Land Sea Act

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GÖTEBORGS REGIONEN

Maritime businesses' need for space at land and sea

Mapping and analysis of maritime businesses' need for land and water areas in the Gothenburg region, Orust and Uddevalla.

Interreg Baltic Sea Region
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The Gothenburg region's website is https://goteborgsregionen.se/projekt/2021-10-08-land-sea-act—den-regionala-bla-ekonomin. Here you can find information about the EU project Land-Sea-Act and coastal zone planning in the area. See also project webpage for Land-Sea-Act project https://land-sea.eu/

Information can also be obtained via the Gothenburg region's switchboard (031-335 500, gr@goteborgsregionen.se) and contact person for the project.

The Gothenburg region (GR) consists of 13 municipalities that have decided to work together. We run development projects, have authority assignments, conduct research, arrange education and are the voice of the metropolitan region in western Sweden, among many other things. In our networks, politicians and officials meet to exchange experiences, brainstorm ideas and make decisions about joint ventures. All in order for the region's one million inhabitants to have as good a life as possible.

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Summary

Findings from working within the EU Interreg Baltic Sea project Land-Sea-Act and the inter-municipal cooperation project for coastal zone planning in the Gothenburg region, Orust and Uddevalla confirms that conflicting interests meet in the borderland between land and sea. Representatives from the eight municipalities in the area have, among other things, identified the need for increased knowledge concerning maritime businesses' need for land and water areas as an input to the spatial planning process.

The aim of this survey is to deepen the understanding of the maritime businesses in the area, the differences between sectors, which location factors are decisive, and the companies estimated future needs concerning surface space. The purpose is to provide support to the municipalities' spatial planning and provide the right insights for continued work towards efficient and prudent land and water use.

The survey was conducted during three months in early 2021 in the form of targeted and open surveys and follow-up telephone interviews with selected companies. Altogether, 53 companies answered the survey questions, and telephone interviews were conducted with representatives from eight of these. The response data is too limited for general conclusions to be drawn, but the survey managed to achieve a spread across municipalities and sectors.

The companies have been divided into four overall sectors: *leisure and tourism, the sea as a natural resource, marine technology* and *production, and transport*.

Proximity to the coast is crucial for all sectors, and almost all respondents need access to both land and water areas in the coastal zone for their own facilities. The area needs differ to some degree based on the companies' sector affiliation, but there are also differences within the same sector depending on type of activity.
Regarding the future, company owned facilities on land are pointed out as the greatest need. This applies in particular to activities in the sector *the sea sector as a natural resource*. 50 percent of the answering companies wants to use public areas along the coast to a larger extent. This applies to all sectors and can be of importance considering coexistence with other interests along the coast.

Issues about collaboration and synergies between sectors and interests formed a significant part of the survey and the follow-up telephone interviews. Here, large differences were observed between the sectors, where activities in leisure and tourism, marine technology and production saw more opportunities for shared use of space than companies from the transport sector and sea as a natural resource. In-depth interviews show that in many cases this is due to security and legal barriers. The greatest potential for collaboration is between companies within the same sector, unless it is not a competing business.

Many companies also 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.

As a complement to the company survey, survey questions were also sent to representatives from the eight municipalities involved, to identify areas in the coastal zone with particularly high pressure of development. These designated areas formed

the basis for the selection of in-depth telephone interviews. The aim for this survey is for it to become a starting point for continued work where the maritime businesses' potential to contribute to a vibrant, accessible, and attractive coastal zone all year round can be fully realized.

1. Introduction

1.1 Background

The mapping and analysis of the maritime business community's demand for land in the Gothenburg region, Orust and Uddevalla takes place within the EU Interreg Baltic Sea project Land-Sea-Act (LSA) 2019-2021 (https://land-sea.eu/), in which the Gothenburg region is a partner.

The Gothenburg region's contribution to the project is generally about developing a basis for a sub-regional maritime business strategy for eight coastal municipalities, from Kungsbacka in the south to Uddevalla in the north. The basis for the work is an In-depth structural image for the coastal zone, which includes a map and six joint political agreements. This forms common basis for a long-term sustainable development of the coastal area (https://goteborgsregionen.se/kustzonen).

1.2 Interview study 2020

An interview study was conducted in early 2020 to examine the needs of the maritime business community in the region, see Appendix 1. 130 maritime companies in the region were interviewed with questions focusing on business collaborations, the need for land and facilities as well as competence within the working force. The companies represented different sectors within the maritime businesses such as food, transport, fishing and tourism. The results of the interview study indicates that several companies need more land for their continuous progress.

1.3 Objectives and purpose

In dialogue with participating municipalities, a need for better understanding of companies' land demands was revealed. This is necessary to better integrate the companies needs into ongoing and forthcoming comprehensive planning in the coastal and marine area. This study is primarily intended to examine how the needs in different sectors in the maritime businesses differ, in order to nuance the understanding of land needs. The aim of the survey is to give the municipalities an in-depth understanding of the maritime companies' needs and claims to land and water areas.

The main focus of the survey is thus to highlight differences between sectors in the maritime businesses in terms of land and water claims in the short and medium term (1-5 years). The purpose of the study is to help the municipalities in the handling of these claims in spatial planning in the coastal and sea areas.

1.4 Procedure

The different segments of the survey constitutes of collection, analysis, compilation, and reporting. The primary target group is the maritime businesses in the Gothenburg region. The secondary target group is municipal representatives in the eight municipalities. Data collection takes place via two digital surveys and in-depth interviews by telephone.

The target group maritime businesses is operationalized in the four sectors; *leisure and tourism, marine technology and production, the sea as a natural resource* and *transport*. The selection of activities is based on predefined SNI codes from Statistics Sweden's (Central Bureau of Statistics) business register based on the Swedish maritime strategy. Digital surveys of activities in the maritime businesses are distributed via one targeted and one open invitation. The targeted invitation is sent to companies based in the predefined SNI codes in the eight municipalities for which e-mail addresses are available. The open invitation, on the other hand, is spread via various forums and industry networks, and incoming responses are matched against the four sectors. Selection for telephone interviews was in turn based on the respondents in the survey.

Data is also collected from the eight municipalities via a survey for planners and business developers.

1.5 Disposition

The introduction is followed by Chapter 2, where planning conditions in the coastal zone are described in more detail. This is followed by a description of current land and water claims for activities in the survey in Chapter 3. Chapter 4 describes the future need for land and water areas for mapped activities. Chapter 5 analyses the future need based on other assumptions based on input from the municipalities. Chapter 6 describes the mapped activities' views on the joint use of areas and discusses the extent to which it can be a way forward. The report concludes in Chapter 7, with outlooks on further work.

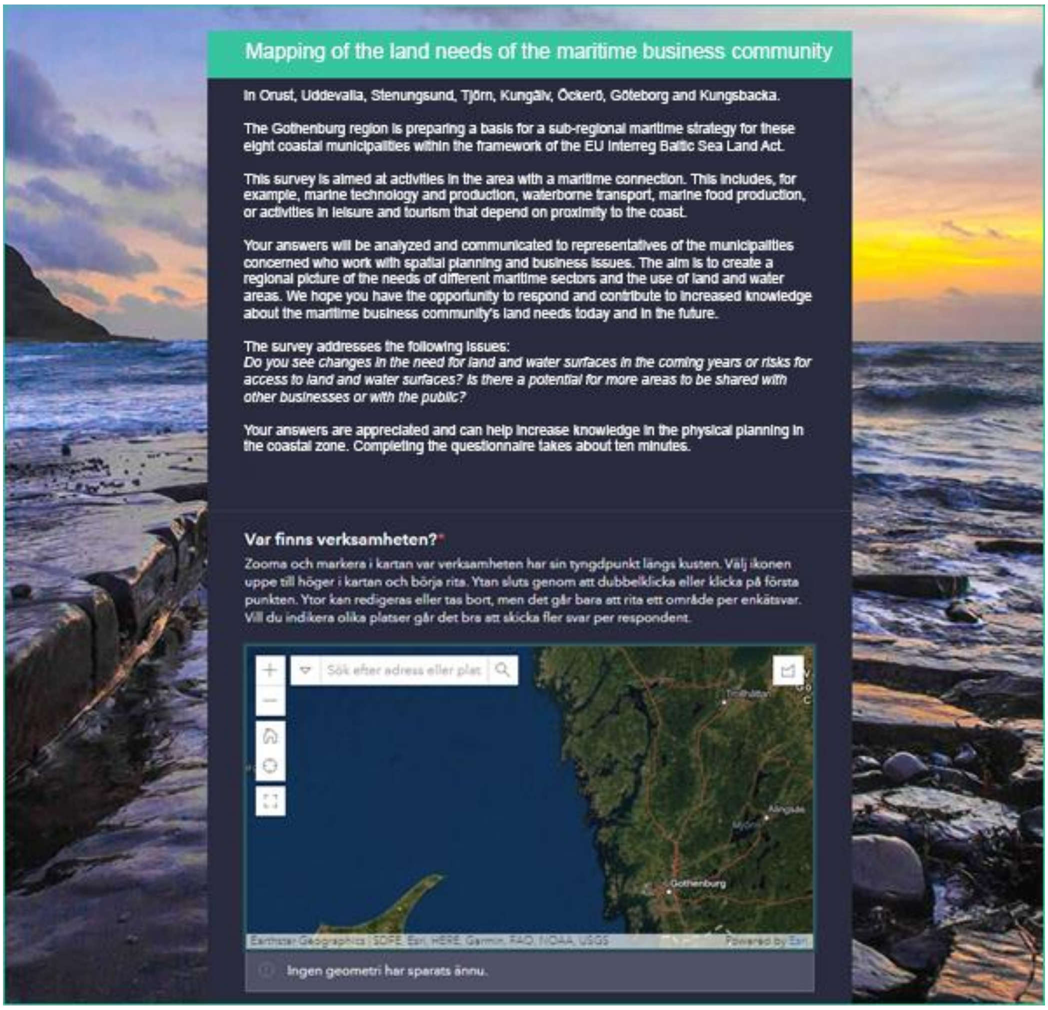

Figure 1. Screen-shot from the web survey, that was created in the tool Survey123 at the platform ArcGIS Online.

2. Conditions for planning the coastal zone

2.1 The planning and building act on comprehensive planning by the coast and sea

The section on comprehensive planning by the coast and sea, in the building and planning's handbook by the National Board of housing, Planning and Building (Boverket) states that the demands on the coastal and sea areas are increasing. This means that spatial planning in Sweden's coastal zones needs to take a holistic approach. The increased demands are both about the coastal zone's attractiveness for housing, business, recreation, and outdoor life as well as about an increased interest in usage of the coast and sea for fishing, shipping, energy production and more. According to the Planning and Building Act (Plan- och bygglagen), the coastal municipalities are responsible for the comprehensive planning both on land, along the coast and for the territorial sea. The Swedish Agency for Marine and Water Management (Havs- och vattenmyndigheten) is responsible for the national maritime spatial planning of the territorial sea and the economic zone.

2.2 National maritime spatial planning

The Swedish Agency for Marine and Water Management has, in accordance with the EU framework directive for maritime planning (2014/89/EU), developed maritime spatial plans for Sweden’s sea areas, Gulf of Bothnia, Baltic Sea and Skagerrak/Kattegat. The directive states that all member states must have maritime spatial plans ready by march 2021. The maritime spatial plan for Skagerrak/Kattegat includes the counties of Västra Götaland and Halland and the northern part of the county of Skåne. The plan shows how the sea should be used sustainably and efficiently, in both the short and long term. That is, how different interests should share the sea's resources and how they should be managed now and in the future. The maritime spatial plans shall provide guidance for authorities and municipalities in planning contexts, in permit matters and regarding management of the sea.

