


Case study

Gothenburg Region, Sweden



Draft for a Regional Maritime Strategy for the Gothenburg Region (Orust and Uddevalla)

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Land Sea Act project partners worked in six geographical locations in six countries around the Baltic sea – Sweden, Denmark, Germany, Poland, Latvia and Estonia.

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Introduction

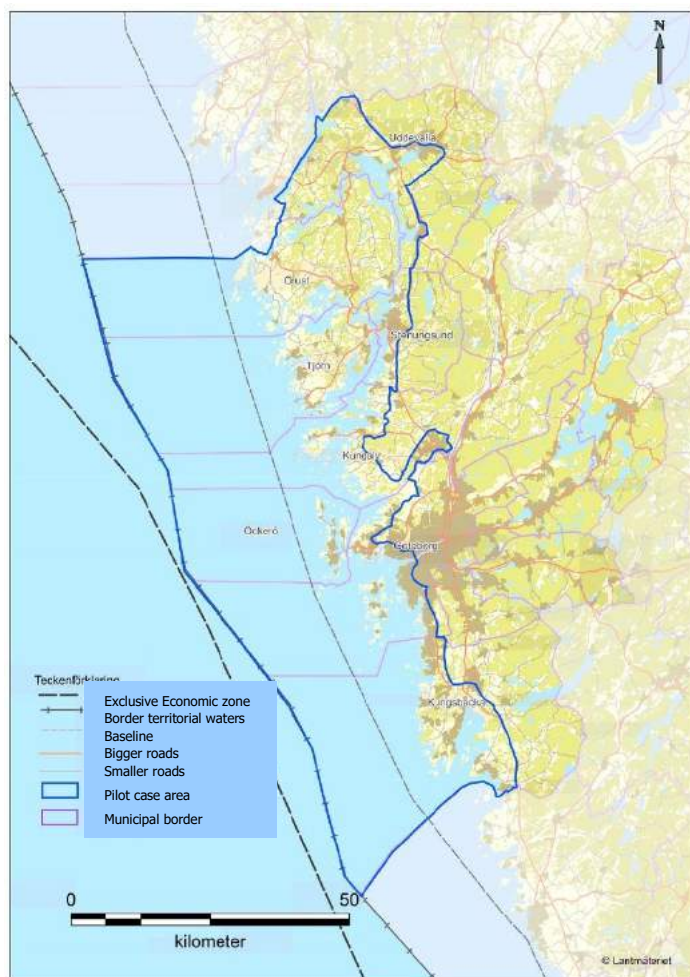
This report constitutes the case-report for the pilot case *Regional Maritime Strategy for the Gothenburg Region* within the Land-Sea-Act project (Land-Sea-Act Land-sea interactions advancing Blue Growth in Baltic Sea coastal areas). The aim of the pilot case is to contribute to a better understanding of the preconditions and spatial aspects of maritime business in the region, for better integration of a blue economy perspective in municipal and regional planning. The increased knowledge base can also serve as a basis for the development of a regional maritime strategy.

This report describes the pilot case, in terms of geography, environment as well as demographics and other aspects. It also gives an overview of the political preconditions for the blue economy with strategies on different levels aiming to support blue economic development. The pilot case report also describes shortly the composition of the blue economy in the area and overall trends affecting the development of the blue economy. Finally, the report gives insight in the pilot case activity result and conclusions and recommendations and lessons learned from the pilot case in western Sweden.

Description of the area

Geographical delimitation

Figure 1. Map of the pilot case area with municipal borders (purple), baseline (dotted grey) and Exclusive economic zone (dotted black).



The pilot case area consists of eight municipalities in the west coast of Sweden: Kungsbacka, Gothenburg, Öckerö, Kungälv, Tjörn, Stenungsund, Orust and Uddevalla. The area covers two counties and two administrative regions, Halland and Västra Götaland. Except for the two municipalities, Stenungsund and Uddevalla, which have no open sea within the municipal boundaries, the geographical boundaries of the municipalities extend to the so-called territorial boundary in the sea, 12 nautical miles from the baseline. The delimitation eastward is not to be seen as rigid but has some flexibility depending on issue in question. The border however is based on Chapter 4 of the Swedish Environmental Code, regarding *Special provisions for management of land and water for certain areas - Areas that in their entirety are of national interest*. The chapter defines, among other things, an area called *the highly exploited coast*, which includes the coast from Uddevalla to Kungsbacka. The demarcation ashore varies and extends from just under 100 meters up to 3-4 kilometres. The municipalities of Tjörn and Öckerö are included in their entirety in the 4th chapter area. In the pilot case, Orust has also been

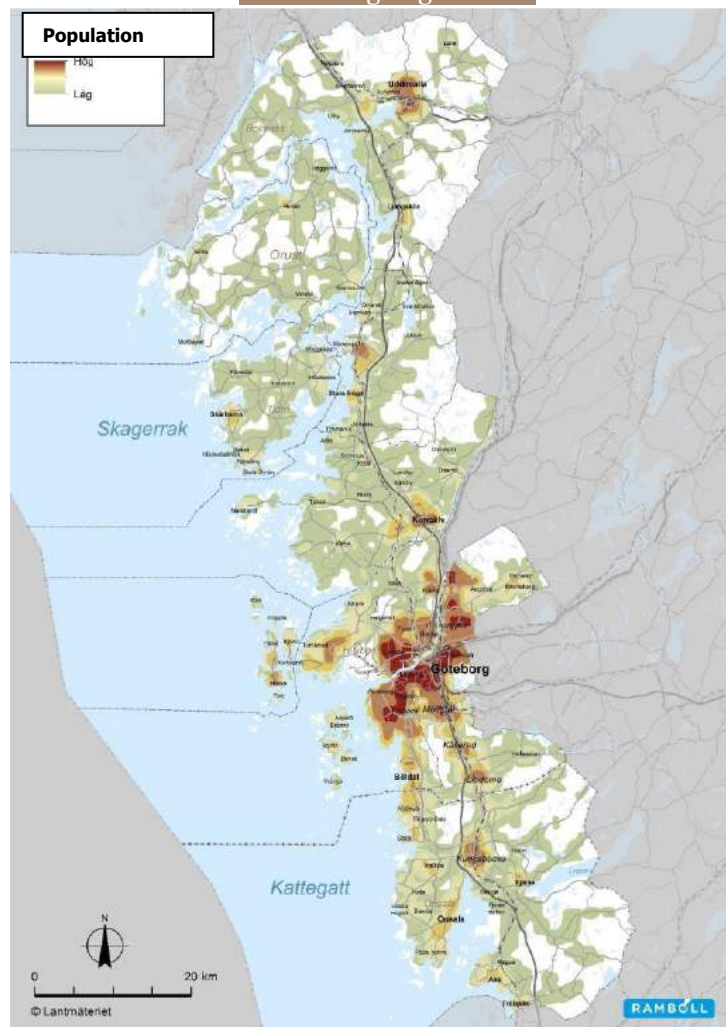
included in its entirety. Altogether, as can be seen on the map, the sea area is much larger than the included land area.

Demographics and socio-economic aspects

The eight included municipalities have quite different preconditions when it comes to development issues in general and development of the blue economy in particular. To begin with, they are very different in size. Gothenburg, in a Swedish perspective, is a big-city municipality, with over half a million inhabitants. It has since 2008 had a high and stable population growth by an average of over 7,100 people. The smallest of the eight municipalities, is the island municipality of Öckerö, with around 12 000 permanent residents. There are also two other island municipalities, Tjörn and Orust with around 15-16 000 inhabitants. However, all three island municipalities are strongly characterized by the fact that the number of inhabitants more than doubles during the summer months. The four remaining municipalities of Kungsbacka, Kungälv, Stenungsund and Uddevalla are coastal municipalities with relatively large populations (see table 1 below) where a large proportion of the inhabitants are living in the urban areas.

The largest urban areas are located along the bigger transport routes, the European road E6 and the railway *Bohusbanan* and serve as hubs and central locations in the area (see map to the left).

Figure 2. Population density from red (high) to green (low).
 Gothenburg Region 2018



There is also a difference when it comes to population development prognoses, where all municipalities, except Orust, are expected to grow in the next ten years. The population in Kungsbacka is estimated to grow most, with as much as 11 percent. Uddevalla and Gothenburg are also close to 10 percent while the smaller island municipalities of Tjörn and Öckerö are estimated to grow by 3-4 percent.

When it comes to age distribution within each municipality, we can see that the three, more rural, island municipalities have the largest percent of people over the age of 65. (See table 1 below). Here, Gothenburg is the one municipality that stands out, where around 15 percent are over the age of 65. The largest age group in Gothenburg is people between 25-44, which is partly a reflection of Gothenburg as a city with two big universities, where people move to study.

In all other municipalities, except the four mentioned above, the largest age group is people between the ages 45-64.

Table 1.

Age distribution per municipality.

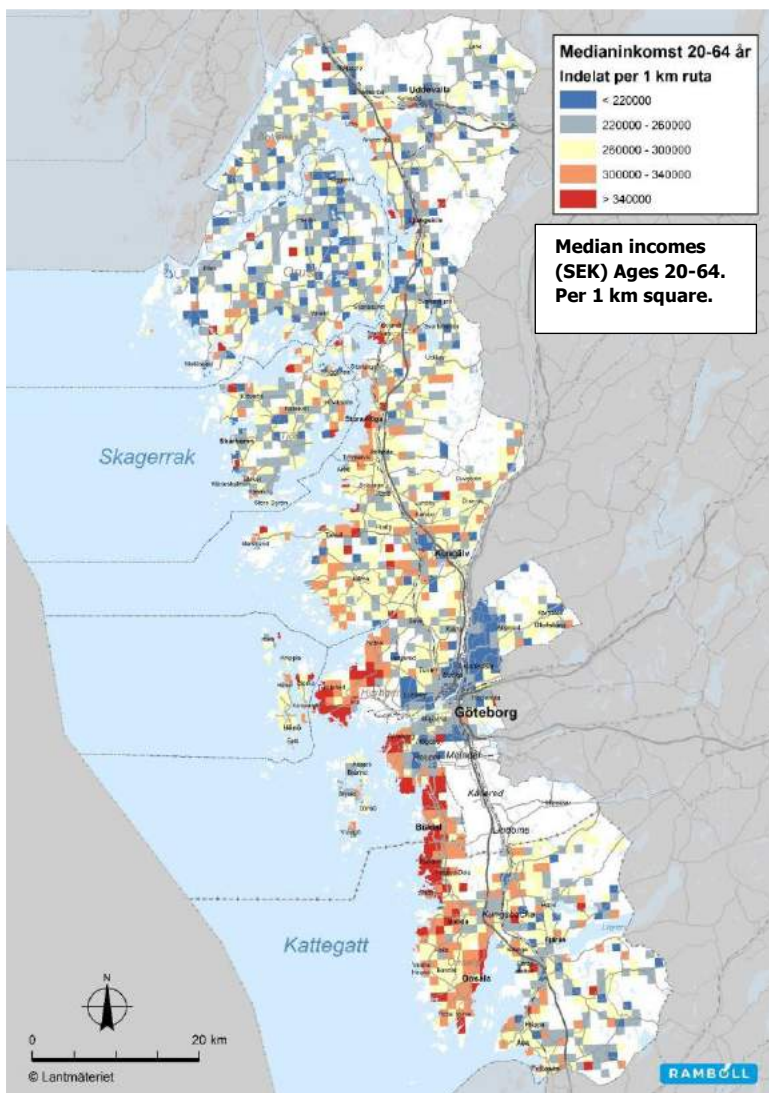
Data from <https://www.regionfakta.com/> from 2020 and Statistics Sweden 2021 <https://kommunsiffror.scb.se/>

