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A. Kannen, B. Ratter, V. Schick, K. Gee und M. Döring

Risk Perception in the Wadden Sea Region – a survey in Denmark, Germany and the Netherlands

(Institute of Coastal Research)

HELMHOLTZ-ZENTRUM GEESTHACHT



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Max-Planck-Straße 1
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41 pages with 38 figures

Abstract:

Risk Perception in the Wadden Sea Region - a survey in Denmark, Germany and the Netherlands

This report presents the outcome of the online survey, which was conducted by HZG from mid-June to mid-September 2017 among members of the Wadden Sea Forum and the public at large living and working in all three countries in the Wadden Sea Region. The survey was conducted in Danish, German and Dutch language. 350 questionnaires from survey participants in the Denmark, Germany and the Netherlands have been received and were included in the analysis. Even though the survey cannot be regarded as statistically representative, its results point to important aspects requiring recognition by policy makers and refer to collaborative action to be taken at trilateral, national and subnational level.

Zusammenfassung:

Risikoperzeption in der Wattenmeer-region - eine Bevölkerungsumfrage in Dänemark, Deutschland und den Niederlanden

Dieser Bericht präsentiert die Ergebnisse einer durch das Helmholtz-Zentrum Geesthacht (HZG) zwischen Mitte Juni und Mitte September 2017 unter Mitgliedern des trilateralen Wattenmeerforums und der breiteren Öffentlichkeit durchgeführten Online-Umfrage. Die Umfrage wurde in dänischer, deutscher und niederländischer Sprache durchgeführt. 350 Online-Fragebögen wurden von Teilnehmern aus Dänemark, Deutschland und den Niederlanden ausgefüllt und gingen in die Auswertung ein. Obwohl nicht statistisch repräsentativ, verweisen die Ergebnisse auf wichtige Aspekte, die im Management der Wattenmeerregion aufgegriffen werden sollten und eine umfassende Zusammenarbeit auf trilateraler, nationaler und regionaler Ebene erfordern.

Key Messages

A non-representative online survey was conducted by HZG from mid-June to mid-September 2017 among members of the Wadden Sea Forum and the public at large living and working in the trilateral Wadden Sea Region. 350 questionnaires from survey participants in the Denmark, Germany and the Netherlands have been received and included in the analysis.

Main messages asking for action at **trilateral, national and/or subnational** level are:

- 60% of Danish, only about 40% of German and less than 40% of respondents from the Netherlands connect to the **transnational nature** of the Wadden Sea Region;
- Respondents from Denmark and the Netherlands mainly characterise the Wadden Sea Region as an **area for economic activity** while German survey respondents agree only moderately to this statement;
- As main **resources** for future development **landscape and nature, the sea** and the **healthy climate** are identified;
- Main **threats** in view of the survey participants are **climate change** and its related effects, **conflicts on spatial use, political and planning interventions** as well as **an ageing society and outmigration of young people**. A large majority of the respondents in all three countries clearly do not consider immigration as a risk for the region;
- In the view of survey participants, **none of the (potential) threats contained in the survey is currently addressed well**. On a scale from 0 (not addressed at all) to 10 (addressed very well) the mean values are nearly all below 5. Only one (addressing climate change effects) receives a mean value slightly above 6 by the respondents from the Netherlands;
- Increasing **waste in the sea, nutrients and contaminants** as well as the **loss of biodiversity** are seen as a **high or very high risk for the sea** by the majority of respondents in all three countries. Only the majority of the German respondents view **human activities in the sea** in general and **overfishing** in particular as a high or very high risk. Impacts from **offshore wind farms** are mainly recognised as a **medium to low risk** in all three countries with a slightly higher sensitivity in the Netherlands;

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1 Introduction

This report describes the main results of an online survey on how people living in the Wadden Sea Region characterise their region, what they regard as resources for development of the area and what they recognise as threats that expose risks to the future development of the area.

The survey was set up by the Institute of Coastal Research of the Helmholtz-Zentrum Geesthacht (HZG) in order to capture views and risk perception of people living and working in the Wadden Sea areas of Germany, the Netherlands and Denmark. It had been accessible online from mid-July to mid-September 2017.

The survey provides a non-representative snapshot of views and assessments from 350 respondents in total. Despite not being statistically representative, in particular in demographic terms and number of responses, it points to aspects relevant for risk management and policy development regarding the Wadden Sea Region, be it at trilateral, national or regional level.

2 Approach and Sample

The online survey was developed and analysed using the software QuestionPro (Professional version). It had been distributed to members of the trilateral Wadden Sea Forum for further distribution of the survey link in the Wadden Sea community, members of the Advisory Board of the National Park “Schleswig-Holsteinisches Wattenmeer” in Germany and also via personal and/or professional networks of proponents. In addition it was directly accessible from the website of the trilateral Wadden Sea Forum. Respondents are anonymous and no replies can be traced back to particular individuals.

In order to provide the survey in the Danish, German and Dutch language, it had been technically set up as three surveys (one in each language), but using the same rationale and questionnaire. A special thanks goes to Anne Krag Svendsen and Meindert Schroor who translated the questionnaire into Danish and Dutch. Due to this effort, data can also be analysed and compared on a country-by country basis.

The survey consisted of twelve questions on the Wadden Sea Region (some for free text entries, some for multiple choice, some for ratings on pre-defined scales) and seven personal questions providing sociometric information, mainly used for statistical reasons and not included in the present analysis. Questionnaires were taken into account for analysis when at least one of the twelve questions concerning the Wadden Sea had been answered.

From Denmark 52 responses (60% men, 40% women), of which 47 questionnaires were fully completed, with 42% of respondents holding a university degree. The average age of respondents from Denmark is 56 with the youngest being 27 and the oldest 77.