2.3 National interests

Most of the coastline in question is of national interest for commercial fishing (the Swedish Marine and Water Authority), with the exception of designated waterways of national interest for transport (Swedish Transport Administration). Outside the baseline, the national interest consists of catchment areas for crayfish, cod, etc., while the inner archipelago consists of spawning and rearing areas for cod. There are ports of national interest for commercial fishing at Ellös in Orust municipality, Rönnäng in Tjörn municipality, at three locations in Öckerö municipality and Fiskebäck and Donsö in the city of Gothenburg.

In addition to the port of Gothenburg, Wallhamn at Tjörn and the harbour of Uddevalla is of national interest for communication. Areas around the port of Gothenburg and the petroleum port in Stenungsund are also designated as national interests for industrial production. Of national interest are also the waterways that connect these ports with the outside world, as well as certain deep, protected anchor areas.

National interest in energy production in the form of offshore wind power does not occur along the current coastline, but potential production areas have been investigated outside the Swedish economic zone west of Tjörn and Orust.

The Swedish Armed Forces' national interests along this part of the coast consist mainly of two major naval exercise areas (west of Tjörn and Orust and west of Gothenburg's southern archipelago) and a smaller one (west of Öckerö). In addition, there are smaller areas of military interest on the coast in the municipalities of Uddevalla, Gothenburg and Kungsbacka.

All of the observed area is of national interest, according the Swedish Environmental Code (Miljöbalken) MB Chapter 4, Section 4, and described as highly exploited coast in the national landscape of the coast of Bohuslän. The County Administrative Board's value description, despite the fact that it was produced over 20 years ago, contains interesting appropriations for how development can take place at the same time as the area's unique values are secured.

National interest of outdoor life or recreation (Riksintresse friluftsliv, MB Chapter 3, Section 6) also covers the entire coastal zone in question, and consists mainly of the larger value areas of the Southern coast of Bohusläns, The Gothenburg archipelago, and Göta älv. The coastal zone in Kungsbacka is of national interest both according to MB Chapter 3, Section 6 and Chapter 4, Section 2.

There are also designated areas of national interest for cultural environmental protection in the coastal zone. The largest are Styrsö parish in Gothenburg's southern archipelago and the northwest archipelago of Orust, but there are also about 30 smaller designated national interest areas along the coast, which in this case may mean an even stronger need for protection.

2.4 The Gothenburg region's goals and in-depth Structural Illustration for the coastal zone.

The Gothenburg region's vision Sustainable growth[1] (Hållbar tillväxt, 2013) forms the basis for the member municipalities' joint development work to make the Gothenburg region a strong region of growth in Europe. The vision is focused on sustainable regional structure and focuses on buildings, green infrastructure and transport infrastructure issues.

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1 https://goteborgsregionen.se/download/18.65141e711547005cd8493b23/1462282531501/Sustainable%20Growth;%20Goals%20and%20Strategies.pdf

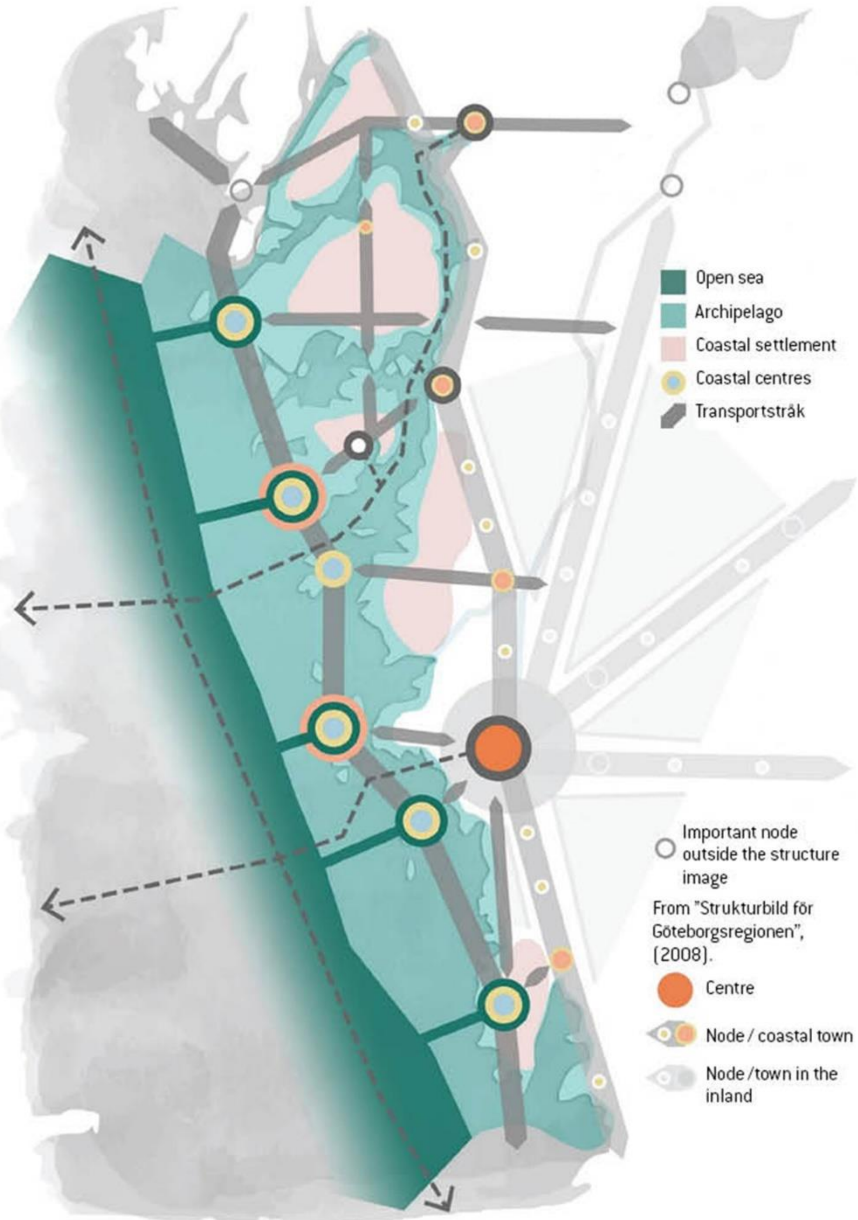

Figure 2. Map showing the deepening of the Gothenburg region's coastal zone, including Orust and Uddevalla.

While developing with the in-depth Structural Illustration[2], six agreements were made, that constitute support for the municipalities' spatial planning. The agreements set the framework for trade-offs and priorities and show the intentions that will form the basis for each municipality's spatial planning.

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[2] For background please read: https://goteborgsregionen.se/download/18.276a42981270147ed3580006332/1359469265417/Structural%20Illustration%20for%20the%20G%C3%B6teborg%20Region.pdf

Agreement 1: We agree that the character and identity of coastal communities and the coastal countryside should be safeguarded, by working for:

• To safeguard and make visible cultural values in the coastal zone, for example in the form of environments and remains linked to fishing, fish processing, shipyards and boat building.

• Coherent strategies for the management of valuable cultural environments with trade-offs between conservation and prudent development.

• To highlight stories about places, people and events in the coastal zone and create generation- and culture-crossing meeting places where local knowledge can be conveyed.

• To strengthen the attractiveness with a wide range of offers that arouse curiosity and attract visitors and residents with different backgrounds and in different age groups.

The establishment of coastal communities was based on the access to sea-based food and the sea as a transport route. This means that there is a great depth of time in the area with ancient remains all the way back to the stone age. Cultural monuments linked to the maritime business community are an integral part of the area's identity, where fishing villages, canneries, boathouses and warehouses, shipyards and boatyards, merchant houses and taverns are examples of identity carriers and landmarks. But the area's character and identity are not just based on cultural monuments. A continuation of the maritime business activities can be considered crucial for the coastal zone's character and identity to live on. The historical continuity promotes the readability and transmission of the cultural-historical values. For business development in the area, this may involve an investment in activities with a historical and maritime connection, especially in coastal communities and areas of national interest for cultural environmental protection.

Agreement 2: We agree to develop living communities where people can live and work all year round, by working for:

• Public transport that gives access to the coast all year round and development of mobility between coastal and archipelago communities.

• To facilitate and encourage permanent residents in coastal communities, for example through various forms of leasing and new solutions for holiday homes.

• That new homes and businesses are planned in proximity to existing buildings and in locations that enables sustainable mobility.

• A continuous range of public and private services, meeting places for local associations and cultural activities for both residents and visitors.

• A robust, efficient and well-functioning technical infrastructure across municipal boundaries, for example with cooperation on water supply and climate prevention measures.

This agreement largely relates to the need for jobs all year round. The leisure and tourism industry has long been important for employment in the area but is greatly dependent on the season. There is also a great demand for holiday homes in the area, which has pushed up real estate prices and made it more difficult to live on the coast. More people aged 16-65 who live on the coast - or have good conditions to travel efficiently and sustainably to workplaces on the coast - increase the attractiveness of business establishments on site and create foundations for business all year round. A well-developed digital infrastructure can also be a way for the municipalities to attract companies of different sizes with limited surface needs to establish themselves on the coast.

Agreement 3: We agree to invest in sustainable maritime businesses that contribute to value creation and employment in the coastal zone, by working for:

• Investment in designated ports and waterways and investment in energy-efficient solutions that can create the conditions for an increased share of seaborne traffic, both passengers and freight.

• Strengthened preparedness for the development of the tourism industry and activities with a maritime connection in coastal locations with good infrastructure connections and access to a competent workforce.

• Long-term sustainable fishing and aquaculture on the coast - including supporting businesses - with access to local landing sites and development of a marine circular economy.

• Technology development and pilot facilities in renewable energy production, marine biotechnology and sustainable food production, including aquaculture on land and at sea.

The agreement is specifically angled towards the maritime industry. Based on how closely intertwined the interests of the business community are with other aspects under agreements 1 and 2, it is almost superfluous. This agreement points should rather be read in relation to future agreements (especially 4 and 6) where the risk of conflicts of interest may arise. Ground and water preparation is a key issue in relation to this survey and aims at the municipalities' ability to contribute through strategic planning and dialogue with companies to give opportunity for establishment and expansion in the maritime business community, but also ensure that this development ends up in the right place. In many cases, this means co-locating compatible businesses - creating clusters where synergies can arise - both between companies and vis-à-vis other interests.

Agreement 4: We agree to create an accessible and attractive archipelago and coastal zone for local recreation, outdoor life and tourism, by working for:

• Improved connections to the coast for public transport and through the development of the infrastructure for walking and cycling.

• Increased accessibility in the coastal areas' natural environment, for example in the form of continuous and marked cycle paths, hiking trails and kayak trails.

• Good conditions for boating with an investment in specially designated, accessible marinas where service, infrastructure and storage solutions meet current and future needs.

• Minimum disturbances to outdoor life and the natural environment by designating special areas of consideration with, for example, restrictions regarding speed and noise.

• Support for initiatives that reduce littering of seas, beaches and sea bottoms, as well as to carry out regular beach cleaning and develop waste management along the coast.

• To identify and reduce spatial, economic and cultural barriers that may prevent different groups of people from experiencing the coast.

This agreement includes both possible conflicts and synergies with the maritime business community. The point concerning investing in designated ports for boating with particularly good conditions is highly relevant for many maritime businesses, and also facilitates for other points by concentrating buildings, services and employment in strategic nodes. From the other points, it can be deduced that there may be a conflict of interest between an attractive coastal zone where tourism and outdoor life takes place, and a vibrant business life where several sectors are represented in the area. But minor disturbances also mean that there is a threshold for the tourism industry where the negative impact risks becoming too great. There may be reasons why the scheme is "local recreation, outdoor life and tourism" and not the other way around.

Agreement 5: We agree to strengthen and safeguard coastal agriculture for food production and for the preservation of open landscapes, by working for:

• Improved connections to the coast for public transport and through the development of the infrastructure for walking and cycling.

• To safeguard arable land and minimize fragmentation in planning for new buildings and establishment of new infrastructure.

• Continuous management and use of pastures and arable land along the coast, which for instance could be done raising these interests in spatial planning.