Municipality/Age-gruop	0–15	16–24	25–44	45–64	65-	Total %
Göteborg	17,8	10,6	33,1	22,8	15,6	100
Kungsbacka	22	10	22	26	20	100
Kungälv	20	9,3	24,8	25,8	20,1	100
Orust	15,3	8,3	18,2	28	30,2	100
Stenungsund	20,3	9,8	23,5	26,5	19,9	100
Tjörn	17,5	7,9	20	26,5	28	100
Uddevalla	19,4	9,9	24,6	24,8	21,3	100
Öckerö	17,8	9,7	18,6	28,2	25,6	100

All of the municipalities have some level of commuting to Gothenburg. Especially Kungsbacka and Kungälv where around 14 000 people from Kungsbacka and 8000 people from Kungälv municipality commute to Gothenburg for work. Uddevalla, Kungälv and Stenungsund have around the same amount of commuters and from their municipalities. The three island municipalities (Tjörn, Orust and Öckerö) together with Kungälv have a higher degree of commuting from their municipalities than the other way around. Öckerö and Kungsbacka have the biggest difference between commuting in and out, where the largest degree of commuting from both municipalities is to Gothenburg.

When it comes to employment rates between the ages of 24 and 65, most of the municipalities have an employment rate around 85-87 percent. Orust is somewhat lower, on 83 percent and the big city municipality of Gothenburg has an employment rate of 76 percent.

Figure 3. Median income, age group 24-65 per 1000m square. From 340 000 SEK and above per year and above (red/high), down to below 220 000 SEK and below per year, (dark blue/low)



Median income can also give us an idea of socio-economic conditions in the area. As can be seen on the map (Figure 3 on the left) the highest median incomes are in the southwest of the area, mainly within Gothenburg and Kungsbacka municipalities. In the northern parts the median incomes are generally lower, but the highest concentration of lower median incomes is in the northeast part of Gothenburg city area, where there is also a high degree of population with lower levels of education.

Education levels differ somewhat between the eight municipalities. Within the population 16 years and older (Statistics Sweden 2021), Gothenburg has the highest degree of post-secondary education, at 47 percent. In Kungsbacka and Kungälv post-secondary education levels are at 40 and 35 percent respectively. The other municipalities lie around 30-35 percent, except for Orust, where 28 percent of the population has a post-secondary education.

Table 2.

Statistics on population, population prognosis and area of land and sea in the eight municipalities.

	Population (Statistics Sweden 2020)	Population prognosis 2030 (Region Västra Götaland Demostat. Base year 2018)	Land area (Sea area) km2 (SCB 1/1 2015)
Uddevalla	56 821	62 800	638 (83)
Orust	15 250	14 500	386 (492)
Stenungsund	26 945	29 355	252 (35)
Tjörn	16 122	16 722	167 (678)
Kungälv	46 909	51 111	362 (312)
Öckerö	12 951	13 353	26 (486)
Gothenburg	582 508	640 675	448 (563)
Kungsbacka	84 828	95 583	607 (831)

Environmental and physical preconditions

Figure 4. Map showing ecological status of the coastal waters. Green represents good status and yellow represents moderate. (Source: Water information system Sweden, VISS 2021)



The areas landscape characteristics can be described as a coastline consisting of open landscape, archipelago, bare cliffs, deciduous forest, heather and coastal forest areas. A bit more inland there are hilly coniferous and deciduous forest areas with steep ridges and fissure valleys. The hinterland is characterized by central plains with cultivated land, plateau mountains and deciduous forests.¹

The sea area is characterised by its high salinity and that it has a richness in species. The western sea has the most marine species of all the Swedish sea areas.² The western sea area consists of both open water and enclosed bays and fiords, where there is relatively little water turnover.

The coastal waters' ecological and environmental status is measured and presented continuously in accordance with the Water framework directive.³ The ecological status in the sea area is considered moderate in most parts and good in some parts of the area. Mainly outside the coast of Kungsbacka and Kungälv and in the open waters between the islands of Tjörn and Orust. All the inner waters have moderate ecological status. The latest assessment of chemical status in the surface waters however shows that the entire area does not achieve good chemical surface water status.

¹ <https://www.regionfakta.com/vastra-gotalands-lan/geografi/> (2021-09-23)

² <https://www.havet.nu/vasterhavet> (2021-09-23)

³ Directive 2000/60/EC, Water Framework Directive

Environmental pressures

There are many aspects that affects the coastal and marine environment. Here, some of the important environmental pressures in the area of western Sweden are described.

Many fish species in this sea area, have a poor status, which is largely due to over-fishing. The situation is most serious for cod in Kattegat. The fact that the populations are weak is a direct or indirect contribution to many species today being red-listed. The occurrence of many demersal fish, including cod, has declined so sharply that the future of these stocks is uncertain.⁴ This is also seen as a contributing factor to shallow bays being filled with fine-grained algae and the disappearance of eelgrass. In some inland coastal waters, there are areas that show some symptoms of eutrophication, but compared to the Baltic proper the issue with eutrophication is not as serious in the western sea of Sweden.

Leisure boating is big in Sweden and the awareness of its effect on marine environments are increasing. In total there are over 800 thousand leisure boats in Sweden and it is estimated that around 13 percent of these are on the west coast.⁵ Recent research from University of Gothenburg also shows that leisure boating give rise to many negative effects on the coastal environment. For example, an increasing prevalence of marinas, piers and dredged areas leads to losses of important bottom environments and often leads to a long-term deterioration of local environmental conditions.⁶ Many people anchor their leisure boats in scenic and shallow bays and by skerries that are important play and rejuvenation areas for fish, birds and other organisms, leisure boats can disturb the wildlife in these areas.⁷ But there are also issues with pollution in sediments from antifouling and harmful emissions from old boat engines. This is however not only an effect of leisure boating. There is and has been extensive shipping in the area (see section below on blue economy) that affects the sea environment in many ways, through emissions to air and sea water.

An issue for the coastal environments of western Sweden is also marine litter and microplastics. Every year, around 8,000 cubic meters of rubbish float ashore along the coast (entire west coast of Sweden). The litter consists of up to 90% plastic in various forms (wood and logs excluded). Remaining debris consists of glass and metal. It is not fully mapped, how this affects animal and plant life, but it is suspected for example that many aquatic animals eat the plastic in the belief that it is food.⁸ The majority of marine litter comes from land, where recreation and tourism are a major contributing source, but it can also come from sea-based activities such as fishing, shipping or aquaculture. Between 200 and 300 tonnes of beach litter is cleaned each year by municipalities, NGO's and companies.⁹

For the west coast of Sweden the issue of land use and building of coastal space also needs to be highlighted, since it pinpoints the importance of strategic coastal and maritime planning for a sustainable coastal environment that can also meet aims of developed maritime businesses. The Swedish Agency for Marine and Water Management (SWAM) did an extensive mapping of physical impacts in Swedish coastal waters between 2017 and 2020 and concluded that in some coastal areas, such as the west coast of Sweden, the rate of coastal land use and building in coastal areas is high and that shallow, wave-protected areas are more exposed than other areas. These are also both biologically important and very sensitive areas.¹⁰

⁴ <https://www.havet.nu/sa-mar-vasterhavet>

⁵ Swedish transport Agency 2020, Båtlivsundersökningen

⁶ <https://www.havsmiljoinstitutet.se/publikationer/rapportserie/2019/2019-3-fritidsbatars-paverkan-pa-grunda-kustekosystem-i-sverige> Page updated: 2019-11-04

⁷ <https://www.havochvatten.se/miljopaverkan-och-atgarder/miljopaverkan/foreningar-och-farliga-amnen/fritidsbatar.html>

