish aquaculture</b>	265	0	0	0
<b>Reserved areas for algae aquaculture</b>	0	138	203	0
<b>Reserved areas for integrated algae, mussels and fish aquaculture</b>	0	157	0	0
<b>Reserved areas for integrated algae and mussels aquaculture</b>	0	174	585	0