• Combinations of active agriculture and other businesses that are based on existing infrastructure and the value of visitors in the historic, coastal agricultural landscape.

• To promote sustainable food production through the processing of raw materials with sales in a local market.

This agreement has more limited relevance to maritime businesses, but there are some connection points. This applies, for example, to local food production, where combinations of raw materials from agriculture, aquaculture and fishing can be crucial in creating local traction for food tourism. The coastal area also contains experiential value and cultural-historical significance, partly because the coastline in many parts of the area previously stood 25-30 meters above today's level.

There are also connections to ground readiness for operations or parts of operations that want to be located close to the coast, but which do not have to be located in a node or on the outer coast.

Agreement 6: We agree to use the sea and the coast in a long-term sustainable way that contributes to balanced ecosystems, by working for:

• Protection and mapping of specially designated species and biotopes such as eel-grass, mussel beds and beach meadows and to protect these during legal review and planning.

• To take blue and green infrastructure into account in municipal and regional planning and to prioritize measures that promote ecosystem services.

• To identify, take and follow up measures that contribute to achieving relevant environmental quality standards, for example through collaborations around catchment areas.

• To minimize the need for bottom dredging and reduce the negative environmental effects of dredging and subsequent handling of masses.

• Conservation and recovery of fish stocks as a valuable ecosystem function, for example through fish-free areas, restoration of watercourses or other measures.

This agreement highlights some of the most important protection interests, which in some cases risk being in conflict of interest with the business community, especially in the transport and marine sectors as a natural resource. Activities in leisure and tourism are, just like activities with the sea as a natural resource, dependent on an attractive natural environment and a balanced ecosystem. But for both, there may be local development and growth needs that weigh more heavily. This agreement will therefore be particularly important in an inter-municipal perspective, where local influence from separate activities must be seen in relation to the coastal zone as a whole.

According to “Marine strategy for the North Sea and the Baltic Sea”[3] (HaV, 2018), the strains that affect the Swedish sea the most are: “nutrients (nitrogen and phosphorus), hazardous substances, spatial disturbance of bottoms and extraction of species. This has negative consequences for the ecosystem services that the oceans provide to society.” An updated action program that recently has been referred states that fisheries and marine tourism are among the sectors that will benefit most from the achievement of environmental quality standards and the improvement of ecosystem services.

3 https://www.havochvatten.se/om-oss-kontakt-och-karriar/om-oss/remisser-fran-hav/remisser/2020-10-21-remiss-om-forslag-till-atgardsprogram-for-havsmiljon.html

3. Maritime businesses' need for space at land and at sea

Maritime businesses’ need land and water areas along the coast. This applies to activities in different sectors and in all studied municipalities. This chapter describes the mapped activities current land and water needs. Based on survey responses the differences between the various sectors and activities are discussed. The importance of the coastal zone as location has been studied in particular.

3.1 Maritime business activity is found along the entire studied coastline

There is maritime business activity along the entire coastline and in all municipalities. Companies with a larger number of employees are also geographically dispersed.

There are some businesses with many employees located in several different places and municipalities, mostly from the sectors *marine technology* and *production and leasure and tourism*. These have focused on the area where actual activities are conducted, rather than the business head office.

Every fourth activity in the survey is located in Gothenburg, which is expected given that it is the largest municipality in the region. Gothenburg is also the one municipality that has operations in all sectors. In Kungsbacka the sector *marine technology* and production is the single one represented, and in Stenungsund only the sector of *transport* is represented.

Every other company has one place of activity, and an equal proportion are spread over several municipalities or in different places within a municipality. Figure 3 below shows municipality affiliation of the mapped business within the maritime industry in the Gothenburg region.

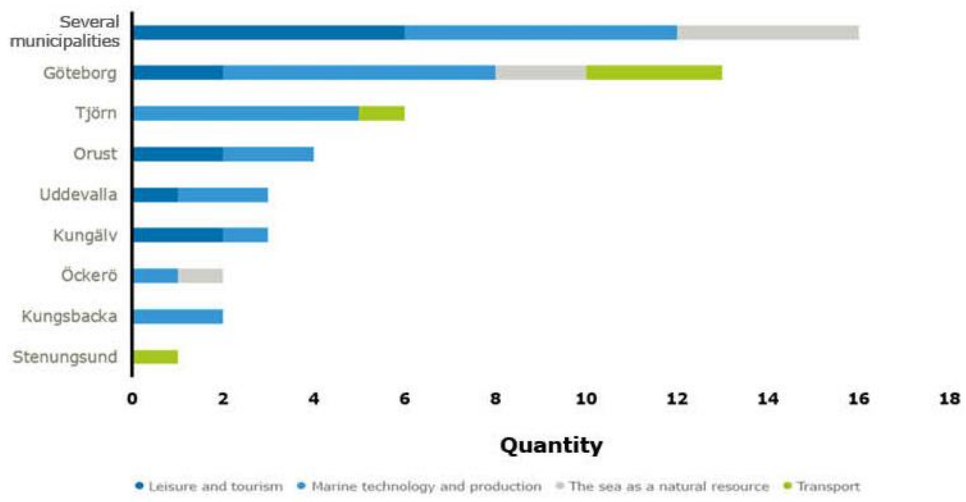


Figure 3. Location of activities, per municipality.

The map on the next page illustrates where the companies are located. The size of the circles corresponds to the number of employees in each company.

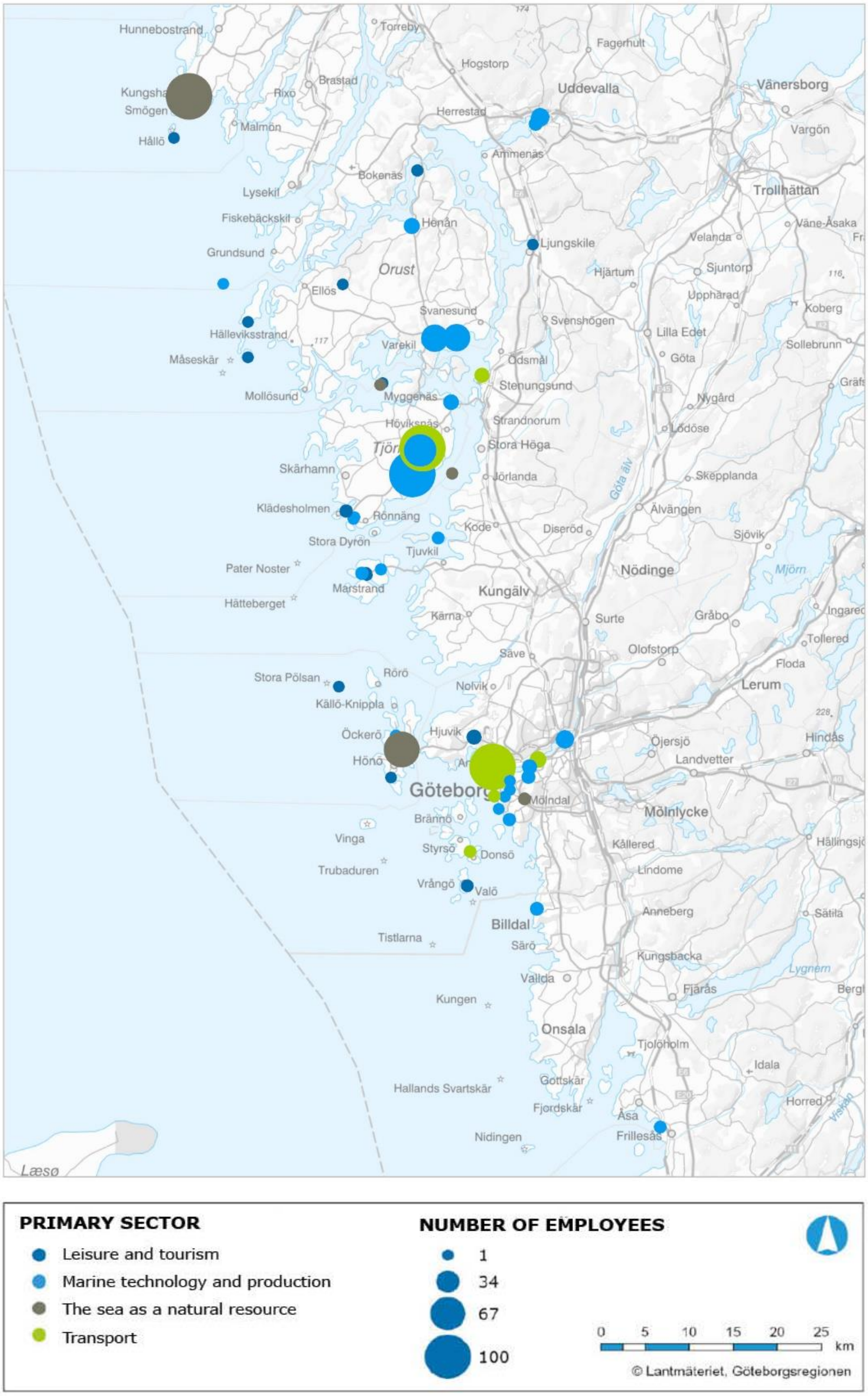


Figure 4. Location of activities.

3.2 Companies with few employees can also have big area needs

The companies' land and water needs are not linked to the size of the business in terms of number of employees. The survey shows, for example, that the majority of companies with only one employee have a surface need of more than 10 hectares. In the sectors of *transport* and *the sea as a natural resource*, there are several large companies in terms of employees, but the usage of land and water areas are limited.

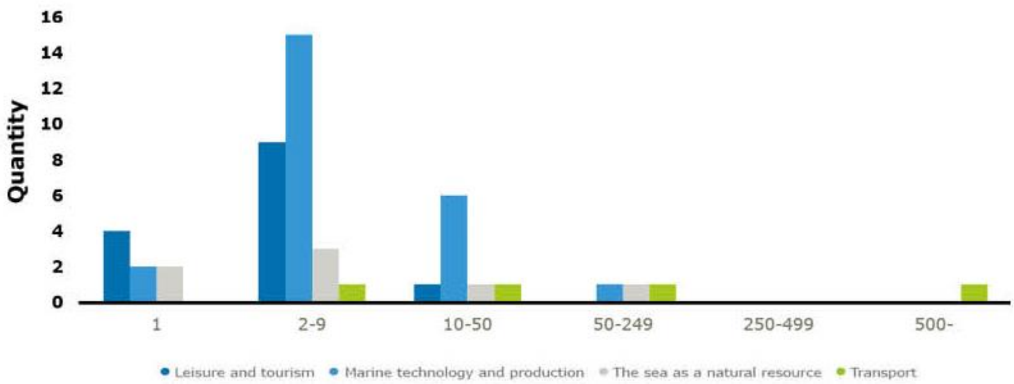


Figure 5. Number of employees, per sector.

Big differences also exist within sectors and are thus more related to the nature of the business than sector affiliation. For example, there are aquaculture farms with relatively surface-demanding facilities in the coastal zone, but with few employees who manage the facility, while processing can take place in smaller surface-demanding facilities with many employees. For transport operations - in this case mainly port facilities - there is a more linear relationship between the size of the facility and the number of employees. In the sector of *leisure and tourism*, there are differences, where certain functions such as small boat harbours/ marinas may need larger areas for a few employees, while other companies may have several employees on a very limited own area, which instead perform activities on public areas both at the coast and at sea.