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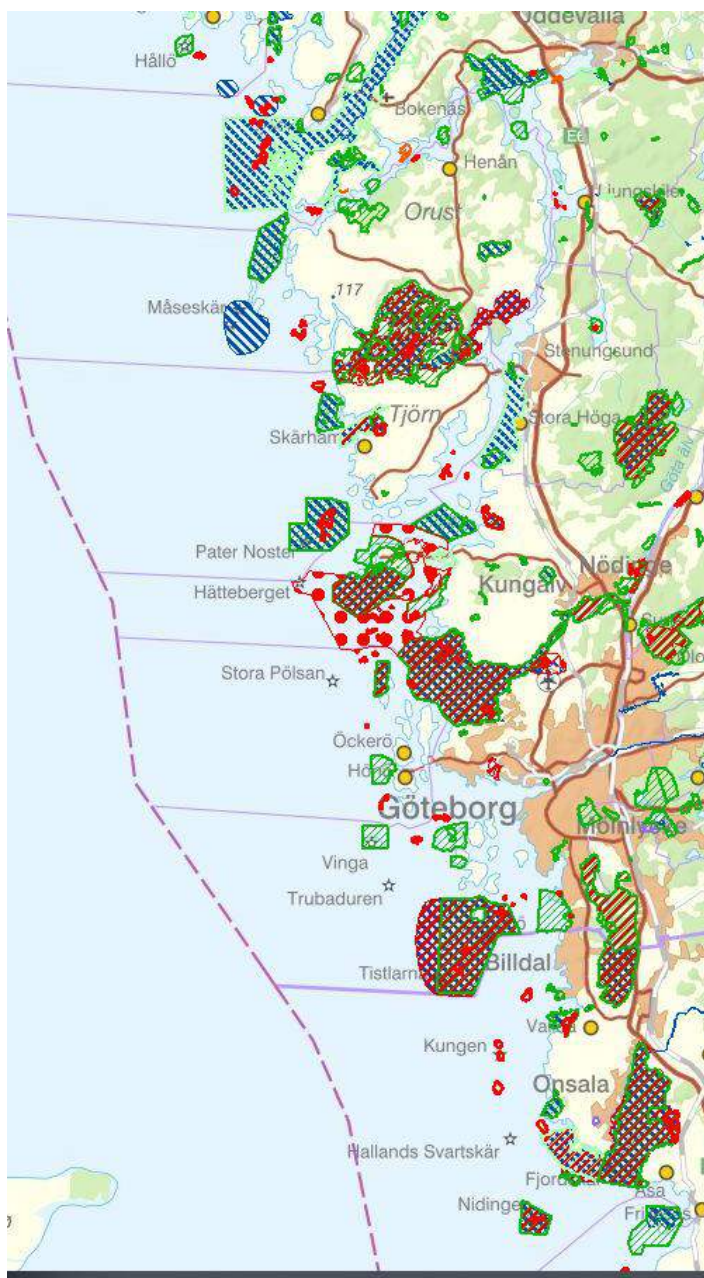
⁸ <https://www.havochvatten.se/miljopaverkan-och-atgarder/miljopaverkan/marint-skrap/mikroplaster.html> Downloaded: 2021-11-17

⁹ <https://vastkuststiftelsen.se/strandstadning/> Downloaded: 2021-11-17

¹⁰ Swedish Agency for Marine and Water Management, <https://www.havochvatten.se/miljopaverkan-och-atgarder/miljopaverkan/fysisk-paverkan/kartlaggning-av-fysisk-paverkan-av-vattenmiljon.html> Published: 2018-01-25

Nature protection and areas of national interest

Figure 4. Areas with different types of nature protection.
<https://skyddadnatur.naturvardsverket.se/> (2021)



Within the sea area there are many types of areas of national interests, which means geographical areas designated because they contain nationally important values and qualities. For example, there are areas of national interest for fishing, shipping, defence, recreation and cultural environment. These areas often overlap each other.

The area also has different types of protected areas. They have different levels of, and reasons for protection. These can be areas protected according to the birds and/or habitat directive¹¹, national parks appointed by the national government, nature reserves, biotope protection areas or areas that the municipalities themselves have appointed as valuable to preserve. Many of these areas are shallow waters, that for example are important breeding grounds for certain fish species and birds. Some of the protected areas are marine reserves with specific focus on protecting marine nature values but can include both sea areas, shores and islands.

¹¹ Council Directive 92/43/EEC and Directive 2009/147/EC

Political preconditions for the blue economy - strategies on different levels

There are several political strategies relating to the development of the blue economy and the importance of integrating a blue economy perspective in planning. From the international level, to the regional and down to the local level in the pilot case area. Within the frames of the pilot case an overall mapping was done on blue economy related policies and strategies at different levels. Below is a brief overview of the most relevant policies.

To summarise them, the overall aims and focus areas of strategies on different levels are quite similar, which displays a relative consensus on what need to be achieved and what constitutes the biggest challenges. Most of the strategies realise the need to work strategically with supportive preconditions to harness the potential of the blue economy and sees that the blue economy can provide value creation and jobs as well as being a tool to meet climate and environmental objectives. All the strategies however acknowledge the need to keep the development of blue economic activities within the frames of what the marine and coastal ecosystems can handle, since that is a precondition for a long-term sustainable development. In most of the strategies, maritime spatial planning and land-based strategic planning, are highlighted as important tools for meeting the aims and balancing the growing and different interest in the marine areas. It is however valuable to specify how initiatives on different levels can contribute to achieving the ambitions in the available strategies.

International level

UN sustainable development goals

The UN 2030 Agenda for Sustainable Development was adopted by all United Nations Member States in 2015 with the overarching aim of peace and prosperity for people and the planet, now and in the future. At its core are 17 sustainable development goals (SDG:s) that are to be seen as integrated and indivisible. Many of them are relevant from a blue economy perspective but the most relevant goal would be goal 14, to conserve and sustainably use the oceans, seas and marine resources for sustainable development. The targets connected to goal 14 include for example reducing impacts on sea from land-based activities, protecting marine and coastal ecosystems and increasing scientific knowledge. But they targets within goal 14 also lift more regulatory aspects such as better implementation of international laws, prohibiting certain forms of fisheries subsidies, effectively regulating harvesting as well as ending overfishing, illegal, unreported and unregulated fishing and destructive fishing practices. One of the targets, 14.7, has specific focus on development of a sustainable blue economy within Small Island developing States and least developed countries. Here, fisheries, aquaculture and tourism are mentioned as especially important sectors.¹² Even if the overall perspective of Agenda 2030 is poverty reduction and equal prosperity, the

¹² <https://sdgs.un.org/goals> Downloaded: 2021-11-17

SDG:s are of importance to developed countries for example in developing a joint capacity to deal with our global challenges.

UN Decade of Ocean Science for Sustainable Development

In the end of 2017, the UN named 2021-2030 the Decade of Ocean Science for Sustainable Development. In 2017, the first of the UN's "The Ocean Conference" in New York was also led by Sweden together with Fiji. Six societal goals have been developed for the Ocean Decade:

- A clean ocean
- A sustainably Harvested Ocean
- A Healthy Ocean
- Predicted Ocean
- Transparent Ocean

Goals that all relate to the development of the blue economy.

EU Green deal and the new approach to sustainable blue economy

The EU-level policies on the blue economy have made a journey from the Blue Growth strategy from 2012, that focused on blue growth as a way of meeting the economic crisis and creating more jobs in Europe, to the new approach on Sustainable Blue Economy, which is seen as an essential part in achieving the objectives of the European Green Deal and ensuring a green and inclusive recovery from the pandemic. The new sustainable blue economy sets out to better connect the green and the blue policies and realise that the environment and the economy are intrinsically linked. It replaces the Blue Growth strategy from 2012.

The Blue Growth strategy focused on seas and coasts as a driver of the economy and lifted maritime sectors based on their value and job-creation potential, within a framework of sustainable development. The Green Deal has a heavier focus on fighting climate change and acknowledges that all blue economy sectors including fisheries, aquaculture, coastal tourism, maritime transport, port activities and shipbuilding will have to reduce their environmental and climate impact for us to reach our climate targets.

The approach includes an agenda with strategies to achieve the goals of the Green Deal:

- Developing offshore renewable energy, decarbonising maritime transport and greening of ports
- Circularity through e.g. fishing gear design, ship recycling, decommissioning of offshore platforms and actions to reduce plastics and microplastics pollution.
- Protecting 30% of the EU's sea area
- Climate adaptation through developing green infrastructure in coastal areas.
- Sustainable food production including new marketing standards for seafood, use of algae and seagrass, stronger fisheries control and growing sustainable aquaculture.
- Improve management of space at sea – Create a Blue Forum for users of the sea and marine protected areas.

The implementation of the MSP-directive¹³ is seen as important for improving the management of the space at sea and reaching the aim of the new sustainable blue economy approach. This also goes in line with the ambition of coherence across blue economy sectors, facilitation of coexistence and synergies in the marine space that new approach enraptures.

¹³ Directive 2014/89/EU. EU Framework directive for Maritime Spatial Planning

There are also sector-wise strategies and policies on EU level, such as the EU strategy on offshore renewable energy¹⁴, the EU Common Fisheries Policy (CFP), strategic guidelines for aquaculture and EU's maritime security strategy (EUMSS).

Baltic Sea Action plan

The Baltic Sea Action Plan¹⁵ (BSAP) is HELCOM's strategic programme of measures and actions for achieving good environmental status of the sea, ultimately leading to a Baltic Sea in a healthy state. Although the focus of the action plan is not specifically on blue economic development, the overall vision of HELCOM includes *supporting a wide range of sustainable economic and social activities* and one of four goals in the BSAP is *Environmentally sustainable sea-based activities*. That means for example that there should be no or minimal disturbance to biodiversity and the ecosystem and no or minimal harm to marine life from man-made noise. The actions and goals in the BSAP therefore set frames for the development of economic activities in the Baltic Sea.

National level

Swedish maritime strategy

In 2015, the Ministry of Enterprise and Innovation in Sweden, adopted a Swedish maritime strategy - for people, jobs and the environment. The vision in the strategy is a competitive, innovative and sustainable maritime sector that contributes to increased employment, reduced environmental impact and an attractive living environment. So, the vision is threefold and connects to the EU Blue Growth Strategy from 2012 in its ambition to realise the potential of the blue economy for value and job creation as well as better environmental conditions. The strategy has six areas of action that set the direction of work:

- Healthy and safe marine environment
- Knowledge and innovation
- Maritime spatial planning
- Functional rules and efficient permit processes
- International cooperation
- Conditions for the business sector and industry-specific measures.

The sixth area of action lifts measures within specific sectors: Transport, maritime technology and production, the sea as a natural resource (marine foodstuff), leisure and tourism, energy, minerals and bioresources and services (ship brokers, insurance companies, research activities etc). In addition to setting a direction for the work on realising the Swedish blue growth potential, the national maritime strategy also contains a structure for follow-up.

National sector strategies

In some areas there are also sectoral strategies for some maritime sectors in Sweden. For example, there is a new (2021) joint strategy for Swedish fisheries and aquaculture¹⁶ which include action plans for commercial fishing, recreational fishing, fishing tourism and aquaculture. Also here, strategic planning and issues of localisation are pinpointed as crucial.

Since 2016, there is a long-term food strategy for Sweden with focus on preconditions for local production which, for example, includes goals of using more nationally produced fish for human consumption. Action plans were developed during 2017 including long-term initiatives to develop Swedish aquaculture, with

¹⁴ https://ec.europa.eu/energy/topics/renewable-energy/eu-strategy-offshore-renewable-energy_en Downloaded: 2021-11-19

¹⁵ <https://helcom.fi/media/publications/Baltic-Sea-Action-Plan-2021-update.pdf>

¹⁶ <https://www.havochvatten.se/arkiv/aktuellt/2021-06-01-gemensam-strategi-visar-vagen-framat-for-svenskt-fiske-och-vattenbruk.html>

special regard to processing and innovation opportunities, regulatory simplification, technology development and collaboration.