For Germany 185 responses (59% men, 41% women) were received, of which 155 fully completed the survey by answering all questions. 45% of respondents hold a university degree (including “Fachhochschule”). The average age of respondents is 48 with the youngest respondent being 17 and the oldest 79.

From the Netherlands 113 responses were received (78% men, 21% women, 1% other), of which 91 questionnaires were fully completed, with 43% of respondents holding some form of a university degree. The average age of respondents is 51 with the youngest respondent being 21 and the oldest 77.

Generally, the approach inherently includes a bias in the sample because distribution depended on how and to whom proponents distributed the link to the questionnaire, or who came across the survey on the website of the Wadden Sea Forum. However, the number of responses from each of the countries roughly mirrors the size of the area in the Wadden Sea Region covered by each of the countries, with Germany having the largest share of the area and Denmark the smallest.

3 How respondents connect to the Wadden Sea Region

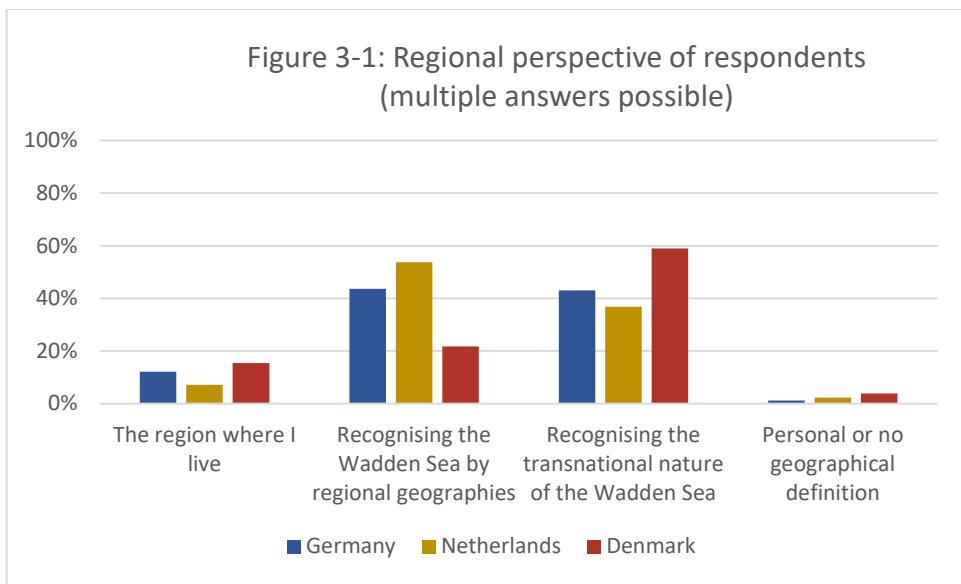
A first set of questions in the questionnaire aimed to address the geographical perception of the Wadden Sea Region by survey respondents and their individual connection with the region. This is described in chapters 3.1 (focusing on the geographical perspectives), 3.2 (personal connections), 3.3 (the region as a natural area), 3.4 (the region as an economic area) and 3.5 (characterisation of people living in the Wadden Sea area).

3.1 Regional perspectives

To identify what characterises the Wadden Sea region geographically in the view of respondents, they were asked to which degree they subscribe to a pre-defined set of spatial notions or descriptions of the term Wadden Sea Region in their home language. Explicitly they were allowed to provide multiple answers.

Specific answers offered in the survey had been “The region where I live” or “a transboundary area encompassing parts of the Netherlands, Germany and Denmark” as well as several local to national categories, which were different for the respondents from each of the countries.

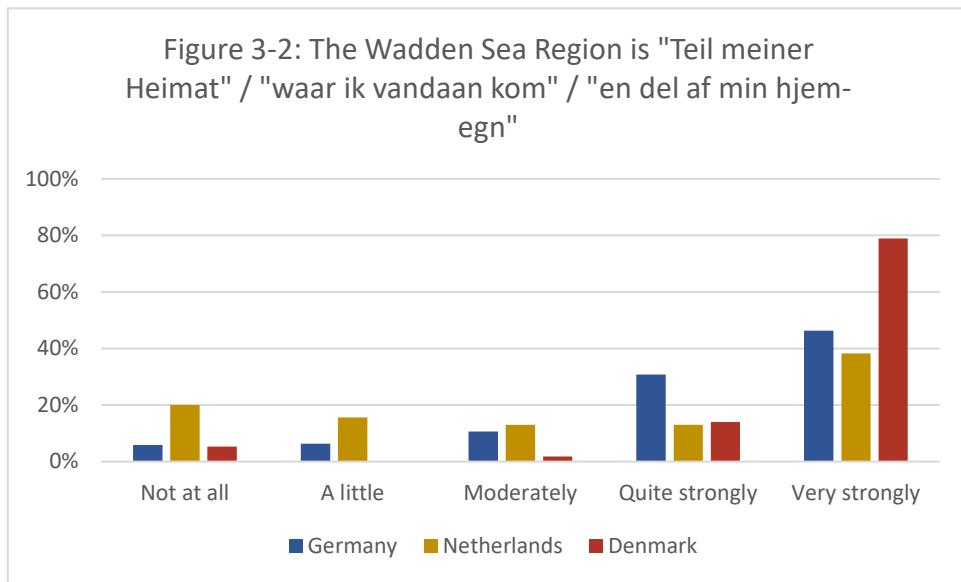
As figure 3-1 shows, most respondents focused in their answers to the geographical categories and less to the notion “The region where I live”, but they show a distinction between country specific regional delineations and the transnational definition. In Germany and the Netherlands the larger part of respondents focused more on regional definitions than the transboundary component while among Danish respondents nearly 60% defined the Wadden Sea Region as a transboundary area. One explanation could be that the Danish part of the Wadden Sea is comparatively small in extension and rather close to the German border compared to other Danish coastal areas. This may foster a transboundary perception. However, given the opportunity to tick multiple options, and the distribution of the survey through people involved in the Trilateral Wadden Sea Forum, the recognition of the transnational or transboundary nature of the region appears to be rather low in Germany and the Netherlands.