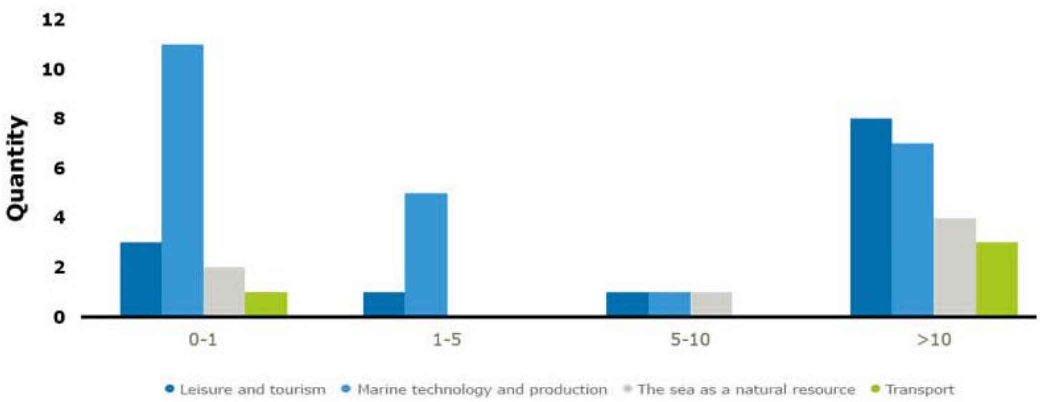


Figure 6. Surface requirements (ha), per sector.

3.3 Every other company has its own facilities on both land and water

Almost every company that answered the survey have their own facilities on land. A smaller proportion of the companies use public areas.

All mapped activities in *maritime businesses* have both land and water areas for their own facilities. A certain difference can be identified between the sectors *transport* and *the sea as a natural resource* where activities that consider themselves belonging to the latter sector mainly have their own facilities on land.

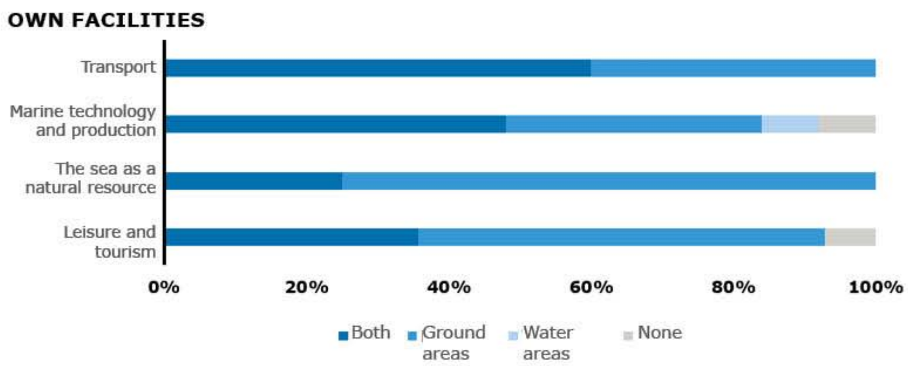


Figure 7. Mapped companies' own facilities, per sector.

3.4 The maritime industry's own facilities are located on the coast and in water area

Maritime businesses primarily need their own facilities on the coast. There are more companies that state need of land close to the coast than need of water in the same area. This applies both to their own facilities and to public areas.

Nine out of ten companies believe that their own land facilities need to be located close to the coast. The pattern is the same for activities in all sectors. A slightly higher proportion in the sector of *the sea as a natural resource* states that the activities do not require proximity to the coast.

A comparison between the survey results and the specified geographical areas shows that most companies that consider the coastline to be a decisive location factor have already found areas further inland - often with good logistics connections and in some proximity to the coast (<2 km).

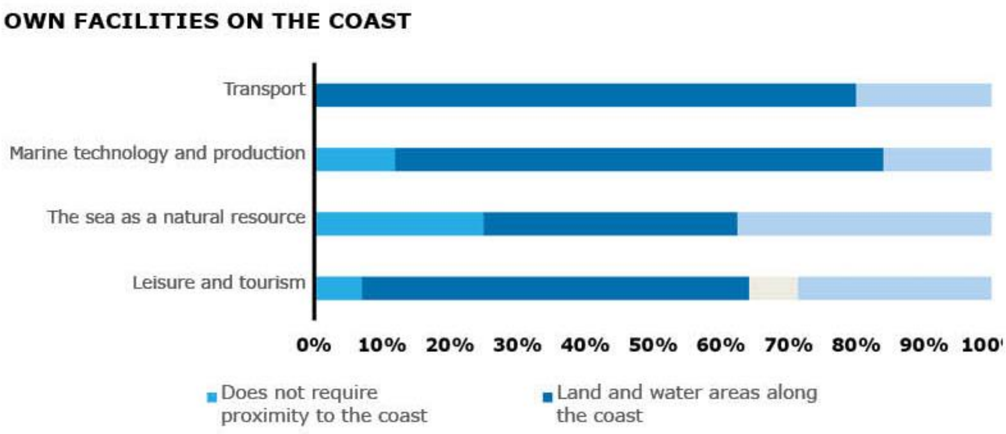
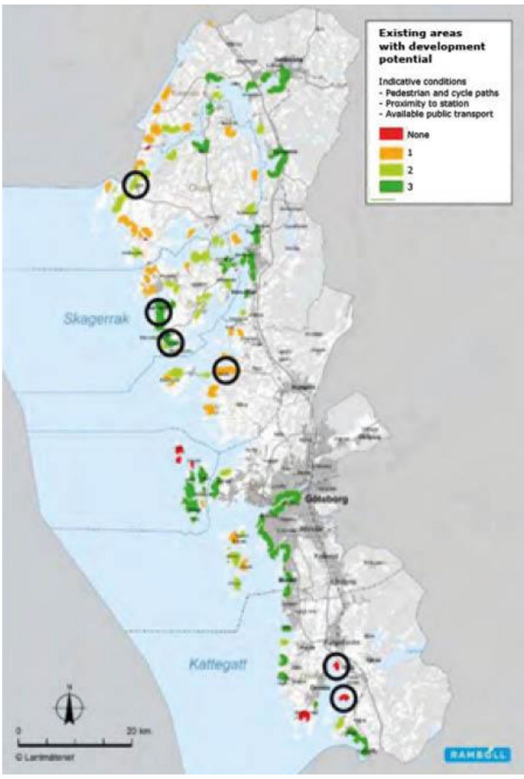
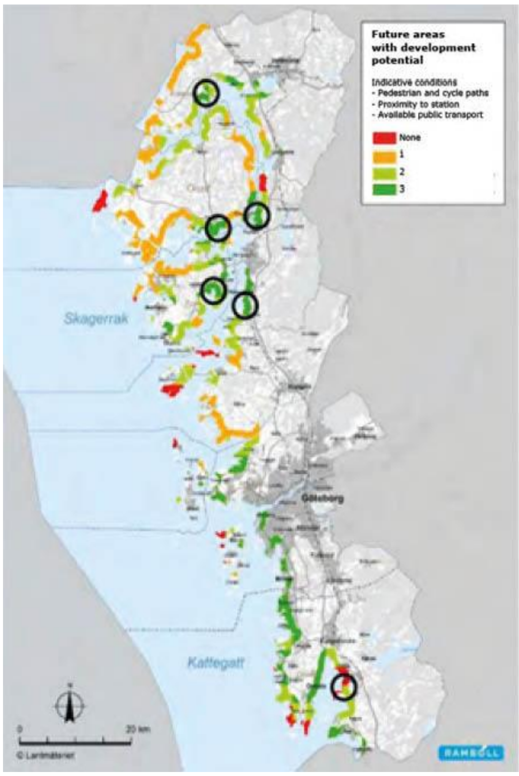


Figure 8. Coastal area requirements, per sector.

The question of the importance of the coast aims to examine the border zone between land and sea and how important the coastline itself is for the location of the companies. It is thus not a question of distinguishing between coast or inland, but rather identifying more fine-grained differences between the coastline and locations 1-2 km further out to sea or inland. The coast offers a "double" accessibility with nodes that are reached both via transport infrastructure on land and by boat via waterways. This accessibility is particularly important for activities in the sectors of transport and leisure and tourism.

In the collaborative project Inter-municipal coastal zone planning (where the same municipalities are included as in this survey), a background report was produced with the theme "Accessibility to the coast". In this work, GIS-based accessibility analyzes were used to map conditions along different parts of the studied coastline.





The mapping of areas with current potential for development was based on collected target points on the coast in the form of activities in the tourism industry and bathing areas and created a buffer of 1 km around these points. The accessibility of the points for pedestrians, cyclists and public transport passengers was then compared to identify which places could have development potential. The mapping of sites with future development potential is the inverted version of the coastline (without mapped target points within 1 km distance), weighed against the same accessibility indicators.

Parallels to this survey are primarily about localization factors for activities in the Leisure and tourism sector. But there may also be input to which parts of the coastal zone have poorer conditions, especially for visitors and for commuting with sustainable means of transport, where development must take place in relation to an expansion of transport infrastructure (and where there is less potential for synergies with other activities).

4. The future land and water need of the maritime business community

Maritime businesses in this survey see an increased need of area, especially for their own facilities at land. This applies to all sectors, and in particular *transport, marine technology and production* and *the sea as a natural resource*.

The time horizon studied is short and medium term (1-5 years). The current situation at the time for the survey (around the turn of the year 2020/2021) may have affected business prospects, especially in certain sectors. The proximity to the coast as a location factor is still in focus.

Subsequent chapters focus on the challenges of municipal planning and the efficiency of land use thanks to collaboration.

4.1 The greatest need – facilities on land

A survey of the companies increased future needs for land and water area show that the greatest need for own facilities is on land. This applies in particular to activities in the sector *the sea as a natural resource.*

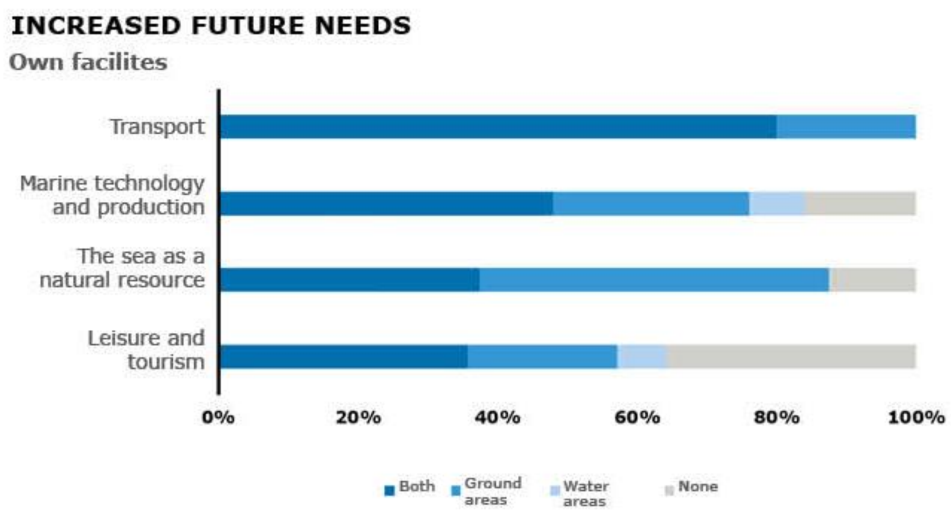


Figure 9. Companies' estimated future needs of own facilities, per sector.

Furthermore, several companies state that the lack of buildable land is an obstacle to growth. This since the location is often a prerequisite for the business.

4.2 Every other company wants to use more public areas along the coast

The survey results also show that many companies want to use more public areas along the coast. The diagram below shows that this applies to all sectors. With the help of this information, it is possible to identify possible future conflict of aims between different interests, both between different sectors and between public and private interests. Therefore, it is relevant to investigate the potential for joint use of land and water areas, which is described in the following chapters.