The Swedish energy and climate plan from 2020 contains overarching objectives which are of great importance for the development of marine energy and shipping such as reduced emissions from transport and increased share of renewable energy.

There is also an ongoing process of developing a national strategy for bioeconomy where there are aspects of blue bioeconomy included, such as better preconditions for using biological resources from the sea.

Regional level

Maritime strategy and action plan of Västra Götaland

The Region of Västra Götaland adopted a maritime strategy in 2008. The strategy was updated in 2015, (which replaced the strategy from 2008) and later that year an action plan for maritime businesses was developed. The purpose of the new strategy was to point out future areas for action. The long-term vision is that *Western Sweden shall be one of Europe's leading maritime regions with solutions focused on innovation and environmentally compatible growth.*¹⁷ The goals of the strategy are to

- Maintain and develop maritime competence and competitiveness
- Collaborate across sectoral boundaries
- Collaborate in long-term partnerships with participation from business, academia, and institutes as well as public actors including municipalities and state authorities
- Influence and interact with the national, European and international maritime agenda

In the action plan, six focus areas are pointed out as important for future development: Marine management, maritime operations and maritime technology, Marine biotechnology, marine energy, marine foods and tourism and recreation.¹⁸ Actions include developing regional collaboration around maritime administration, and in particular maritime spatial planning. A range of other initiatives are included in the action plan, aiming to support the different sectors with knowledge and platforms for innovation, demonstration projects and collaboration where stakeholders from both research, businesses and public administrations are included.

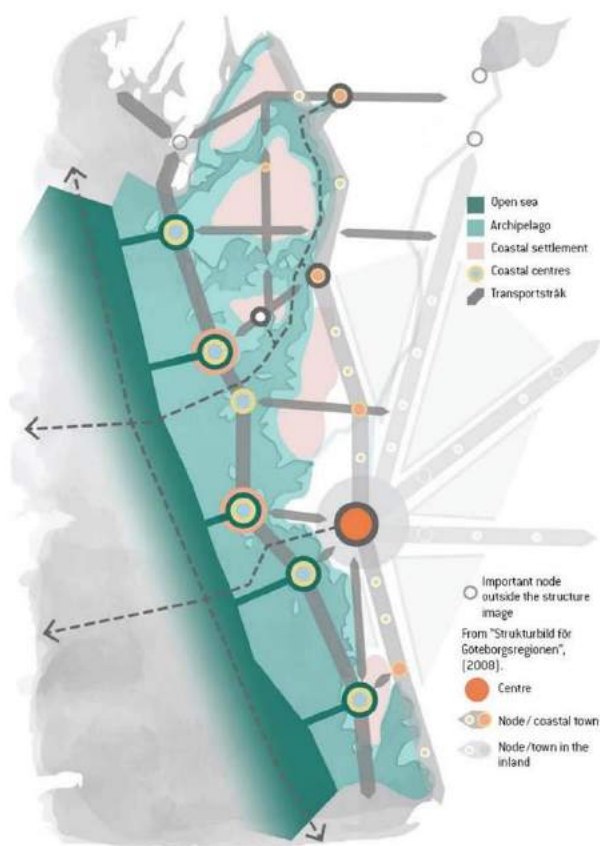
Deepened structural illustration for the coastal zone in the Gothenburg Region

The Gothenburg Region (GR) is a collaborative organisation between 13 member municipalities. It has since 2008, had a strategic document called the *Structural Illustration for the Gothenburg Region* with an illustrative map showing the future sustainable physical structure of the region together with joint agreements for its development. The strategy and its related goals states that the development and conservation of the unique values in the coastal zone is a responsibility for the entire region.

¹⁷ Västra Götalandsregionen 2015, Maritim strategi för Västra Götaland.

¹⁸ <https://www.vgregion.se/regional-utveckling/program/hallbara-maritima-naringar/>

Figure 5. Deepened structural Illustration of the Coastal zone in the eight municipalities showing central elements in a future coastal structure.



During a three year cooperation project (2016-2019), that included all the eight municipalities, regional and other stakeholders a deepened structural illustration for the coastal zone was developed. The overarching aim with the project was to establish better cooperation between municipalities, authorities and other relevant actors in order to achieve sustainable development of the coastal and marine area in the eight participating municipalities. The deepened structural illustration includes joint agreements for a future sustainable regional structure with focus on the coastal zone and a map image that illustrates central elements in a future structure of the coastal zone. All municipalities, except one, have politically approved the document and since then, some of the municipalities have conducted, or initiated comprehensive planning processes where the deepened structural illustration has constituted one of the foundations. However, even if business development was represented during the project and two of the joint agreements have a specific focus on maritime businesses and coastal tourism, stakeholders saw a need to further explore the knowledge on and

possibilities for developing the maritime, or blue, businesses. The pilot case in the Land-Sea-Act project was a great opportunity to build on existing work and political foundations and develop better knowledge on spatial aspects and other preconditions for the maritime businesses in the region.

Local level strategies

All of the eight municipalities have newly adopted or ongoing processes for developing municipal business strategies. Only one of the municipalities, Uddevalla, has a specific local maritime strategy with a vision of becoming a maritime centre in western Sweden and making the most of the relation between land and water. Uddevalla's maritime strategy specifically highlights four sectors; shipping, port activities, marine technology and marine tourism. However, it also includes seven key areas for action, including infrastructure development and strategic planning. The business strategies for the three island municipalities Öckerö, Orust och Tjörn have a somewhat stronger focus on the maritime perspective such as marine and coastal tourism.

There are however several areas of action within the eight municipalities that are similar or the same, for example issues of supply of skilled labour, infrastructural issues (both digital and transport) and having a preparedness for business development in planning.

Blue growth platforms, research and innovation in the pilot case context

The Maritime cluster of west Sweden is a triple helix cooperation platform gathering actors from academia, public and private sector. It is led by the Region of Västra Götaland and works within the regional maritime strategy focus areas: maritime operations, marine biotechnology, marine foodstuff, tourism, marine energy and marine governance (where maritime and coastal planning is an important part).

Institutions for research and innovation on Blue Growth

The two universities in Gothenburg, Chalmers university of technology and Gothenburg University, both have research platforms support the development of blue growth. Gothenburg University hold the Centre for Sea and Society, which is a centre that gathers marine research in different disciplines to develop new research, better education and disseminate research results to a wider public. They have also developed a masters programme in Sea and Society, a transdisciplinary programme gathering students from across the world. University of Gothenburg also has Tjärnö Marine Laboratory, where they have ships, field equipment, diving facilities, laboratories, sea water system, lecture halls etcetera for researchers and students within marine sciences.

At Chalmers University of Technology there is cutting edge research, innovation and education within shipping and marine technology focusing on development of more sustainable technologies. An example of an organisation that Chalmers initiated was Lighthouse, which is a neutral collaboration platform for research development and innovation in the maritime sector.¹⁹

Kristineberg maritime research and innovation centre is a joint effort where the two universities mentioned have partnered with Stockholm Royal Institute of Technology KTH, Swedish environmental research institute IVL, RISE Research institutes of Sweden, Innovatum Science Park and the municipality of Lysekil. The centre holds a research and innovation environment that offers demonstration environments, testing facilities and marine infrastructure, such as ships with research capacities. For example, they have an ongoing large-scale project on Seaweed farming and also testing methods of farming lobster in indoor tanks. They also conduct research on replanting of eelgrass which can be one important, but expensive measure for increasing sea water quality and reducing depletion of fish stock.

Situated in Gothenburg is also the Swedish Institute for the Marine Environment (Havsmiljöinstitutet) which is a national academic node for interdisciplinary analysis and synthesis assisting marine environmental governance working on behalf of the government. It is a collaboration between University of Gothenburg, Stockholm University, Umeå University, Linnaeus University and Swedish University of Agricultural Sciences. The institute supports both Swedish government, agencies and other interested actors in their effort to improve the marine environment by providing up-to date status-descriptions and analyses of knowledge on the seas around Sweden. Although they do not have an assignment directly connected to blue growth issues, the knowledge they produce can have effects on the governance of the marine resources.

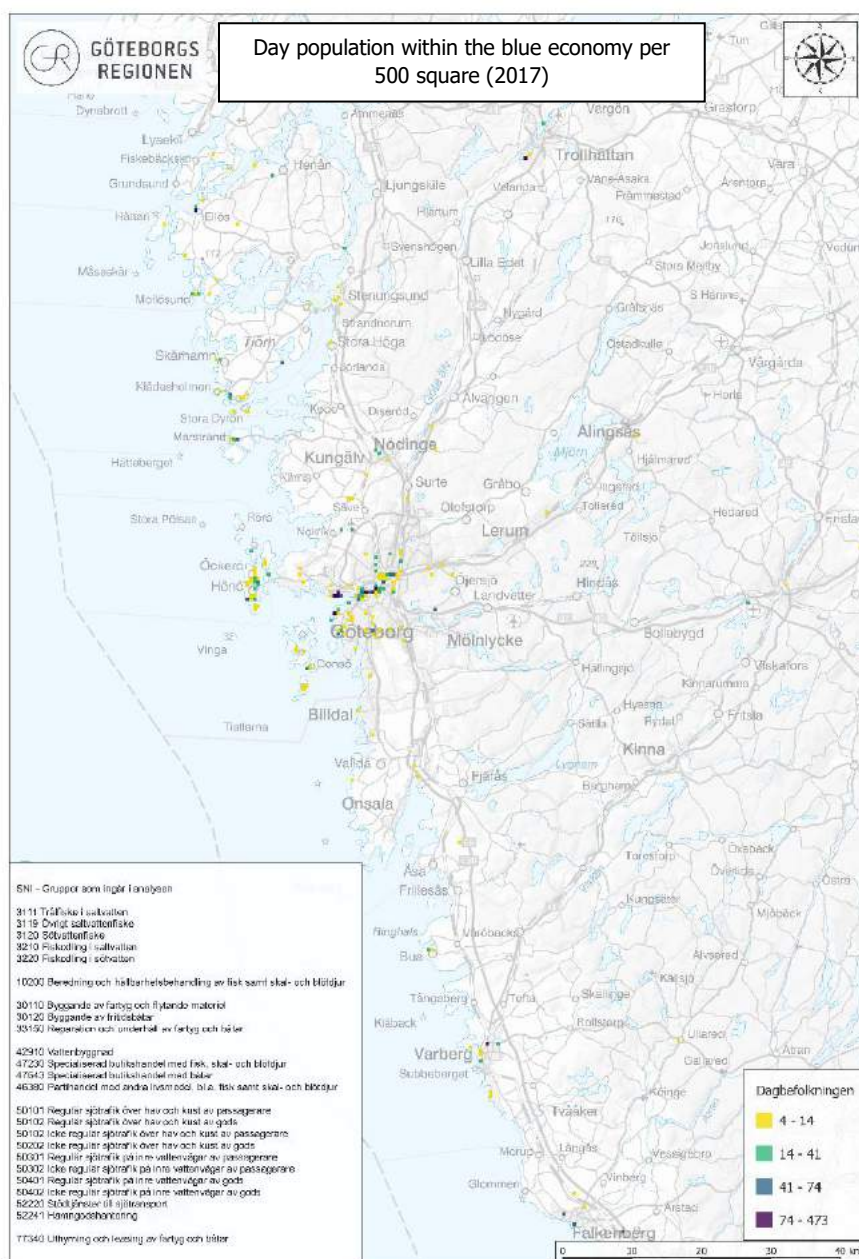
In addition to this there are also research institutes such as RISE that is an important engine in networks such as Swedish Marine Technology Forum, Offshore West and Ocean Energy Sweden. Also IVL, Swedish Environmental Institute works broadly with environmental water issues, but is also involved in several projects around aquaculture development.