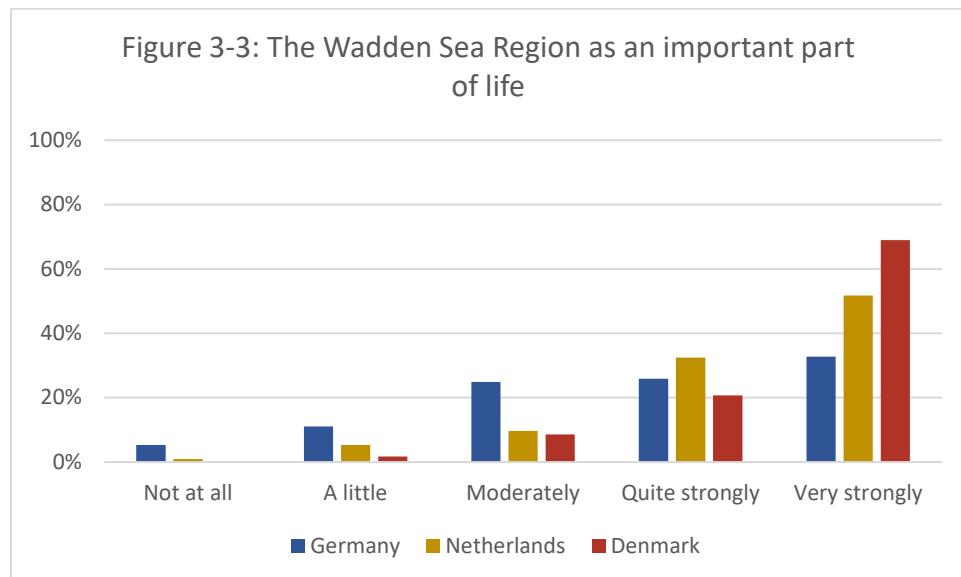
3.2 Personal connections to the Wadden Sea Region

In this set of questions, survey participants were asked to which degree they agree on particular statements (e.g. “The Wadden Sea Region is an important part of my life”) with five options provided ranging from “do not agree at all” to “agree very strongly”.

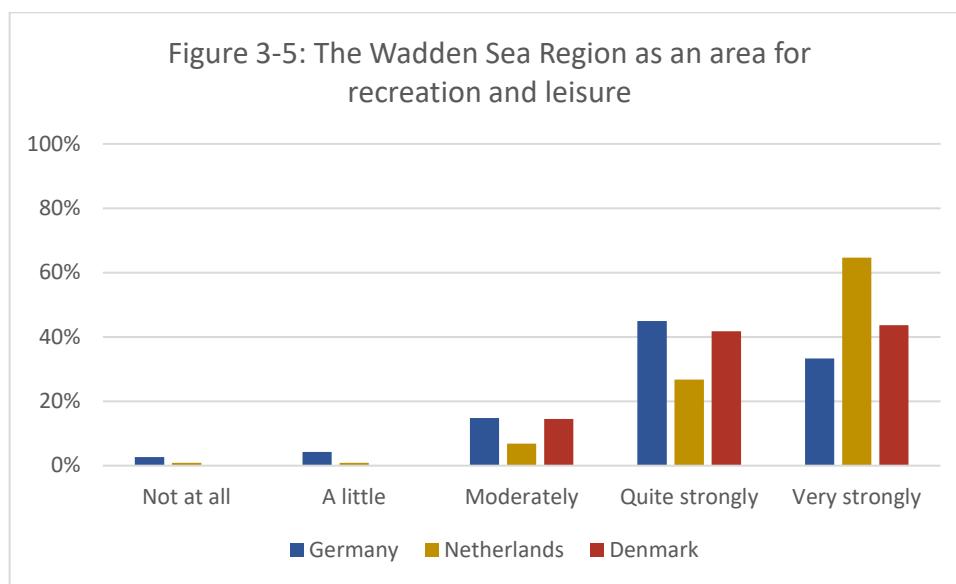
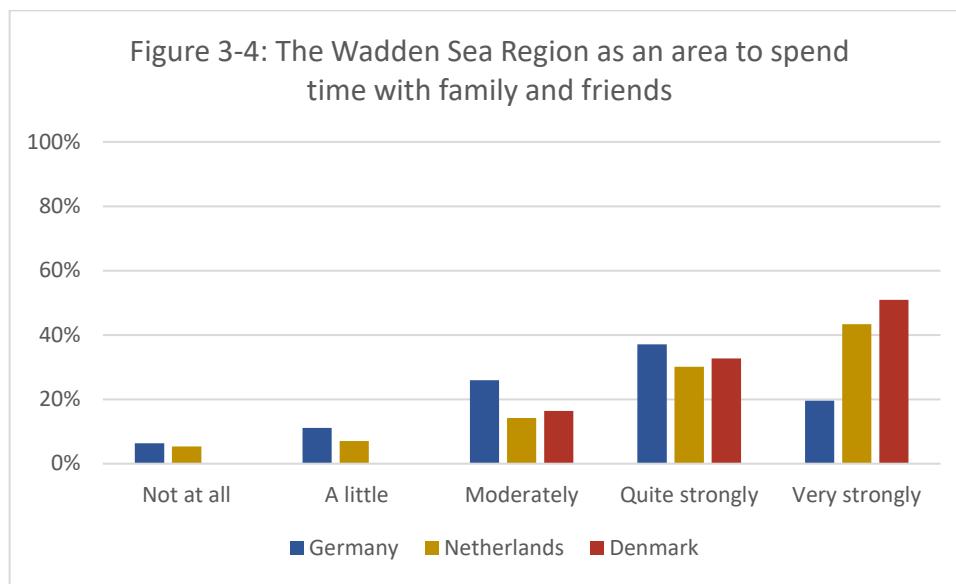
Figure 3-2 reveals, that most of the respondents perceive the Wadden Sea Region as a part of their home or where they come from (terms have been different for each country due to adaptation to language and different semantic implications of terms in each of the languages). The opinions between the three countries converge, with high concentration of replies in the categories “Agree quite strongly” or “Agree very strongly”, illustrating a rather strong attachment of respondents to the region.