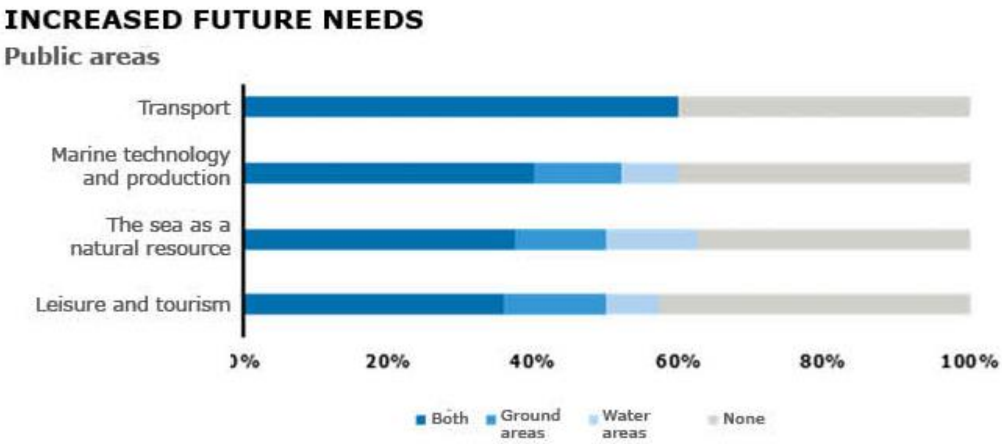


Figure 10. Operations that see an increased need for space, per sector.

5. Balances in municipal planning

An important goal of this mapping has been to give the municipalities an in-depth understanding of the maritime companies' needs for, and claims on, land and water areas, which further expands on the interview study from 2020. The mapping examines the different needs between sectors within the maritime industry, to nuance the picture of land needs.

The purpose of the assignment is to support the municipalities in the handling of these claims in spatial planning in coastal and sea areas. In order to understand important aspects in the planning or geographical areas in the spatial planning, a separate survey was carried out to planners and other officials in the eight municipalities.

Due to the pandemic and current recommendations in society during the project period, it was not possible to conduct a spatial workshop with municipal representatives. The short schedule also posed a challenge in terms of gathering representatives from municipalities for a joint online workshop. We therefore chose to also use a web-based survey to collect input from the municipalities. The method appendix contains more information about the questionnaire's questions, distribution and response.

The survey included both questions about the municipalities' knowledge concerning the needs of maritime businesses and the designation of geographical areas in the coastal zone with a particularly high concentration of different interests and development needs - both from business, the municipality and other actors.

From the survey respondents were chosen for an in-depth study in the form of telephone interviews. The survey also gave input to the interview questions.

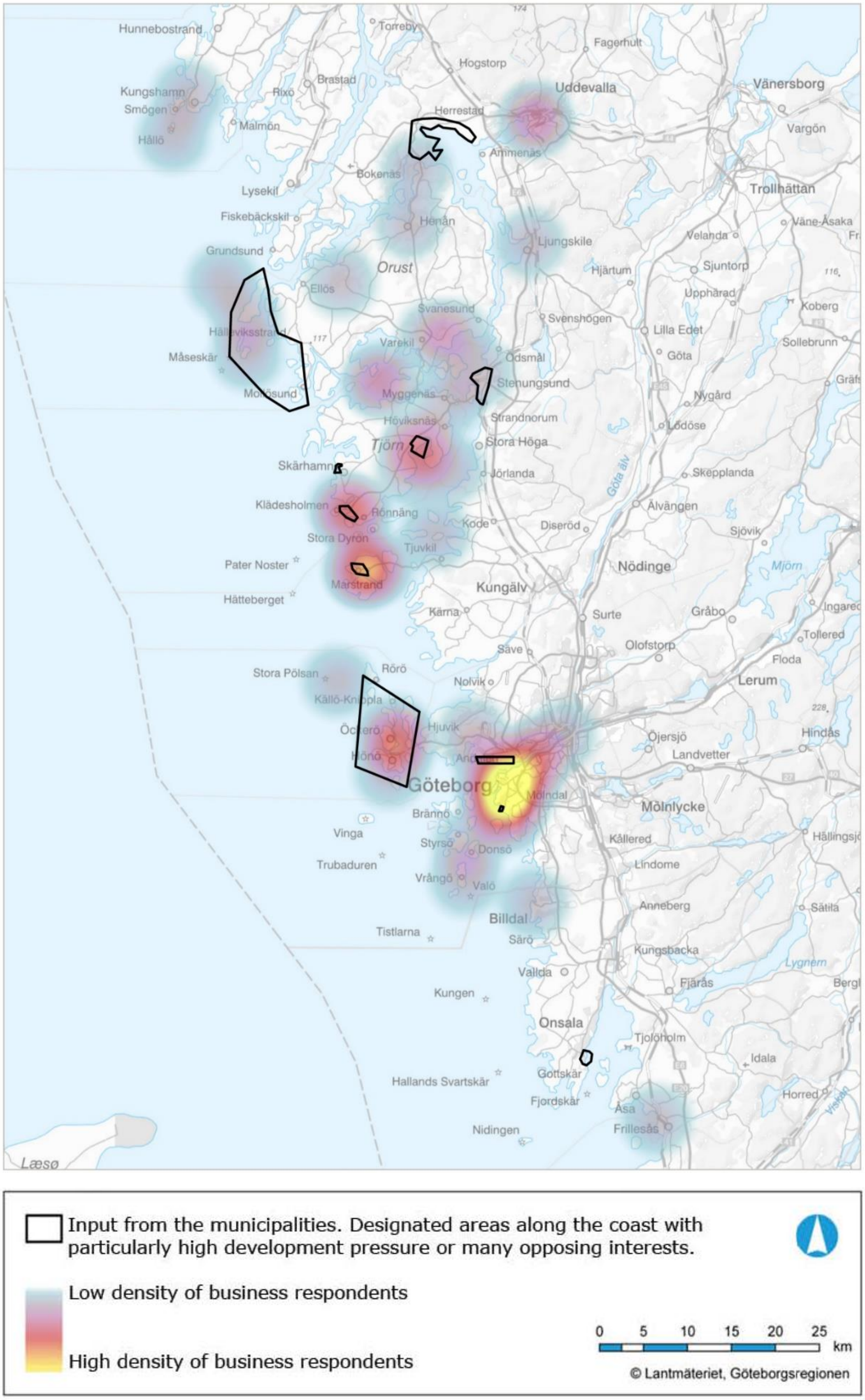
A comparison of the municipalities' designated areas and the emphasis of the received responses resulted in three identified locations for in-depth mapping. In these areas several companies from different sectors were clustered, at the same time as one or more municipalities pointed out the area as particularly interesting for business development.

Areas were also selected to represent different scenarios with special conditions, to shed light on the interests and challenges of the business community, concerning both general and specific aspects of the sites. The three selected areas/ site typologies were:

- Smaller node in the outer archipelago (represented by Marstrand and Rönnäng/ Klädesholmen)
- Coastal water areas with high nature values (represented by the Stigfjord and water areas between Tjörn, Stenungsund and Kungälv)
- Larger node by the coast/ regional center (represented by the city of Gothenburg, and in particular the coastline from Fiskhamnen to Fiskebäck)

In the municipal survey, the representatives were asked to describe the interests that existed within the designated areas (several areas per municipality could be pointed out), and to indicate the municipality's own view on the development in the area. In the telephone interviews, this was supplemented with the companies' descriptions of the significance of their location, as well as the obstacles or development opportunities that could exist in the current or other location. The representatives from the maritime businesses also had the opportunity to expand on previous answers concerning sharing the areas with other activities in their own sector, other sectors or with the public. These responses are described and analysed in a dedicated chapter on collaboration and shared use of areas.

Figure 10. Areas for in-depth mapping (dotted blue line) in relation to received survey responses.



The analysis of the telephone interviews has been divided into two main themes: The importance of the coast as a location factor for maritime activities, and Access to land and water areas for future needs. These are the headings for the description below, which also refers to the input of the municipal representatives where there are relevant points connection. The interviewed activities are identified by their sector and municipal affiliation.

5.1 The coastline offers unique location factors for many forms of activities

There is a strong interest and need across sectors and different parts of the area to locate maritime businesses in direct proximity to the coast - and if this for various reasons is not possible, as close as possible. There may be some differences between sectors, but these are best discussed in connection with the overall survey with more responses received. The in-depth survey shows that even within the same company there may be parts of the business that have different needs, where certain activities must be located at coastal locations while others have complex location needs, where proximity to the coast is less crucial.

At the coastal node Marstrand, several interviewed companies with interests in marine technology and production have pointed to the possibility of locating boat storage elsewhere. This applies in particular to smaller boats, which could be possible to transport by road. In some cases, there is already a need to move these parts of the business to neighbouring municipalities where the pressure on the coastal land is lower. Maritime activities with sales of services or products to the public obviously benefit from locations where there are many visitors, and this part of the company wants to be as close to the coast as possible.

The coast is also important due to the "double" accessibility, i.e., the location of the business can be reached by visitors and transport both by road and by water. Especially companies in the transport sector are bound to their current location by these conditions, but it is also crucial for *leisure and tourism* and can be important for businesses with *the sea as a natural resource* that processes and/ or distributes marine food. Important infrastructure in this case is not only waterways, ports and roads on land, but can also consist of pipelines, water, electricity, or waste management.

Several interviewed companies mention infrastructure at the ports as particularly important. This concerns berths to greater or lesser extent, but also ramps and, above all, cranes that can be used for launching and picking up boats. Many companies are already sharing the equipment available at ports, and further potential on this is discussed in more detail in the chapter on collaboration.

As mentioned, the coastal location is very important for maritime businesses in the leisure and tourism sector, but it has also been shown to offer opportunities for companies that primarily belong to other sectors to broaden their company. Examples are the rental of equipment or sales to visitors during the high season for tourism. It is also an interesting question whether the last year's changed activity and consumption patterns lead to a different demand for coastal experiences and accommodation from local visitors (which are in the area all year round), and how this can affect the supply.

Two of the interviewed company representatives – both companies in the *marine technology and production* sector in Gothenburg - have emphasized the importance of the waterfront location to be able to develop and test products in the environment where they are to be used. This does not mean that the entire company must be located on the coast, but in some proximity to the coast and have access to an efficient road connection, ramp/ crane for launching etc.

5.2 Operations from different sectors are experiencing a shortage of available land along the coast

The fact that several maritime businesses need access to more space was identified in the interview study from 2020 and confirmed by the overall survey described in the previous chapter. During the telephone interviews, questions were asked to get an in-depth understanding of this need, as well as what obstacles for growth the companies experience, both internal and external.

Several respondents cite the coastal zone's attractiveness and resulting high land prices as a challenge. This is especially true for the nodes Marstrand and Gothenburg, and is also mentioned in Stenungsund. The lack of space limits the opportunities for expansion, or results in a more dispersed business where more space-demanding activities are located elsewhere. A company in the sector *marine technology and production* at Marstrand states that they have been able to locate more space-demanding activities in neighbouring municipality of Tjörn. A company in the *transport* sector in Gothenburg (with strong connections to *leisure and tourism*) has established itself on one of the islands in the southern archipelago for real estate economic reasons, even though the business would benefit from a base on the mainland at Saltholmen.

The high development pressure and demand for land along the coast, and especially in the most attractive locations for maritime business development, is a central challenge in municipal planning. The fact that many companies have interests across municipal boundaries also points to the importance of coordination between municipalities in the matter. The locations that are relevant for maritime business development due to accessibility and technical infrastructure on the land side are also the places that offer the most attractive locations for other activities without a maritime connection. If we add proximity to the coast, the municipalities' most attractive locations for the establishment of homes and holiday houses will remain.

In several of the studied municipalities, a large proportion of the current population is concentrated along the coast. This means that municipal services need to be placed in proximity of the coast. This applies in particular to the island municipalities of Orust, Tjörn and Öckerö, where virtually all land is coastal and/ or protected from further exploitation. It also affects densely populated island communities in Kungälv and Gothenburg. In these cases, it is not always possible to reserve areas in coastal locations for maritime activities.

A prominent conflict of interest in the coastal zone, which is raised by both the business community and the municipalities, is trade-offs between business development on the one hand and conservation interests on the other. Several business representatives consider that the public's access to the coast (through beach protection) and protected nature (in the form of protected seagrass meadows, nature reserves etc.) weigh more heavily in municipal planning than companies' interests of expansion. Municipalities also highlight shoreline protection legislation as a limitation.