¹⁹ <https://lighthouse.nu/?lang=en>

The Blue Economy in the area

The blue economy in the pilot case consists of a quite diverse set of businesses and sectors. When it comes to existing and traditional relation to and use of the sea, some differences can be discerned between the municipalities. The data in table 3 shows the total day-population within maritime businesses (from GIS-mapping described below) and gives an indication of the importance of maritime businesses for local employment for the eight municipalities.

Figure 6. Map of concentration of day-population within the blue economy. Per 500 square.



The statistics does not capture the entire blue economy but gives an idea of the distribution of people working within the maritime businesses between the municipalities. The share of day-population within the maritime businesses is significantly higher within the island municipalities of Tjörn, Öckerö and Orust. Within the frames of the pilot case, a GIS-mapping of the day-population within the blue economy was conducted. The day population shows employed within certain sectors distributed in 500-meter squares in accordance with the location of the workplace. The mapping was based on the NACE-codes most relevant for the Blue Economy and that are included in the evaluation system of the Swedish

Maritime Strategy.²⁰ On the map to the left, a rather high concentration of day population can be seen in Gothenburg and to some extent also within Öckerö municipality, west of Gothenburg. So, non-surprisingly, a larger share of the employees within the blue economy are working in the Gothenburg area where there is a large port with supporting businesses.

But the map also shows a high concentration in the very western parts of the island municipalities of Tjörn and Orust which mainly reflects their boat building and marine food processing industries. Important to note is that not all maritime businesses are represented in the statistics that are the basis for the mapping. Only businesses registered as limited companies (Ltd) or corporations are visible in this type of statistics. For example, many of the businesses within the fishing industry are run as individual enterprises/sole propriety companies. Below, the main sectors of the blue economy in the municipalities in the pilot case area are described briefly.

Table 3.

Day-population within maritime businesses and share of total population per municipality.

	Total day-population within maritime businesses (Statistics Sweden and GR 2020)	Share of total population
Uddevalla	275	0,5%
Orust	481	3,2%
Stenungsund	98	0,4%
Tjörn	394	2,4%
Kungälv	212	0,5%
Öckerö	470	3,6%
Gothenburg	9165	1,6%
Kungsbacka	220	0,3%

Fishing and food processing

In general there is a long tradition of using the sea as a resource within the area, especially in Gothenburg, Uddevalla and the island municipalities of Öckerö, Tjörn and Orust. All five municipalities have some degree of fishing industry and/or marine food processing, where the Gothenburg, Öckerö and Tjörn have the most number of active boats in the fishing fleet. They are all members of a cooperation called *The Fishing municipalities*²¹ with the goal to maintain a strong and viable small-scale fishery along the coast in west Sweden and work towards a long-term sustainable fishing industry. The fishing industry in the area is twofold, on one hand there is small-scale, coastal fishing but there is also some large scale pelagic fishing. Gothenburg holds one of the biggest landing ports, mainly for shrimp, fish and crayfish. The fish port in Gothenburg also has Sweden's largest fish auction, *Gothenburg Fish Auction* and the largest concentration of fish wholesalers in Sweden. Ellös, on Orust is an important landing port for herring, but also Rönnäng on Tjörn and Öckerö port are landing sites for fish. However, much of the fish that is caught within the pilot case is landed in Danish ports. Worth mentioning is also that commercial

²⁰ <https://www.government.se/4ad6e7/contentassets/9e9c9007f0944165855630ab4f59de01/a-swedish-maritime-strategy--for-people-jobs-and-the-environment>

²¹ <https://www.fiskekommunerna.se/>

fishing constitutes only around 1 percent of the total revenue within the maritime business sector in Sweden.²²

In Orust, Sweden's largest producer of farmed mussels is operating. They have mussel farms in the waters around Tjörn and Orust. Both Tjörn and Orust also have marine food processing industries focused mainly on herring and sprat, but Orust also have some initiatives on processing of blue mussels for mussel flour and innovative uses of mussel shells. There are also some smaller businesses focused on processing of algae.

Ship building, repair and service

Orust has a long tradition of boat building. Today there is one very established boat-building business left that builds sail yachts. There are some bigger shipyards within Gothenburg and Tjörn but all of the municipalities also have some level of businesses within boat services and repair. To some extent for commercial ships, as mentioned below on shipping, but mostly with focus on leisure boats.

Shipping, ports and marine technology

There are four ports in the area. The port of Gothenburg, which is the largest port in Scandinavia. It is owned by the City of Gothenburg and has container, ro-ro, car, passenger and oil and energy terminals with exports comprising mainly steel, vehicles and forest products as well as paper, pulp and timber products. Imports are largely in the form of consumer goods such as clothes, furniture, food and electronics. There is a 50/50 balance between imports and exports. In and around the Gothenburg area, the shipping industry with development and operations of ships is important, e.g. in the southern archipelago of Gothenburg.

Petro port in Stenungsund is responsible for the ship traffic to the chemical industries in Stenugsund where they handle various types of chemical products, both liquid and gas, oil products and an increasing proportion of renewable fuels. Petro port is jointly owned by two of the chemical companies in Stenungsund.

Wallhamn on the island of Tjörn is privately owned and Sweden's third biggest vehicle port. The vehicle port is combined with inspection and car workshop, so the vehicles are inspected and made ready for delivery in the port area. Uddevalla port is owned by the municipality of Uddevalla and works containers, bulk as well as general cargo.

Within shipping there are some big actors in the Gothenburg area and the southern archipelago of Gothenburg where actors within both shipping and maritime operations are situated. The region has many businesses as well as actors within research and education and public sector within maritime operations and marine technology, supporting shipping industry and offshore operations, for example within Öckerö municipality. One other example, SSPA in Gothenburg, is among the four best ship testing companies in the world.

²² Marine strategy for the Baltic and North Sea 2018-2023, Environmental status assessment and socio economic analysis. <https://www.havochvatten.se/download/18.5b07be29168ba461a9846f4a/1549542287388/rapport-2018-27-marin-strategi-for-nordsjon-och-ostersjon-2018-2023.pdf>

Coastal and maritime tourism

The tourism industry and coastal tourism has a big importance for all the municipalities. For Sweden as a whole, marine tourism within the maritime business sector constitute around 40 percent of net revenue. Coastal tourism in the area is strongly characterised by its seasonality and high pressure on local infrastructure during the summer months. Leisure boating is a growing part of the coastal tourism but there have also been pilot projects developing boat tourism for visitors who don't have their own boat. A lot of the coastal tourism is also focused on sunbathing, but there is ongoing work of extending the season with focus a on culture, knowledge and food tourism.

Four of the municipalities have a joint tourism office, Tjörn, Orust, Kungälv and Stenungsund, with large focus on coastal tourism which is one of the main attractions.

Marine energy production

Figure 7. Map of ongoing plans and established wind power plants. Vindbrukskollen <https://vbk.lansstyrelsen.se/> 2021



There is an ongoing transition to fossil free energy production, but today there are no marine energy production sites in the pilot case area. There are a few close-to-sea wind power plants in the area, but none in the sea area yet. Large parts of the sea area is of national defence interest, which has been difficult to combine with fixed installations. But only during 2021, four applications for establishment of large offshore wind parks are being processed (see map on the left). Only one of them is actually within municipal waters, but all of them will have effect also on local level for example when it comes to

connections to land. North of the pilot case area there has also been demonstration sites for wave energy.

Blue Biotechnology

The area of blue biotechnology is not very developed. The main initiatives are within the research and innovation sphere. Initiatives are focuses on areas such as antifouling and pharmaceuticals. There is a low extent of commercialisation and the few companies that exists are characterised by their small size.

Blue economy trends and challenges in pilot case context

A global and inevitable trend (and challenge) that affects all actors within the blue economy is climate change. To survive, businesses will have to adapt their offers to fit the global agenda and it will be difficult to separate environmental and social concerns from economic considerations. This is true for all the sectors within the blue economy.

Marine energy production is of course an area that in its core aims to meet the challenges of a changing climate. In the pilot case area, offshore wind has not been feasible to develop, but is now a fast-growing area, as mentioned above. There are however challenges with potentially conflicting interests such as defence and commercial fishing. The coast in the pilot case area is also well suited for development and demonstration of other forms of marine energy production such as wave-power since it has milder conditions compared to coasts where finished products are to be installed.

Within shipping and ports as well as in the leisure boat industry, which are quite slow changing industries, the focus is on developing use of alternative fuels, more effective engines and electrification. But there are also issues of the design of boats, use of lighter and more sustainable materials and engine development. There are some smaller businesses in the pilot case area working with the development of e-boats and others that are developing effectively shaped hulls that increase effectiveness.

Marinas and ports will also need to be able to offer services connected to reduced green house gas emissions. The port of Gothenburg has for many years offered electrical connection for arriving ships and are preparing to be able to connect more vessels to electricity at the same time as plans are being made to be able to fully charge battery-powered vessels in the long term. Electrification in marinas would be advantageous to develop in a coordinated manner in order, for example, to harmonise standards for connections.