Similarly, figure 3-3 shows that the Wadden Sea Region is important for the life of respondents with most respondents referring to “Agree quite strongly” or “very strongly” in their answers. Only among German participants a relatively high number of respondents (more than 20%) refer to “agree moderately”. Again, the received responses indicate a rather strong place attachment of respondents.



Figures 3-4 and 3-5 illustrate the results of questions referring to which degree survey participants view the Wadden Sea Region as an area to spend time with family (figure 3-4) and as an area for recreation and leisure (figure 3-5). These questions refer more explicitly to social life and less to feelings and emotions than the question underlying results in figure 3-3. For both questions, the vast majority of respondents agree quite strongly or very strongly, taking the view that the region is an area, where they spend time for social life and leisure activities. Just for Germany a bit more than 20% only agree moderately that the region is an area to spend time for social life and leisure activities. Generally, these replies confirm the high level of place attachment and connection to the region.



Figures 3-6 and 3-7 show the agreement/disagreement to the statements “The Wadden Sea Region is an area of beauty” (figure 3-6) and “The Wadden Sea Region is an inspiring and spiritual area” (figure 3-7). While there is a high agreement among all respondents that the Wadden Sea Region is a very beautiful area (Figure 3-6), replies to the statement “The Wadden Sea is an inspiring and spiritual area” (Figure 3-7) vary significantly. As can be seen from figure 3-7, most of the respondents agreed moderately or quite strongly on the statement, that the Wadden Sea Region is an inspiring and spiritual area, some also agree very strongly. Fewer respondents did not agree at all or a little. Overall, compared to other questions, opinions show a much more even distribution among the potential answers. In general, German respondents tend to be more sceptical about this statement than those from the Netherlands and in particular those from Denmark. Danish respondents tend to agree significantly more than those from Germany, with only very few replies not agreeing at all or just a little. Overall, it seems that this question was difficult to answer for respondents and rational views may have prevailed among more emotionally connotated terms like “inspiring” and “spiritual”.

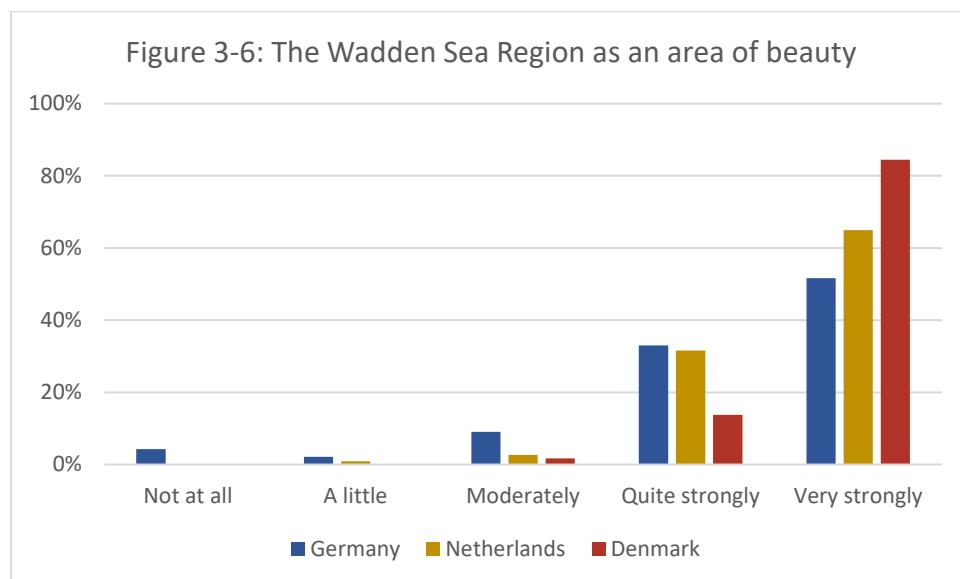
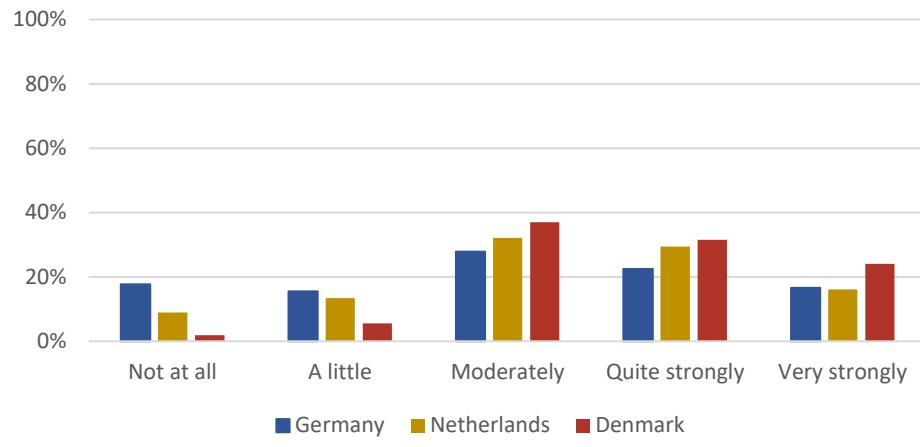
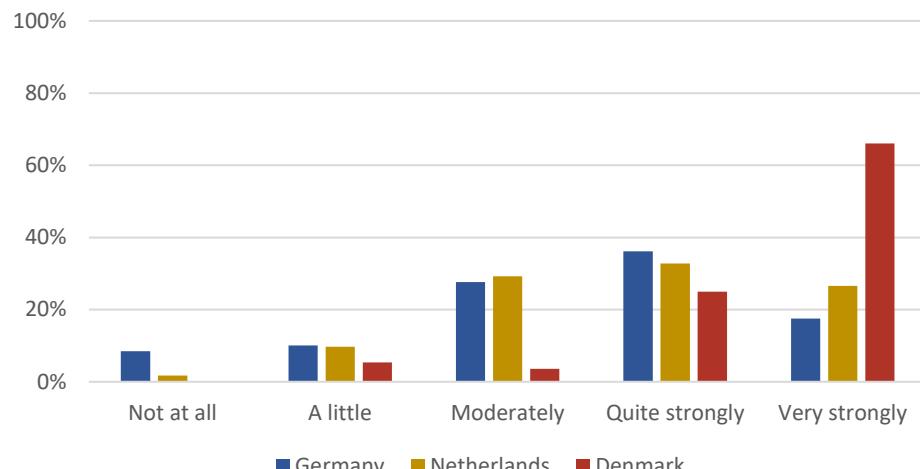