Some businesses also have a negative impact on the environment in the form of noise or emissions to air or water, while at the same time offering important job opportunities and stimulate other forms of activity. Finding a balance between business interests, nature conservation and the public's outdoor life in the coastal zone will probably require extensive cooperation across municipal boundaries and increased shared use of needed facilities and infrastructure.

The dialogue with the municipalities is in some cases perceived as deficient on the part of the business respondents. It is often considered hard to get responses to early stages of various development plans or proposals, and in cases where the municipality see the proposed development as unfeasible it is difficult to find alternative solutions. Some also state that they have received promises of solutions that have not been materialized since, and that unclear or conflicting messages in combination with long time horizons for the expansion of technical infrastructure make it difficult to plan for the future of the business.

Under the previous heading, activities in marine technology and production were mentioned, with a need for proximity to the coast for testing and development of products. During the interviews it was understood that locations further away from the coast also could be of interest, if there instead would proximity to transport infrastructure (E6) in combination with water (Göta River). One of the respondents saw a great potential to make better use of the riverbanks between Gothenburg and Kungälv.

The overall survey also shows that many businesses (60 percent of the respondents) want to use more of the public areas in the coastal zone. This applies to both land and water surfaces and could be an important issue for the municipalities to consider.

CHANGED LOCATION CONDITIONS:
Quarries on the coast and aquaculture on land

A number of old quarries and remains from stonemasonry can be found along the Bohus coast. This applies above all to the granite belt in northern Bohuslän, but also occurs further south, for example in several places along the coast around Västra Frölunda in Gothenburg (Rio Kulturkooperativ, 2008). Many of the companies were established at the turn of the last century, and the coast was a decisive location factor due to the transport opportunities offered by the sea. The production had its peak 1900-1920, and the stone was deposited mainly in Germany. In 1936, production was shut down. As more efficient road transport options arose and the coastal zone's attractiveness for other uses (including holiday homes and recreation) increased, the quarries moved further from the coast. The example is interesting because traces of this business activity remain along the coast today, but above all (at least in this context) to illustrate that crucial localization factors can change over time.

Another example of how conditions change over time that is more relevant today, is land-based aquaculture. Technological development and environmental requirements have over time contributed to the facilities located along the coast becoming more and more closed. Recirculating Aquaculture Systems (RAS) means that the cultivated water is reused, and therefore becomes much freer in terms of the facility's location. In Sweden, the technology is mainly used in hatcheries and on farms with oysters, perch, pikeperch, tilapia, eel and rainbow trout.[4]. Land-based cultivations are more independent of the local environment as the water can be taken from different sources, e.g. groundwater and is recycled to varying degrees to reduce water consumption[5]. In this survey, Land-based aquaculture has not been involved, but a large facility is planned in Sotenäs, just north of the studied area.

6. Potential for shared spaces

Chapters 3 and 4 describe the company's current and future needs for land and water areas. In Chapter 5, the picture is deepened on the basis of telephone interviews and input from the municipalities. It describes which factors have been decisive for the location of the operations on the coast, but also what obstacles or challenges the coastal location entails, especially concerning expansion and development of business.

Shared spaces between businesses or with other interests can be a solution to lack of space, or a way to streamline operations and reduce expenses. Both the survey and the follow-up telephone interviews show that there is a widespread cooperation between maritime businesses in the area already today. But there are differences between sectors, and how the different activities relate to other interests in the surroundings.

An important issue was to examine how companies and other actors view the conditions for sharing land near water. Is this already happening today? Is there potential for increased collaboration?

The question was included in the survey, with the possibility of distinguishing between shared use of own facilities or public areas. We also asked if there were different opportunities for space sharing within the sector in question, between different sectors and with the public. Finally, the respondents could describe what opportunities and challenges they see linked to the shared use of space in free text.

The following chapters the response collected via the survey is described. The overall analysis of the survey responses is then deepened with input from the telephone interviews.

The companies' response to the questionnaire on joint use is reported in the following matrix. The lines illustrate respondents from the maritime business sector's four overarching sectors. The columns show how companies view the possibilities for collaboration in their own sector, with other sectors and with selected public interests.

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[4]: Jordbruksverket, "Svenskt vattenbruk – webbportalen för Sveriges vattenbrukare", http://www.svensktvattenbruk.se/46/att-driva-vattenbruk/vattenbruksinriktning-och-teknik/landbaserat-vattenbruk.html (downloaded 2021-03-23).

[5] Länsstyrelsen i Västra Götaland (2020). "Vägledning för marint vattenbruk i Västra Götaland." https://www.lansstyrelsen.se/download/18.4a4eb7416faedec12529f83/1581595901802/2020-02.pdf

Sharing of land and water areas	Leisure and tour-ism	The sea as a natural resource	Marine technology and production	Transport	Moving outdoor life	Recreation by the coast	Private fishing or collection
Leisure and tourism	64%	57%	43%	36%	64%	50%	36%
The sea as a natural resource	0%	13%	0%	0%	0%	0%	0%
Marine technology and production	24%	32%	52%	28%	32%	28%	24%
Transport	20%	20%	20%	100%	20%	20%	20%

Figure 11. Matrix of estimated potential for shared spaces with companies in other (or within) sectors.

The matrix shows that operations primarily see opportunities to share land and water areas with other company in the same sector. Activities in *leisure and tourism* also see potential for sharing space with activities in other sectors. Activities in *nature as a natural resource* see the least opportunities for shared use. An estimation on what these differences may depend on will be described below, with reference to the telephone interviews.

The survey concretized sharing with "public interests" by listing three examples of common activities in the coastal zone. These were *moving outdoor life* (eg kayaking, hiking, boating), *recreation on the coast* (bathing places, diving, private moorings, holiday homes), and *private fishing or collection of natural resources*. The idea behind it was to investigate whether there were differences between more general interests, site-specific interests linked to the coast and interests along the coast that also involve the extraction of natural resources.

The expectation was that overall interests would be perceived as easier to get along with rather than the site-specific ones, which is confirmed by the response from two of the sectors - *leisure and tourism* and *marine technology and production*. In other sectors, no difference is shown between different public interests, but companies within *transport* are somewhat more positive for sharing (20% see opportunities). This can be compared to companies within *the sea as a natural resource* which according to received survey responses do not see opportunities for sharing with the public.

With the telephone interviews as source of data, the views of the sectors concerning joint use of their own facilities and public areas have been mapped. Several of the interviewed companies described cooperation being common in the current state, especially within sectors but also in defined geographical areas. At the same time, potential for increased collaboration is underlined. A number of limitations are also identified.

6.1 Sharing and collaboration between maritime businesses is widespread

Several respondents state that they collaborate with other actors and interests in the current state. This mainly applies to activities in *marine technology and production* as well as *leisure and tourism*. There are also signs of increasing collaboration in areas with high development pressure - in this case Marstrand and Gothenburg.

Collaborations between the maritime activities occur at different levels. Many people like to collaborate in their own sector - especially with companies that have a complementary business and are not in direct competition with their own business. Examples of this are larger machines such as cranes, which can be owned by one business and rented by several others in need of launching or picking up boats. Another example is renting berths from each other or sharing facilities on land to make land use more efficient.

Collaboration between activities across sectors also occurs in several cases, and is considered favourable, especially in areas that attract visitors and tourists. Examples of this can be renting larger ships for excursions and activities when needed (*"Not everyone can have large boats themselves"*) or being able to serve locally produced seafood to their guests.

Some respondents state that they share land or facilities with associations, but also point to challenges associated with this. It is stated that there is a cultural difference between companies and associations, which results in some frustration among the companies. The collision consists of the companies themselves experiencing a shortage of space at the same time as the associations' leased areas are used inefficiently and arrangements on the coast that affect the business take extensive time.

Several respondents mention another form of collaboration that is not linked to current land and water use. That is companies teaming up to approach the municipality with suggestions for development of the coastal zone. These groupings also give a forum for discussion about needs and how joint use can reduce additional surface claim, in an early stage of the planning process.

6.2 Practical, financial and legal obstacles to collaboration

Several of the companies state that collaboration between their own operations and other actors in the coastal zone already takes place to the extent possible. This is highlighted in particular by representatives from the sectors of *marine technology* *and production* and *transport*. Common to these sectors is that there are activities that involve risk or negative impact on people in the proximity.

Respondents within *marine technology and production* use heavy machinery, and to let the public move freely in the area is not considered desirable or possible. This is also presented as an insurance issue, where the company's premium costs increases if more of the area would be opened, which the municipality have been pushing for at some cases. Quays and bridges could be available for swimming or fishing at certain times though.

> *"The municipality wants rent fees but does not understand that insurance premiums go way up during collaboration - especially when the public is invited." - Activities in marine technology and production in the municipality of Kungälv.*

A restriction that applies to several companies in the sector the sea as a natural resource is the Food Act (Livsmedelslagen): *"Law-governed activities are not co-located. It is not possible to cooperate because we are so tightly controlled by regulations."* – company in the sector the sea as a natural resource in the municipality of Stenungsund. However, the companies see a difference between the processing operations on land and the production operations at sea, where the latter to a greater extent be combined with the public's ability to move around.

6.3 Many companies see potential of streamlining land use

The possibilities for increased shared use of space and facilities is considered great across sectors. Co-utilization for operations located in industrial areas already takes place to a large extent. However, there is a lower potential for sharing with the public.

Some respondents mention housing construction as an opportunity rather than a goal conflict. In these cases, the companies consider new residential areas both as potential for development of the local area and an increased customer base.

Companies belonging to sectors *marine technology and production* with marinas and winter storage, port with moorings and storage halls with service can be located at different places. The facilities still need to be located in some proximity, to not create inefficiencies.

In the same sector, some companies have considered placing storage further away from the coast. However, this applies only to small boats, as long-distance transportation of big boats is not considered possible.

The selection is limited, and the conditions for the companies are often site- and industry-specific, which makes overall conclusions difficult to draw. Many interviewed companies have, however, had boat service/ marinas and some major parables can be seen and thus more conclusions drawn.

7. Continued work

This chapter contains some input on how the survey can be put forward to benefit the process of spatial planning in the coastal zone. These inputs are based on needs and potential for increased shared use of land and water areas. To get there, concrete measures may be needed both at inter-municipal level, between municipalities and companies, as well as in groupings and forums for companies. These groupings should primarily be based on geographical affiliation, but there may also be relevant to discuss within industry associations.

7.1 Opportunities for increased collaboration between municipalities and activities in the coastal zone

COOPERATION BETWEEN COASTAL MUNICIPALITIES	COOPERATION BETWEEN COASTAL MUNICIPALITIES AND MARITIME BUSINESSES	COLLABORATION BETWEEN MARITIME BUSINESSES
• This is ongoing in several forums already, but to a lesser extent linked to maritime businesses. • Opportunity to jointly raise issues with other actors such as the County Administrative Board or authorities. • Discuss soil and water preparedness and investments in designated nodes with prerequisites for business development.	• According to respondents to the survey, dialogue is ongoing but the feedback is perceived as deficient. • It may be relevant to establish new forums to deal with challenges for maritime businesses or areas with many conflicting interests. • Investigate the possibility of influencing through more distinct leasing agreements for land and water in the coastal zone.	• Local associations of companies in certain geographical locations exists. • These forums can play an important role in identifying potential for shared use at an early stage in planning. • It is more difficult to identify synergies between activities that are scattered and outside company areas.

These points are based on input from surveys and interviews and constitute only a few examples of what collaboration on maritime business development could be. As mentioned, there are already many established forms of collaboration, but also shortcomings in cooperation and specific issues not dealt with in sufficient detail.

7.2 Increased knowledge of the needs of maritime businesses in the municipalities' spatial planning

Several nodes in the in-depth Structural Illustration for the coastal zone are particularly interesting for maritime business development. Improved ways of moving along the outer archipelago in a north-south direction would probably benefit companies in the area. Continued investigation should focus on identifying the unique conditions of various nodes, and what solutions may be relevant for connecting the nodes for tourism, commuting and transport of goods.