When it comes to trends within sustainable leisure boating in a wider sense there are also initiatives connected to the effective and sustainable use of space. For example, developing possibilities to store boats on land instead of water and alternative forms of ownership, such as renting, boat pools or other forms of joint ownership to be able to reduce the total amount of boats affecting marine areas and using marine and coastal space.

Coastal tourism also experiences a need to be able to offer sustainable alternatives, with more and more aware customers. Activities and food during stay as well as the accommodation needs to meet the new standards. Another challenge for the tourism industry in the pilot case area is the issue of seasonality. Although the tourism industry and seasonal inhabitants are contributing with value and other aspect, such as withholding a degree of commercial service in the area, they also put pressure on infrastructures such as waste management and water supply which is costly for municipalities. There are some ongoing trends aimed at prolonging the season. For example, developing cultural tourism where museums, musical events and other cultural attractions are in focus. There are also some actors focusing on knowledge tourism, which connects to trends where tourists want more than just experiences but also want to learn more about the destination they are visiting. Meal tourism is also becoming increasingly important, and the supply of high-class seafood plays an important role together with opportunities for fishing trips and lobster/crayfish safaris. Guided sport fishing activities can also be a way of prolonging the season.

Within marine food production, where both fishing and processing is included, the challenges are more connected to the declining fish stocks and the lack of production capacity of ecosystems, especially for the coastal fisheries. They are therefore struggling with low profitability, but also an aging workforce. Many fisheries need to develop and diversify their operations with services or products that bring added value, such as connecting their businesses with tourism elements. Another example can be to develop the processing to test new and innovative products. Development is also ongoing when it comes to less harmful and more selective fishing gear.

Regarding aquaculture, the main challenge is perhaps the complicated procedures for permitting. More and more of aquaculture is moving from the water up on land where the system can be more controlled. Some businesses are combining cultivation of fish on land with cultivation of vegetables so that excess nutrients can be used. AI-technology is also being explored in land-based fish farms to optimise temperatures and feeding. There are some ongoing and innovative demonstration activities on large scale algae farming, breeding of lobsters for farming and farming of alternative fish species, further down the food-chain. The algae project also connects to the area of blue biotechnology, since the project also aims to explore different usages of the elements in the algae, such as pharmaceuticals or cosmetics.

Overall conclusions from pilot case activities

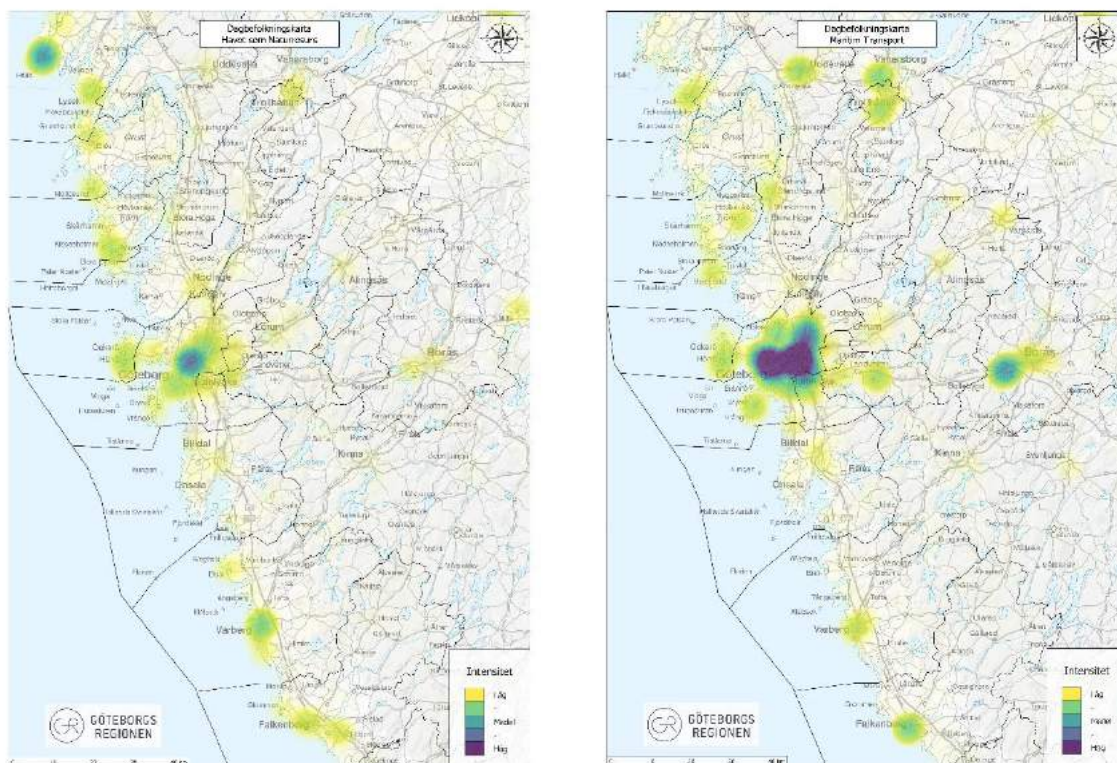
As a bridge to the last section of this pilot case report on recommendations, this section offers a short overview of the main pilot case activities and conclusions drawn.

GIS-mapping of maritime businesses

To get a spatial overview of the blue economy in the pilot case area a GIS-mapping of maritime businesses was conducted. The mapping is based on the Swedish equivalent of NACE-codes (SNI-codes) where a selection of codes was made with basis in the national maritime strategy's definitions and follow up-system. SNI-codes do not cover all businesses, as mentioned earlier, but is the established way of gathering statistics on businesses and was, in the pilot case context, a way to capture as much as possible and connect with other data. The SNI-codes were connected with register-based labor market statistics (RAMS) on individual level, from Statistics Sweden.

In the maps produced, the data was presented on heat maps with concentration of "day-population" and "night-population" per 500 meter square. The maps gave a regional spatial overview of spatial distribution of maritime businesses, with an expected and high concentration to Gothenburg, but also Öckerö islands. The night population, showing where people reside at night, gave the image of Gothenburg big city area, as important for supply of labour. The sectoral analyses also showed a high concentration to Gothenburg, especially when it came to the maritime transport sector. However, when looking at maritime food production, there is a more even distribution along the coast, reflecting the sector's importance to the smaller island municipalities.

Figure 8. Heat-map of concentration of day-population within different sectors. Fishing, aquaculture and processing (left) and maritime transport (right).



Interview study with maritime businesses

An interview study was conducted with 130 maritime businesses in the pilot case area, examine the existing and future needs of the maritime businesses, focusing on competence, collaboration, land and premises as well as understanding challenges and preconditions for development. The study included businesses from different sectors within the blue economy and the different sectors to some extent gave different responses to a number of questions. However, there were areas where the companies' responses pointed in largely the same direction, which indicates that there are areas where joint efforts can have effect across the blue economy. For example, many companies saw a need for land for relocation or expansion of their business and a many also saw a need for premises. The importance of this aspect becomes even greater when considering that access to land and premises is highlighted by the companies as decisive for the development of their businesses. Especially land in close proximity to access-points to land, was seen as important.

The study also pointed to that many of the maritime businesses experience that they are place/location dependant and that there is a high level of local cooperation with other businesses or other local actors. However, many experience that there are not sufficient meeting places with politicians and public actors to discuss important issues for business development such as access to quays, permit issues or infrastructure issues. Many of the companies also experience a challenge in finding skilled labour and must train staff themselves or change their businesses in different ways to meet this challenge. However, many still had an overall positive view on the future development of their businesses, which should be seen in light of the arriving corona pandemic, which started shortly after the interview study was finished. It affected the entire economy.

Mapping and analysis of maritime businesses' need for land and water areas

To further explore the spatial aspects of the maritime businesses in the pilot case area, the need for land and water areas and the potential for sharing space, a participatory GIS-study was conducted. The study focuses on what type of land or water areas that were most interesting for the businesses and also wanted to examine how the needs in different sectors in the blue economy differ, in order to nuance the understanding of spatial needs. The study was made through a survey and follow up interviews, and the maritime businesses themselves had the possibility to show which areas they use today and describe the need in a longer perspective.

Non-surprisingly the study confirmed the fact that proximity to the coast is seen as crucial. Almost all respondents need access to both land and water areas in the coastal zone for their own facilities. The coast is seen as important due to its "double" accessibility from land to sea and vice versa. Port areas and its infrastructure was highlighted as especially important. Access to land was emphasized more than access to sea areas.

An important perspective in the study was also to explore the potential for sharing space. Many of the companies mention that they already share space to some extent, mainly with non-competing operations. Businesses in the study primarily saw a potential in sharing land and water surfaces with other businesses within the same sector, but businesses within leisure and tourism and marine technology and production also saw a potential to share space with businesses in other sectors and to a larger extent with public interests such as recreation and fishing. Companies describe those obstacles for sharing space can be practical as well as financial (e.g. insurance costs) or legal (e.g. Swedish food act).

The study concluded that even if there are some important forums for cooperation amongst, for example, coastal municipalities and business to business. Many companies state that they already collaborate with other businesses and actors to a large extent. Instead, they call for a better dialogue with the municipality to find solutions for business development and land use.

Municipal stakeholder interaction

During the pilot case there have been interviews and workshops with municipal stakeholders. Mainly business developers at local level, but to some extent also planners. Here, some of the perspectives that the municipal stakeholders highlighted are accounted for.

The municipal stakeholders see a need to diversify knowledge on the blue economy. The blue economy consists of a range of different companies that often have very different preconditions. This is especially important to consider on the local level and the diverse perspective helps in finding the right type of initiatives to support different companies' development.

When looking at future potential within the blue economy, the municipalities themselves highlight innovations within maritime food production, coastal and maritime tourism as well as maritime operations. Many also point to the need for companies within the blue economy to answer to the global climate challenge. The municipalities however also point to a need to support the companies in issues on supply of competence as well as developing sufficient infrastructure, both digital infrastructure and systems such as water supply and purification of water. For, example, the water issue can be a limiting factor for establishments of aquaculture.

In discussions on potential for sharing space the municipalities point to the need for early dialogue to be able to identify which companies are interested in using the same areas, how do they want to use the area and how can they also share the cost for investments? The municipalities also realise a possibility to implement a goal-oriented planning and steer development to preferred areas. Can there, for example be synergies, in clustering companies within the same or similar sector. Also, the importance of land-sea access-points was highlighted by the municipalities.