Figure 3-7: The Wadden Sea Region as an inspiring and spiritual area



According to figure 3-8, most of the respondents agree strongly or very strongly on the statement, that the Wadden Sea Region is a cultural area. In particular, the Danish respondents agree with this statement very strongly while in the Netherlands and Germany replies are rather evenly distributed between moderate, quite strong and very strong agreement.

Figure 3-8: The Wadden Sea Region as a cultural area



Generally, when looking at replies of respondents to this set of questions, the answers indicate a strong connection of respondents to the Wadden Sea region and a high level of place attachment. This by and large confirms results of other surveys referring to similar issues in this region or parts thereof such as the studies done by Gee (2010¹, 2013²), Philipp (2011)³ and Ratter et al. (2009)⁴.

3.3 The Wadden Sea Region as a natural area

Three statements in the survey asked for the perception of the Wadden Sea Region as a natural, untouched and healthy area and its protection. In all three countries respondents clearly see the Wadden Sea Region either quite strongly or very strongly as a healthy and natural environment, but some scepticism appears in a significant portion of the replies from German respondents (figure 3-9). More than 60% of the respondents from the Netherlands and Denmark agree very strongly with the statement "The Wadden Sea is a healthy and natural environment" and less than 10% refer to "agree moderately", "agree a little" or "do not agree at all". Of the German respondents less than 40% refer to "agree strongly" with another 40% referring to the answer "agree quite strongly and 20% to "agree moderately".

This fits with the slight differences between German respondents on one side and respondents from the Netherlands and Denmark on the other side when being asked whether they see the Wadden Sea as an (partly) untouched area (figure 3-10).