The municipalities land and water preparedness is crucial for directing development to the nodes or to other places with the possibility of infrastructure supply. The planning process should also include an analysis of what kind of activities that could collaborate and use joint areas, equipment, or labour. Clustering companies in a strategic manner could increase the municipality's attractiveness for new establishments. The municipalities' investigation should also examine other kinds of actors that could benefit from a co-location with maritime businesses, such as research or education.

The municipalities' potential for influence through land and water leases in the coastal zone has been mentioned by several respondents and is also highlighted as an interesting issue to further investigate.

7.3 In-depth and longitudinal studies of the maritime businesses' need for space

This survey was carried out during a limited period of time, and under the unusual circumstances of a global pandemic. This has probably affected the scope of responses received and how the companies perceive their future.

2020 was a year with extensive restrictions in society, this affected the business community, especially the tourism industry. This situation continued into the first part of 2021, and makes planning the business development more difficult, both in short and medium terms.

Several surveys have been carried out on how the business community is affected by the pandemic, which may have contributed to a survey fatigue among the respondents.

Many companies that responded, however, state that they see great potential in mapping the companies surface needs in the coastal zone, and that access to land and water is a current limiting factor. This resonates with the municipalities' response to the previously conducted interview study, where the need of increased knowledge about the maritime businesses' land and water needs was emphasized.

The diversity of sectors and geographical areas in the survey has made it possible to identify patterns and challenges in general. But we can also conclude that many needs and challenges are specific to certain areas or types of maritime activities. Continued work on these issues is best done at local level, within a municipality or in collaboration between neighbouring municipalities.

The major companies in the transport sector were not included in the in-depth part of this survey. This is due to resource prioritization and representativeness, but also to the fact that the interests of these actors already weigh heavily in the municipalities' spatial planning. This does not mean that there are no challenges and a need for in-depth knowledge. However, the scope and complexity of the issues require their own in-depth study, where strategic goals for industrial production and large-scale freight transportation are considered. An increased share of waterborne transport comes with environmental benefits, but new investments are not made without impact on other interests in the coastal zone. More and larger vessels also involve greater risks to the surroundings, in terms of transport of dangerous goods, impact on sensitive natural environments (for example when dredging ports and waterways), and possible conflicts with commercial fishing, water sports or small boat traffic.

It may also be interesting to make follow-up surveys, to see how the response change over time. A particularly interesting question to follow up, is what the development of collaboration and shared use of space looks like.

Good examples of collaboration between different businesses or between business and other interests can also be interesting to document in greater detail. This could be done in the form of case studies, to inspire new collaborations in other places along the coast.

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Appendix 1 – Method description

1. Geographical definition

The survey is targeting the coastal zone in the Gothenburg region, Orust and Uddevalla. This the municipalities of Kungsbacka, Gothenburg, Öckerö, Kungälv, Tjörn, Orust, Stenungsund and Uddevalla.

The first business survey was aimed at companies with registered offices in one of these eight municipalities. In the subsequent step, the survey was also distributed to companies within different networks without being filtered based on municipal affiliation. The delimitation was instead defined in a descriptive text in the survey.

Input was also received from companies based outside of this area, with interests within the affected coastal zone (also called "area of influence").

During the survey, two responses were received from companies that operate outside the studied area (one in Varberg and one in Sotenäs). These have been filtered out of the overall analysis but are accounted for in some maps as reference examples.

2. Reflections upon method

There were several aggravating conditions for the survey, which limits its validity. The challenges are partly due to the ability to identify and obtain information from the target group and partly due to the unpredictable conditions of the Covid19 pandemic.

The main challenge is the lack of data on the frame population. There is a lack of information on which companies that are part of the maritime business community. For those that can be identified on basis of industry affiliation via the Business Register, sufficient contact information is rare.

The survey of companies had an unusually low response rate. One possible explanation, mentioned by a few respondents, is survey fatigue due to several ongoing studies regarding the consequences of the pandemic.

A final challenge, which is also associated with the pandemic, concerns the companies' ability to comment on future surface needs. The questions in our survey are about future land needs within a limited time horizon (1-5 years). Businesses, especially in the tourism industry, received the survey in a situation where prediction of the future was especially difficult.

3. Survey to the maritime business community

An overall survey of the area needs of the maritime business community was carried out via a digital survey to companies in the above-mentioned eight coastal municipalities. A total of 53 responses were received. The survey was conducted at the turn of the year 2020/2021. The survey was developed and distributed via the tool Survey123, which is part of the ArcGis Online service from ESRI. The survey was distributed partly to a targeted sample, and partly through open dissemination via the Gothenburg region's website, municipalities, industry organizations and newsletters.

3.1 Selection

The selection of companies was made using SNI codes and address information (visitor or postal address). In total, the sample consisted of 962 unique companies within the eight municipalities divided between 52 SNI codes.

SNI codes were selected using the division of the national maritime strategy into maritime sectors as follows: *transport* (shipping companies, port and logistics companies), *marine technology and production* (technology, system and subcontractors, shipyards and the recreational boat industry), *the sea as a natural resource* (food, energy from waves, water and wind, substrates for biofuels, minerals, etc.), *leisure and tourism* (ferry traffic, cruises, archipelago tourism, recreational fishing, trade in recreational boats and marinas) and *service* (eg ship brokers, insurance companies, commercial surveying and research activities). The national maritime strategy has a follow-up model where Statistics Sweden, Central Bureau of Statistics collects data and statistics on companies based on this division and is based on the companies' SNI codes.

SNI – codes	Bransch	Sector
3111	Trawling in salt water	The sea as a natural resource
3119	Other saltwater fishing	The sea as a natural resource
3120	Sötvattenfiske	The sea as a natural resource
3220	Fiskodling i sötvatten	The sea as a natural resource
10200	Preparation and sustainability treatment of fish and shellfish and	The sea as a natural resource
46380	Wholesale of other foodstuffs, including fish and shellfish and molluscs	The sea as a natural resource
46491	Wholesale of sporting and leisure goods	The sea as a natural resource
47230	Specialized retail trade in fish, shellfish and molluscs	The sea as a natural resource
13922	Manufacture of tarpaulins, tents, sails, etc.	Marine technology and production
26300	Manufacture of communication equipment	Marine technology and production
28110	Manufacture of engines and turbines, except for aircraft and vehicles	Marine technology and production

30110	Construction of ships and floating equipment	Marine technology and production
30120	Construction of leisure boats	Marine technology and production
33150	Repair and maintenance of ships and boats	Marine technology and production
42910	Water construction	Marine technology and production
52220	Support services for maritime transport	Transport
50401	Regular maritime traffic on inland waterways of goods	Transport
50101	Regular maritime traffic across the sea and coast by passengers	Transport
50102	Non-regular sea traffic over sea and coast by passengers	Transport
50201	Regular sea traffic over sea and coast of goods	Transport
50202	Non-regular sea traffic over sea and coast of goods	Transport
50301	Regular maritime traffic on inland waterways by passengers	Transport
50302	Non-regular sea traffic on inland waterways by passengers	Transport
50402	Non-regular maritime traffic on inland waterways of goods	Transport
52241	Port cargo handling	Transport
52290	Other support services for transport	Transport
47643	Specialized retail trade in boats	Leisure and tourism
47915	Mail order and retail on the internet with sports and leisure equipment	Leisure and tourism
55101	Hotel business with restaurant business	Leisure and tourism
55102	Operation of conference facilities	Leisure and tourism
55103	Hotel business without restaurant business	Leisure and tourism
55201	Hostel activities	Leisure and tourism
55202	Holiday village activities etc.	Leisure and tourism
55300	Camping activities	Leisure and tourism
55900	Other accommodation activities	Leisure and tourism
56100	Restaurant business	Leisure and tourism
56300	Bar activities	Leisure and tourism

65120	Non-life insurance	Leisure and tourism
77210	Rental and leasing of leisure and sports equipment	Leisure and tourism
77340	Rental and leasing of ships and boats	Leisure and tourism
79110	Travel agency business	Leisure and tourism
79120	Travel arrangements	Leisure and tourism
79900	Tourist and booking service	Leisure and tourism
93111	Ski resorts	Leisure and tourism
93112	Golf clubs	Leisure and tourism
93114	Trotting and galloping tracks	Leisure and tourism
93119	Sports halls and other sports facilities	Leisure and tourism
93120	Sports clubs	Leisure and tourism
93130	Gym facilities	Leisure and tourism
93199	Other sports activities	Leisure and tourism
93290	Other leisure and entertainment activities	Leisure and tourism

Figure 1. Table over SNI – codes, companies and sectors.

One of the difficulties with using SNI codes is that not all companies are registered under the correct code. Another difficulty is that some areas do not have a clear SNI code. Regarding *leisure and tourism*, it is not possible to distinguish maritime tourism businesses from general ones, which is why this group has been difficult to call in. For *leisure and tourism*, there is also no exact definition of what the term includes and the area is fragmented. In addition, there are no SNI codes for activities within *service* and these have therefore not been identified in this survey.

Due to this, Statistics Sweden, Central Bureau of Statistics division into SNI codes for maritime sectors was supplemented with additional SNI codes for coastal tourism businesses to obtain a more representative sample. An analysis carried out within the framework of the Land Sea Act project by the project partner Hamburg Institute of International Economics (HWWI) for the NUTS area Western Sweden (SE23 Halland and Västra Götaland) shows that coastal tourism is the dominant sector in terms of jobs and accounts for almost 80 percent. In a previous interview study on the needs of the maritime business community in the Gothenburg region, Orust and Uddevalla, only 14% of participating companies belonged to the sector of Leisure and tourism.

Company information was purchased from a business register (Företagskontakt.se) and comprehensive postal and visiting address, SNI code, e-mail address and telephone number. Some addresses were also added from a register of maritime companies compiled by the Region Västra Götaland in 2018. However, there were only company names in the register, whereby email addresses had to be searched manually, which was very time-consuming. Therefore, it was not possible to go through the entire register.

3.2 Distribution

In the first phase, the questionnaire was sent out to the purchased company contacts. The mailing was done with the help of the service "Getanewsletter" which the Gothenburg region uses to send out newsletters. A first mailing was made on December 22, 2020 to the 982 business addresses. About 7 percent of the addresses bounced and around 30 percent of the recipients opened the email. A reminder was sent out on January 13, 2021. This time, too, just over 30 percent opened the email.

In the second phase, a more open distribution was made where the Gothenburg region prepared a news page with information and a link to the survey.

In the first instance, existing contacts within the municipalities were asked to further distribute the survey to maritime companies in the municipality, or to return with addresses to relevant companies. Some municipalities (Kungälv, Orust and Stenungsund) returned with a list of relevant contact information, while other municipalities chose to distribute the survey to the companies themselves. One of the municipalities did not return.

In addition, the survey was distributed through contact with Business Region Gothenburg, the Maritime Cluster, Kristineberg Marine Research and Innovation Center, Innovatum and the Fisheries Municipalities. Here too, the survey was spread in various ways, both directly via e-mail to contacts within their own networks and partly via social media, for example via Kristineberg's Facebook page. The Gothenburg region also shared information on its LinkedIn and Facebook page.

3.3 Survey questions

The survey contained about ten questions regarding current and future area needs as well as potential for shared use of space. Questions were also asked about the size of the business and whether they were interested in participating in an in-depth survey. All questionnaire questions are shown in the table below.