Recommendations and lessons learned

With basis in the pilot case activities including stakeholder interactions and mapping of blue economy strategies, some conclusions can be drawn that can facilitate municipalities in integrating a blue economy perspective in planning and support the development of the local and regional blue economy. Planning for the blue economy can increase investor confidence by introducing both transparency and predictability.

The recommendations below also connect to the joint agreements between the municipalities from previous projects and can be seen as a step forward.

- Integrate a blue economy perspective, in early stages of planning e.g. in planning strategies. Put blue economy development as one important aim for planning and return to the aim during the entire process to clarify what it means and how this is being reflected in each key step. It can be feasible to also connect the aim with the blue economy's importance for local or regional employment and value creation. However, as an overarching perspective, the planning needs an ecosystem-based approach. Without functioning marine ecosystems, there is no blue economy.
- Involve business stakeholders in the planning process. The studies that were made within the pilot case gives an indication that business stakeholders are interested in participating and contributing with their knowledge. They can give local- or even place-specific perspectives and details on important challenges. Bear in mind, that especially smaller companies can have difficulties in putting in a large amount of time, so planning for involvement in key steps is crucial. Surveys are an effective way of gathering many views, but focus groups or interviews, with possibilities to pose follow-up questions, can be valuable to gather specific perspectives or being able to get a more in-depth view.
- Highlight challenges and trade-offs early on. Putting light on potential trade-offs as early as possible increases the possibilities to deal with these trade-offs and gives more time to explore consequences of different scenarios or pathways. Also include business stakeholders when discussing trade-offs to lay a foundation for joint understanding of the overall environmental and ecological preconditions and a view of how challenges are perceived.
- Sharing of space, will be crucial for future development of the blue economy. Especially, as the pilot case activities conclude, in coastal land areas where there is not only many interests competing but also sensitivity of ecosystems is high. Sharing of space is an important perspective for all levels of planning but the scope, likelihood and potential for co-location or sharing space can be explored more in detail when planning on a more detailed level. As the mapping study indicated, some sectors may be more prone than others to co-locate. This goes hand in hand with getting a better understanding of the overall spatial aspects of the blue economy. The pilot case used participatory-GIS to gather business stakeholders' own input on spatial aspects, and it gave a good overview, but everyone is not comfortable with maps. Preferably maps can be explored in exercises where planners and business stakeholders work together so knowledge from both sides can be included.
- Acknowledge the importance of ports, quays and other access point to land. These are key for all blue economy establishments and has been highlighted in every step of the pilot case as important nodes for land-sea interaction. These access points can function as nodes or hubs for blue economy development and are places where multifunction and the previous point on sharing of space is critical. These access points can also be of use as demonstration sites, see next point.

- Designate demonstration or test sites in planning. The access to demonstration sites and possibilities to test new innovations within blue economy is a precondition for development and for innovation to reach market readiness. Including sites for demonstration or testing in planning of coastal and marine areas can be a way of stimulating establishments and support innovation. Cooperation with research institutions can be a good way of setting criteria for designation areas as demonstration sites and shortening the way to the usage of sites.

Looking at the more overall preconditions for blue economic development on local and regional level, cooperation stands out as a key element during the pilot case. Cooperation between coastal municipalities with similar challenges as well as cooperation between businesses in the local context focusing for example on sharing of space, pooling resources and joining hands in innovation. Also, establishing arenas for cooperation between public actors and business actors is crucial to lower thresholds for dialogue and overall contact and understanding of each other's perspectives and mandate. Clustering businesses within the blue economy has been highlighted during the pilot case as good way of giving visibility to the potential of the maritime sector. Clustering companies in a strategic manner could also increase the municipality's attractiveness for new establishments.

Also, the issue of supply of skilled workers is an important challenge that also connects to the importance of collaboration. Western Sweden has many good examples where business sector, public sector and academia work together to face these types of issues. Within specific sectors as well as more generally within the blue economy.

Last but not least, the pilot case wants to highlight the difficulty with the absence of a common definition and clear delimitation of the blue economy. When aiming to map and understand the blue economy on the local and regional level, there is almost an element of inventing or developing an own definition that fits available data or data possible to gather. There of course have to be some level of adjustability, but the range of different ideas on what is included in the blue economy makes it difficult to both measure and focus support to.

Appendix

Case study Gothenburg Region, Sweden
 Draft for a Regional Maritime Strategy for the Gothenburg Region (Orust and Uddevalla) - - - - -
MATRIX blue economy strategies

Document/strategy	Level	Vision – long term	Goals/Targets/Focus areas	Business sectors included	Background (challenges)	Implementation challenges	Other aspects	Involved in process
The 2030 Agenda for Sustainable Development	United Nations/Global	<p>People, planet, prosperity and peace.</p> <p>A world free of poverty, hunger, disease where all life can thrive. Respect for human rights and human dignity, the rule of law, justice, equality and non-discrimination.</p> <p>Sustained, inclusive and sustainable economic growth and decent work for all. Where humanity lives in harmony with nature.</p>	<p>SDG:s Primarily Goal 14. Applicable.</p> <p>14.7. Target specifically aimed at increasing the economic benefits to Small Island developing States and least developed countries from the sustainable use of marine resources, including through sustainable management of fisheries, aquaculture and tourism. Also targets 14:6,</p> <p>The goals are integrated and indivisible. A range of the other associated targets are relevant to the blue growth perspective. (2.3, 7.2, 7.A, 8, 8.3-5, 8.9, 9.4, 9.5, 11.4, 12, 12.2, 12.7, 12.B, 13, 16.6, 16.7, 17.17)</p>	<p>Not explicitly stated but maritime sectors mentioned are:</p> <ul style="list-style-type: none"> • Sustainable tourism • Aquaculture • Small-scale fishing • Clean energy 	<p>Billions of people living in poverty. Eradicating it is the greatest global challenge and a requirement for sustainable development.</p> <p>Climate change. Inequalities within and between countries. Natural resource depletion and environmental degradation.</p> <p>Marine: Illegal, unreported and unregulated fishing remains one of the greatest threats.</p> <p>See also vision.</p>	<p>Global partnership necessary. Implementation of the Addis Ababa Action Agenda is critical for the realization of the Sustainable Development Goals and targets - a global framework for financing sustainable development. Mobilization of financial resources as well as capacity-building and the transfer of environmentally sound technologies to developing countries. Public finance plays a vital role as well as international financial institutions.</p>	<p>Communities of ocean action – works with implementation of Goal 14. Sustainable blue economy conferences organised.</p> <p>https://sustainabledevelopment.un.org/topics/oceanandseas</p>	<p>Signed by UN member states</p>
EU- Blue Growth strategy – previous COM/2012/0494	European Union	<p>To further harness (unlock) the potential of EU's oceans, seas and coasts.</p> <p>Jobs, value, sustainability.</p> <p>Contribute to EU2020 strategy for smart, sustainable and inclusive growth.</p>	<p>Develop sectors with high potential. (Basis "job creation potential"):</p> <ul style="list-style-type: none"> • Blue Energy (commercialization, innovation) • Aquaculture • Maritime, coastal and cruise tourism. (local or regional scale) • Marine mineral resources. • Blue biotechnology. <p>Provide knowledge, legal certainty and security in the blue economy eg. MSP, marine knowledge and maritime surveillance</p> <p>Sea Basin strategies.</p>	<p>Established: fisheries Transport shipbuilding and ship repair off shore energy.</p> <p>Emerging sectors: Ocean energy Coastal and marine tourism, Aquaculture Marine biotechnology Mineral resources.</p>	<p>Land and freshwater are finite resources. How can oceans deliver human necessities such as food and energy in a way that is more sustainable.</p> <p>Challenges to be met - Climate change - Financial crisis - Unemployment rates</p>	<p>Lack of access to finance and a shortage of suitably skilled workers blocking growth in nearly all economic sectors. Maritime clusters a solution. Lack of available maritime space for aquaculture activities, competition in the global market and administrative constraints in particular concerning licensing procedures. Tourism: Enabling infrastructures such as berthing capacity, port facilities and transport. Seasonality issue.</p> <p>Research and innovation a key.</p>	<p>Related initiatives: MSP-initiative and ICZM a part. Marine knowledge 2020. Marine surveillance (CISE). Marine strategy framework directive (MSFD) ecosystem based approach, good environmental status, Horizon 2020. FP7 Oceans of tomorrow.</p>	<p>EU member states.</p>
Baltic Sea Action Plan	Sea Basin level - Baltic Sea. By Helcom.	<p>A healthy Baltic Sea environment with diverse biological components functioning in balance, resulting in a good ecological status and supporting a wide range of sustainable economic and social activities.</p>	<p>Restore the good ecological status of the Baltic marine environment by 2021.</p> <ul style="list-style-type: none"> • Baltic Sea unaffected by eutrophication • Favorable status of Baltic Sea biodiversity • Baltic Sea undisturbed by hazardous substances <p>Environmentally friendly maritime activities.</p>	<p>No specific focus on blue growth development. Blue economy aspects rather relate to the environmental effects from shipping, offshore-industry and fisheries. Ecosystem based management promoted. Coastal fisheries acknowledged.</p>	<p>Degrading environmental status of Baltic sea such as eutrophication, algal growth. Declining biodiversity. Overfishing, pollution. Marine litter. Risks connected to shipping, pollution, litter etc.</p>	<p>The overall objective of the Baltic Sea Action Plan (BSAP) to reach good environmental status of the Baltic Sea by 2021 will most likely not be reached. Has shown promising results towards improving the state of the sea.</p> <p>See next column, a part of the work includes identifying why the goal has not been reached.</p>	<p>Adoption of updated action plan in the end of 2021.</p>	<p>Adopted by the HELCOM Contracting Parties.</p>

Case study Gothenburg Region, Sweden

Draft for a Regional Maritime Strategy for the Gothenburg Region (Orust and Uddevalla) - - - - -