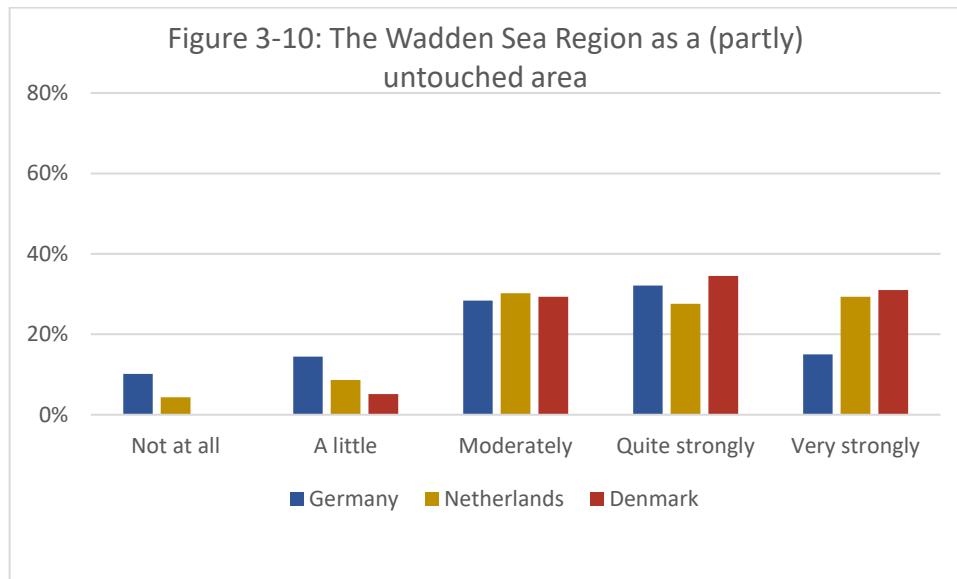
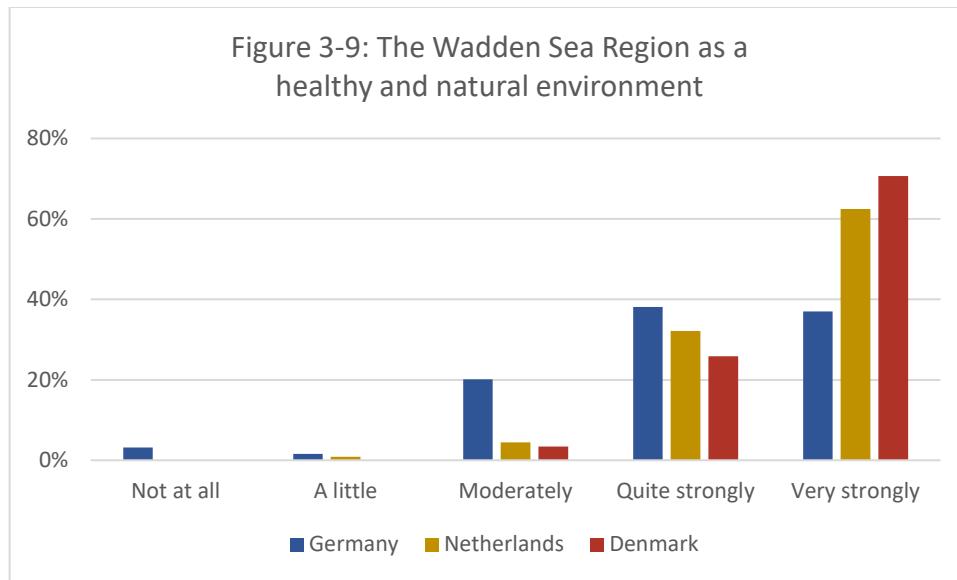
When asked if the participants of the survey perceive the Wadden Sea as an (partly) untouched area, around 60% percent of the German, Dutch and Danish participants agreed moderately or quite strongly, around 30% agreed very strongly in Denmark and in the Netherlands, whereas only around 15% agreed very strongly in Germany (figure 3-10). A clear majority of replies in all three countries refers to the answers "agree very strongly", "agree quite strongly" or "agree moderately" and only few do not agree or only a little. However, the number of responses referring to "agree very strongly" is significantly lower among German respondents compared to those from the other two countries while 20% of German respondents agree with this statement "moderately" compared to very few responses in this category from the Netherlands and Denmark.

¹ Gee, K. (2010): Offshore wind power development as affected by seascape values on the German North Sea coast. Land Use Policy. Vol. 27, Iss. 2 (2010), pp 185-194.

² Gee, K. (2013): Trade-offs between seascape and offshore wind farming values: An analysis of local opinions based on a cognitive belief framework. PhD thesis University of Goettingen. 245 pp.

³ Philipp, K.H.I.: Heimat unter Windrädern: die niederländische Wattenmeerküste aus Sicht der Bevölkerung. HZG Report 2013-7.

⁴ Ratter, B.; Lange, M.; Sobiech, C.: Heimat, Umwelt und Risiko an der deutschen Nordseeküste. GKSS-Report 2009-10.



As figure 3-11 demonstrates, answers to the question whether the Wadden Sea Region is an area that should be protected are relatively evenly distributed among the categories “agree moderately”, “agree quite strongly” and “agree very strongly” with the exception of more than 20% of Danish respondents stating to only agree a little. Support for protection is highest among respondents from the Netherlands with about 65% agreeing “quite strongly” or “very strongly”, while German and Danish respondents refer to these categories of answers with slightly less than 50% and are nearly at par with respondents that do not agree, agree little or moderately. For Denmark about 25% refer to “agree a little” and for Germany more than 10% even refer to “do not at all agree”.

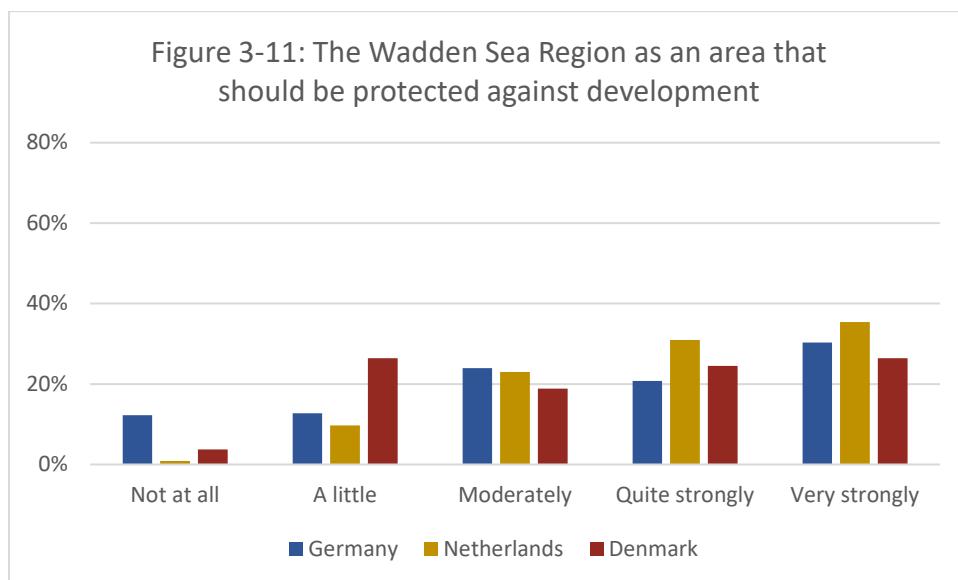
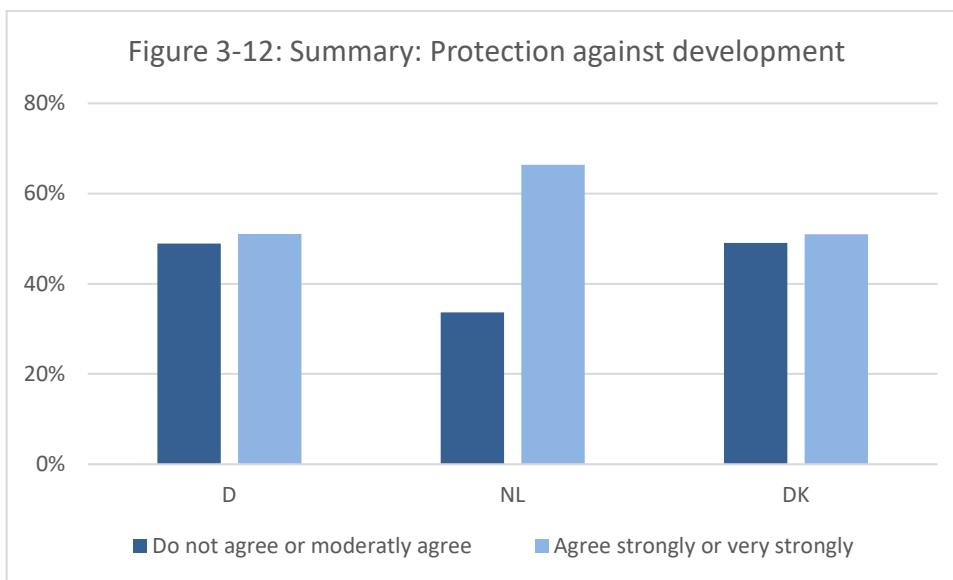