Question	Alternative	Type
Where is the activity located?	Draw into map.	Polygone in shp-shape.
How geographically dispersed is the activity?	Gathered in one place; In more places within a municipality; Spread over several municipalities	Single choice
What areas does the business use today?	Own facilities: On land; On water; Both; No Public areas: On land; On water; Both; No	Single choice
What areas will the business need in the future?	Own facilities: More space on land; More space on water; Both; No Public areas: More space on land; More space on water; Both; No	Single choice

How important is the connection to the coast?	Own facilities: The areas of operation on land must be located on the coast; The water areas of the company must be on the coast; Both must lie on the coast; Does not require proximity to the coast Public areas: The areas of operation on land must be on the coast; The water areas of the company must be on the coast; Both must lie on the coast; Does not require proximity to the coast	Single choice
Which sector does the activity/ company belong to?	The sea as a natural resource (eg fishing, fish farming, trade / preparation of seafood); Marine technology and production (eg boat builder, repair, maintenance, equipment); Transport (of goods and passengers, including ports and support services); Leisure and tourism (maritime hospitality industry, eg accommodation, rental, experiences); Other (describe)	Multiple choice
What other interests may be in the same place?	Activities with the sea as a natural resource: Surfaces on land can be shared; Surfaces on water can be shared; Both can be shared; No areas can be shared Activities in marine technology and production: Areas on land can be shared; areas on water can be shared; Both can be shared; No areas can be shared Activities in transport: Areas on land can be shared; Areas on water can be shared; Both can be shared; No areas can be shared Leisure and tourism activities: Land areas can be shared; Areas on water can be shared; Both can be shared; No areas can be shared Moving outdoor life (eg kayaking, hiking, boating): Areas on land can be shared; Areas on water can be shared; Both can be shared; No areas can be shared Coastal recreation (bathing areas, diving, private moorings, holiday homes): Land areas can be shared; Areas on water can be shared; Both can be shared; No areas can be shared Private fishing or collection of raw materials: Areas on land can be shared; Areas on water can be shared; Both can be shared; No areas can be shared	Matrix with one row per sector. One-choice question for the alternatives per sector. Non-mandatory question, which meant that respondents could choose to answer no, some or all lines.
Feel free to develop in what way other interests relate to the business	Open answer	Text box, optional
Seasonal variations	Spring (March-May); Summer (June-August); Autumn (September-November); Winter (December-February); The whole year	Multiple choice
Name of the company/ organisation	Open answer	Text box, 255 characters
Brief description of the business	Open answer	Text box, 1000 characters

Number of employees	Open answer	Number box
Follow up	Yes, by phone; Yes, by mail, Yes, both; no thanks	Single choice
Telephone number	(for "Yes, on the phone" or "Yes, both")	Number box
Email address	(at "Yes, by mail" or "Yes, both")	Text box

3.4 Response rate

The survey resulted in a total of 53 responses, of which 34 from the targeted and 19 from the open distribution. Responses were received from companies in all sectors. Most responses came from companies in *marine technology and production* (corresponding to about 50 percent). *Transport* was the sector with the least number of respondents. The distribution between sectors is similar to that which emerges from national statistics from 2015, which are the latest available statistics. However, the national statistics do not have the same sample as this survey, which was also discussed in 1.1. A more in-depth drop-out analysis is difficult partly by the lack of information on the entire population, and partly by the fact that the survey was distributed openly.

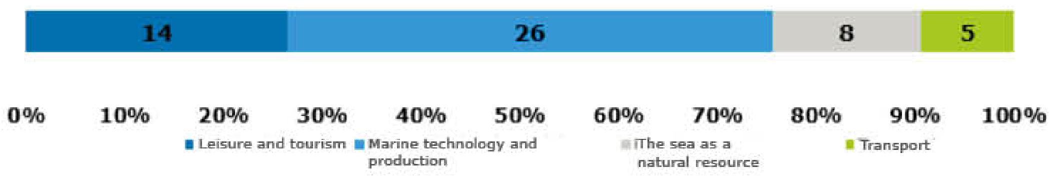

Figure 2. Respondents per sector.

Companies in all eight municipalities have responded to the survey. The largest number of responses was received from operations in Gothenburg (13) and the smallest number from Stenungsund (1). The areas of influence of the companies differed in size and were found along the entire coastline, see Figure 2.

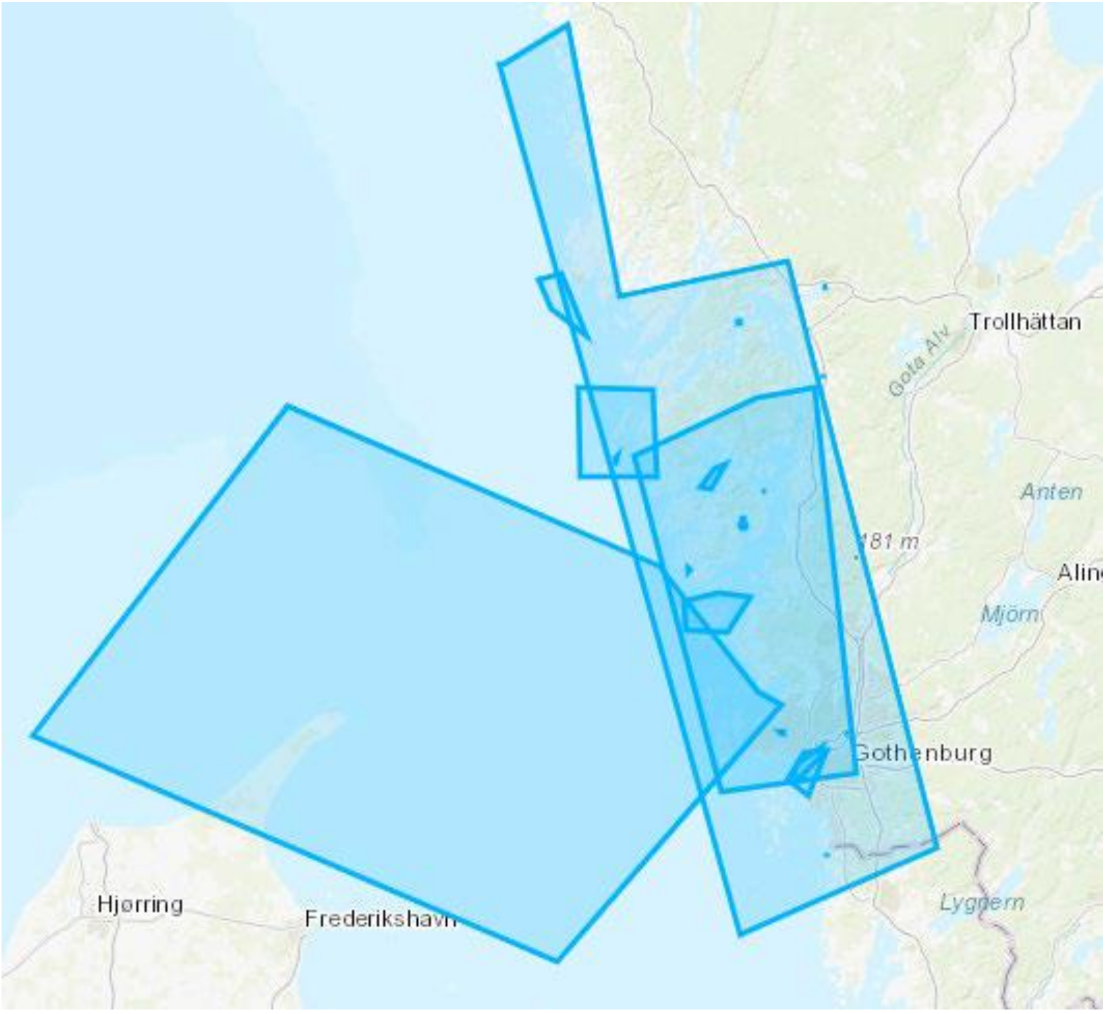

Figure 3. Map of designated “areas of influence” for maritime activities.

4. Survey to the municipalities

This questionnaire was also developed and distributed in Survey123 to give the respondents an opportunity to point out geographical areas and to link challenges and issues concerning maritime business development in relation to other interests in these areas.

8 out of 8 municipalities responded. Six municipalities pointed out an area and thus contributed with a post. One municipality sent in 2 areas / posts and one municipality senit in 3 areas. A total of 11 areas along the coast were mapped with particularly high development pressure or challenges linked to maritime business development.

The questionnaire was sent with the following introduction: “This questionnaire is aimed to representatives from the municipalities' comprehensive planning and business offices. The purpose is to identify areas with particularly high development pressure, areas at the coastal zone where activities or the municipality's comprehensive planning want another use, or other "hotspots" where several different interests meet within a limited area. We hope you have the opportunity to respond and contribute to the survey.”.

Each area was accompanied by mandatory questions about current planning challenges and a description of the municipality's view of the area's development.

In addition, a non-compulsory question about the municipalities' knowledge of different sectors in the maritime business sector was included. The question was based on the same four overarching categories that were used in the business survey, with the answering options "Very good knowledge", "Fairly good knowledge" or "Limited knowledge". Due to an even distribution of level of knowledge between municipalities and across sectors, as well as a relatively large degree of subjectivity in the assessment, this analysis has not been reported in the main report, but an overview of the response is presented in Figure 3.

Figure 4. Summary of the municipal representatives 'answers to questions about knowledge of maritime businesses' challenges and needs.

5. In depth mapping – telephone interviews

5.1 Selection

The primary purpose of conducting follow-up interviews was to ask in-depth questions about the potential and obstacles to joint use of land and water areas along the coast. A selection of companies needed to be done. To get a good representation of different sized companies, sector affiliation and geography.

Respondents were asked if they were available for follow-up questions by email or telephone. Those who answered no were not included in the sample for the in-depth study. We also filtered out companies with only 1 employee (where several employees can be interpreted as an indicator of a more established and site-specific business) and companies with 100 employees or more (as an indicator of particularly established businesses whose interests are already reflected in spatial planning). We also disregarded the activities that are not located on the coast today, as the specialization primarily focuses on the coastal zone (where there is a particularly large pressure of interests).

After filtering there were still around 40 respondents left. Therefore, a reconciliation was also made with the municipalities' designated areas to identify possible overlap. This was found at Marstrand, with a designated area with great development pressure and several questionnaire responses within the same area - the same applies to Klädesholmen/ Rönnäng on the island of Tjörn. In Gothenburg, there are also overlapping survey results that concern the municipality's designated areas.

In Öckerö, the entire municipality had pointed out, which made an in-depth analysis linked to the municipality's challenges more difficult. There were also only three very small and scattered companies in the survey. In Uddevalla and Kungsbacka, there was no overlap between the municipality's designated areas and the companies from the survey. In Stenungsund, there was some overlap in the harbour.

To be able to investigate different challenges based on the conditions of the site, the following prioritized geographical divisions were chosen as a starting point for the in-depth study and the final selection:

- Smaller node on the coast with particularly high development pressure and many overlapping interests within a limited area (Marstrand, with Rönnäng / Klädesholmen as a possible supplement).

- Area with special nature/ protection interests and several overlapping activities (Stigfjorden - with both "Leisure & tourism" and "The sea as a natural resource" that represented sectors, at each end of the spectrum for shared use potential. Possible addition from Hakefjorden / Askeröfjorden, including Stenungsund).

- Larger node on the coast, with connection to a larger environment both on land and at sea (Gothenburg, especially the coast from Långedrag to Fiskebäck.)

Within each area of specialization, a spread between different sectors was sought. Interviews were conducted with 4 companies from Gothenburg, 4 from Marstrand and 3 from Stigfjorden and Hakefjorden.

5.2 Questions

Question	Sub-question
Where is the business situated?	
How important is the current location for the business?	
Is your location a prerequisite or a limitation for the business?	
What obstacles / opportunities do you see connected to shared use?	In own sector With activities from other sectors With the public

5.3 Response rate

Interviews were conducted with 8 of 9 initially designated companies. The most difficult was the contact with companies in the sector of "The sea sector as a natural resource", where one candidate did not answer, and the reserve candidate had very limited time for the interview. For the other respondents, the response was good, and many saw a great need for these issues to be raised and discussed by the municipalities and the Gothenburg region.