<p>Swedish maritime strategy - For people, jobs and the environment. (2015)</p>	<p>National level</p>	<p>A competitive, innovative and sustainable maritime sector can contribute to increased employment, reduced environmental impact and an attractive living environment.</p>	<p>Six areas for action: - Healthy and safe marine environment. - Knowledge and innovation - Maritime spatial planning - Functional rules and efficient permit processes - International cooperation - Conditions for the business sector and industry-specific measures. (Rules and regulations, permits,)</p>	<p>- Transport (transfer from land to sea) - Maritime technology and production (demonstration) - The sea as a natural resource Marine food. (fisheries and aquaculture) - Leisure and tourism (product development) - Energy - Minerals and bioresources - Services (ship brokers, insurance companies, research activities etc)</p>	<p>Good conditions for maritime development. Long tradition of maritime activities. Sweden's maritime sector has good prospects for growth. But also increased pressure on our seas and coastal areas. Potential that is not realised. Need to have an integrated and holistic approach.</p>	<p>Balancing of interests. Sustainable use of resources. Active politics is necessary. Cooperation and strategic partnerships. Innovation and supply of competence. Clusters are important. Also sector specific challenges. Contains a structure for follow-up. Indicators for each target. SCB.</p>	<p>Seen as an instrument for an integrated maritime policy. Links to the Government's work on special strategies for export, re-industrialisation and foodstuffs.</p>	<p>Developed by the Ministry of Enterprise and Innovation in dialogue with other national authorities within relevant sectors.</p>
<p>Västra Götaland maritime strategy and action plan (2008, 2015)</p>	<p>Regional level</p>	<p>Western Sweden shall be one of Europe's leading maritime regions with solutions focused on innovation and environmentally compatible growth</p>	<p>Aim: Point out future areas for action. Horizontal goals: Retain competence and competitiveness Cooperation Triple helix Lobbying</p>	<p>Marine management Maritime operations and technology Marine foodstuff Marine tourism Marine energy (including bioenergy) Marine biotechnology</p>	<p>The maritime sector with its diversity of businesses is one of Västra Götalands areas of strength. A good ecological status of the ocean environment a precondition. Sustainability needs to be in focus. The transformation of the maritime sector where cooperation has been a key.</p>	<p>Yearly follow-up of action plan and integration in the regional development agenda. Connected to available funds to support cooperation projects. Creation of Maritime Clusters of Västra Götaland supporting gathering actorst within each sector and supporting with competence, research and innovation.</p>		<p>In dialogue with relevant sectors, universities and public actors.</p>
<p>Tillväxt Norra Bohuslän maritime strategy (2016-2021)</p>	<p>Local for four municipalities (adjacent to the pilot case area, north)</p>	<p>A maritime future for the north of Bohuslän. Basis for joint coastal zone plan. Create preconditions for a sustainable and robust development of maritime businesses, acknowledge the importance of the blue economy, local value-creation and valuing the marine resources as well as the historical and cultural marine heritage.</p>	<p>Goals for blue strategic/comprehensive planning. Blue growth is for us to develop our maritime businesses and thereby create jobs as well increased attractiveness in our archipelago communities. General: efficient decisions-making and exercise of authority in order to make it easier for companies to establish and develop sustainable activities. 3-4 goals per sector.</p>	<p>Marine foodstuff (fishing, aquaculture and processing) Coastal tourism Shipping and leisure boating Marine energy and research</p>	<p>We need to use our resources and meet challenges with the continued development of our blue economy business. At the same time, we need cannot sacrifice our attractiveness or the nature values at stake.</p>	<p>The strategy will provide guidelines in the work with blue strategic planning and will lead to a separate action plan with measures to realise the potential of the blue economy in the region. Cooperation with Region of Västra Götaland and the Maritime Clusters of Västra Götaland.</p>	<p>Developed together with a joint blue and strategic coastal plan.</p>	<p>Jointly developed by four municipalities</p>
<p>Uddevalla maritime strategy (2013) (Not member of GR)</p>	<p>Local</p>	<p>Maritime policy: Uddevalla municipality will work vigorously to become a maritime centre in western Sweden. Uddevalla municipality and its business community, work to make the most of the relation between land and water to create a maritime sustainable growth and development. In order to strengthen the conditions for successful development, decisions that</p>	<p>22 goas within 7 key areas. Some examples: - Develop accessibility to water. - Create efficient transport by water and road. - Develop a maritime terminal logistics center. - Invest further in recreational boat development, manufacturing and aftermarket</p>	<p>7 Key areas: Urban renewal and housing Infrastructure and transport Port and shipping Maritime businesses Skills supply and R&D Tourism and trade Environment</p>	<p>To make use of Uddevalla's proximity to the sea and develop the relationship between land and sea.</p>	<p>To some extent integrated in Uddevalla strategic plan: Uddevalla municipality has both 270 km of coastline. This should be cared for in order to preserve nature experiences and make outdoor life accessible, but at the same time be developed to create attractive living environments and provide conditions for a sustainable tourism industry. To enable permanent housing</p>	<p>Different sectors within the municipality involved.</p>	<p>Developed by Uddevalla municipality in dialogue with relevant actors.</p>

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		can influence a favourable maritime development need to be tested against the maritime policy key areas.				and protect the sensitive coastal environment, sewage solutions for the coast will continue to be developed.		
Orust (Not member of GR)	Local	The ambition is that it will be attractive, easy to establish, start, develop and run a businesses in Orust municipality. Ambition is to lay a foundation for a good business climate. The strategy must also clarifies what municipal efforts that are needed within the area of business policy.	10 overall goals focusing on communication, cooperation, strategic planning and effective municipal decision making. Also involves a sustainability perspective.	Not specific maritime focus but boat-building and leisure boating are mentioned as important areas.	The business community is characterized by both tradition and small-scale as well as renewal. There is a long tradition of leisure boating, boat building and sea with well-known companies. The number of companies in the municipality is high and many new companies are starting in the municipality. The tourism industry has grown and has developed strongly.	Organisation of implementation an political anchoring is described in the strategy.		Different sectors within the municipality involved.
Local business strategies (Main strategies developed jointly with all municipalities in the Gothenburg Region)	Gothenburg	Gothenburg is an international role model for the ability to collaborate - in an environment where people develop and thrive. The business community has full support from the city and can feel proud over operating in one of the world's most innovative metropolitan regions.	120 000 new jobs to 2035 Goal 1: Skills supply and attractiveness. Goal 2: Strategic planning Goal 3: Business climate and innovative power.	No specific maritime focus 7 strategic focus areas with connected strategic efforts: - Skills supply - Attractiveness - Infrastructure and accessibility - Ground preparedness and physical planning - Business climate - Innovation Several of the municipalities has used the same structure for their business strategies as Gothenburg, but made some adjustments to local context.	10 identified challenges. To secure skills supply Increase labour market participation, plan for growth, meet the climate challenge, strengthen both the labour market region and the core, strengthen the region's international position and accessibility, create a breeding ground for small and medium-sized companies, improving the business climate, strengthen resources in research and development, increase the productivity of the region.	Indicators with baseline description connected to each goal. Description of distribution of responsibilities. Comprehensive follow-up of goal fulfillment every fourth year and yearly overall follow up in responsible organisation's annual report.	Many different sectors within the municipality involved as well as business representatives.	
	Kungsbacka	Vison 2030 In Kungsbacka, the future is growing. Overall goals: The municipality is an enabler for entrepreneurs and enterprising people. In Kungsbacka, we get new jobs and rapid establishment for both individuals and companies through collaboration between business and education	Kungsbacka will have the best business climate in western Sweden. - Kungsbacka utilizes and attracts competence. - Kungsbacka is an attractive place to visit, live and work in - Well-functioning infrastructure and good accessibility - Well-functioning physical planning and land that enables companies to grow and new companies to establish. - In Kungsbacka, it is easy to start, run and develop companies - Kungsbacka has a development-oriented climate for innovations		The big challenge is to meet the business community's expansion and to maintain pace and continuity of the municipality's efforts. Special focus in the next few years will be on establishment issues, service in the exercise of authority and the supply of skills, as well as increasing the dialogue between entrepreneurs and the municipality.			
	Öckerö	Öckerö municipality is a regional role model for the ability to collaborate - in an environment	At least 900 new jobs to 2035		Similar description of challenges as Gothenburg, see above.	Description of responsible sectors for each strategy.		

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	where people develop and thrive. The business community has full support from the municipality and can feel pride in working in one of the world's most innovative metropolitan regions.	Goal 1: Skills supply and attractiveness. Goal 2: Strategic planning Goal 3: Business climate and innovative power.			
Tjörn	The municipality of Tjörn works actively for a business- oriented region. We believe in people's ability to create their own possibilities by realizing ideas, dreams and ambitions. Tjörn is a natural part of the dynamic Gothenburg region. Our unique values such as the sea and culture help to create an international role model and attraction for the region.	At least 1200 new jobs to 2035. Goal 1: Skills supply and attractiveness. Goal 2: Strategic planning Goal 3: Business climate and innovative power.	Öckerö lifts a specific focus on maritime businesses and tourism. For Tjörn, the sea is lifted in the vision as a unique value and the strategy describes the municipality having a unique historical connection to the sea, both in terms of food production and shipping. The tourism industry is also lifted as important.	Specific challenges for Tjörn include: infrastructure, sustainable and prolonged season for the tourism industry, geographical preconditions, supply of drinking water, permit issues for new maritime businesses, educational level, age demographics in the local work force.	
Kungälv (Not politically decided yet)	Kungälv municipality is a regional role model for the ability to collaborate - in an environment where people develop and thrive. The business community has full support from the municipality and can feel pride in working in one of the world's most innovative metropolitan regions.	At least 4200 new jobs to 2035 Goal 1: Skills supply and attractiveness. Goal 2: Strategic planning Goal 3: Business climate and innovative power.			Description of responsible sectors for different parts of the strategy.
Stenungsund	Does not yet have a developed business strategy or maritime strategy.				

Also important to note are sector strategies on Swedish national level such as:

- Joint strategy for Swedish fisheries and aquaculture (2021)
- The Swedish energy and climate plan (2020)
- Food strategy for Sweden (2016)

The project Land-Sea-Act (#R098 Land-Sea-Act Land-sea interactions advancing Blue Growth in Baltic Sea coastal areas) aims to bring together stakeholders involved in coastal management and planning, to find solutions to Maritime Spatial Planning and Blue Growth challenges around the Baltic Sea and to elaborate Multi-level Governance Agenda on Blue Growth and Spatial Planning in Baltic Sea Region. The project will guide national, regional and local authorities, as well as stakeholders of various sectors to:

- improve transnational cooperation and facilitate knowledge exchange to foster Blue Growth
- raise awareness, knowledge and skills to enhance Blue Growth initiatives and integrated development in coastal areas
- balance development of new sea uses with coastal community interests by improving coastal governance

Project implementation duration:	January 2019 – December 2021
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