Figure 3-12 provides a summary of the responses to the question whether the Wadden Sea Region is an area to be protected and is based on the same responses as figure 3-11. In figure 3-12 the answers in the categories “do not agree at all”, “agree a little” and “agree moderately” are summarised in one column per country and answers in the categories “agree quite strongly” and “agree very strongly” are summarised in a second column per country. This visualises the stronger support for protection of the region by respondents from the Netherlands compared to German and Danish respondents where there is a nearly even split between respondents stating they do not agree or agree only a little or moderately compared to those agreeing quite or very strongly. However, these replies may also point to biases in the sample of respondents, e.g. if the sample reached out to a higher percentage of persons attached to nature conservation in the Netherlands than in the other two countries. Furthermore, some respondents may have referred to the Wadden Sea Region (as has been the question) while others may have linked protection with the Wadden Sea specifically.

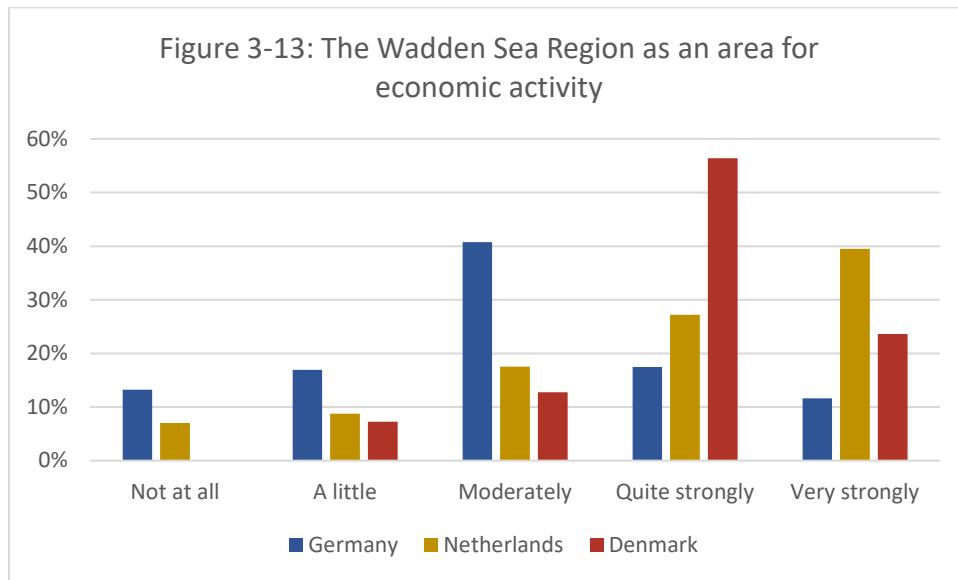


3.4 The Wadden Sea Region as an economic area

A further set of four questions referred to the perception of the Wadden Sea Region as an economic area, referring to economic activity in general, to the Wadden Sea Region as a traditional agricultural area, an area for new industries and to the provision of jobs for inhabitants.

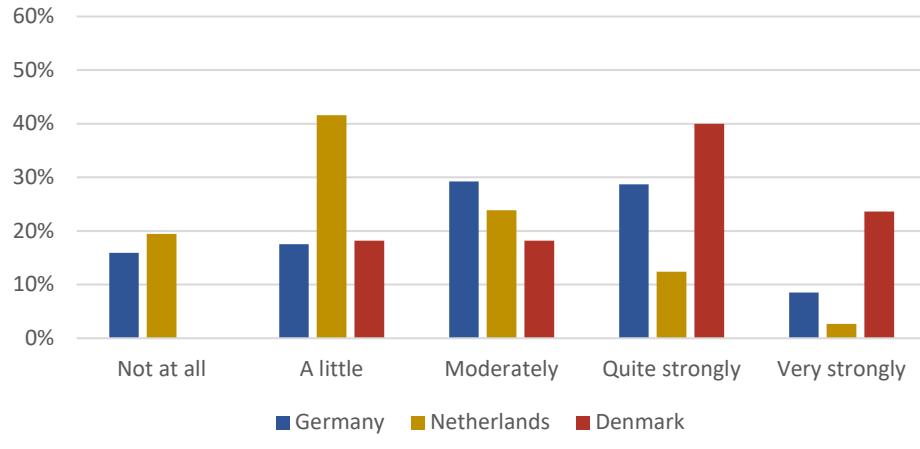
When asked about the Wadden Sea Region as an area for economic activity (figure 3-13), most of the German respondents agree moderately, most of the Danish people agree quite strongly and most of the Dutch respondents agree very strongly. In general, replies provide a different picture for each country. On the one hand in Germany less than 30% of respondents view the Wadden Sea as an area of economic activity “quite strongly” or “very strongly” compared to a similar number referring to the categories “do not agree at

all" of "agree a little" and about 40% referring to the category "moderately". In Denmark, on the other hand, more than 55% of respondents agree "quite strongly" and another more than 20% agree "very strongly". Among the respondents from the Netherlands nearly 40% refer to the answer "very strongly" and another set of more than 25% to "quite strongly".



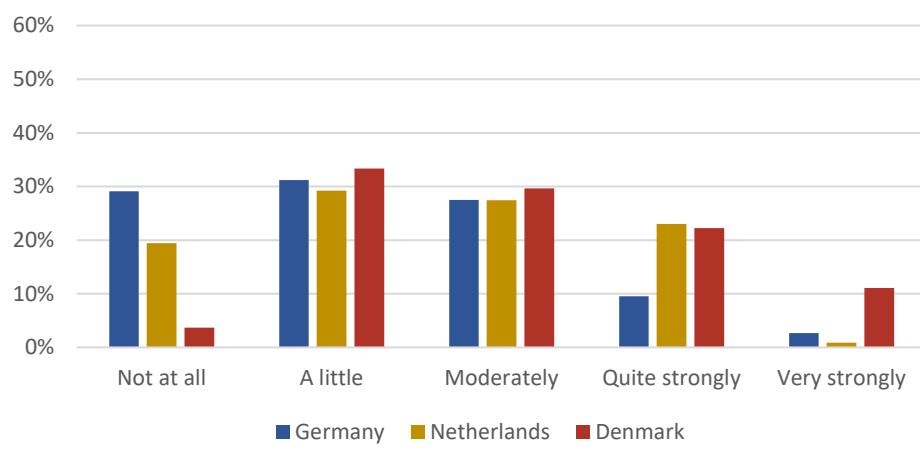
When asked whether they view the Wadden Sea as a traditional agricultural area (figure 3-14), about 65% of the Danish respondents agree "quite strongly" or "very strongly" whereas the respondents from the Netherlands to more than 60% either do not agree at all or only agree "a little" with this statement. Among German respondents slightly less than 30% agree "quite strongly", another 30% "moderately" and another 30% either replied with "do not agree at all" or "agree a little". Therefore the perception of the Wadden Sea area as an agricultural area is significantly different in particular among Danish respondents compared to those from Germany and the Netherlands.

Figure 3-14: The Wadden Sea Region as a traditional agricultural area

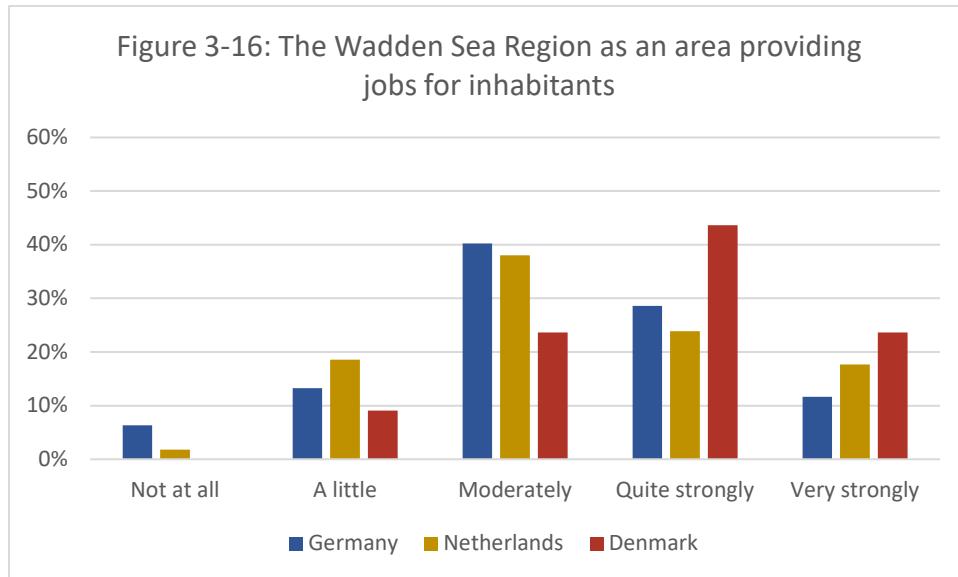


Similarly, to the view of the Wadden Sea Region as an agricultural area, significant differences among respondents from the three countries appear when being asked whether they see the Wadden Sea Region as an area for new technologies and industries (figure 3-15). While in all three countries most respondents either “agree a little” or “agree moderately”, nearly 30% of German respondents “do not agree at all” and only a bit more than 10% agree quite or very strongly. In contrast, among respondents from Denmark and the Netherlands more than 20% agree to view the region as an area for new industries and technologies, with another 10% in Denmark even agreeing “very strongly”.

Figure 3-15: The Wadden Sea Region as an area for new industries and technologies



Results illustrated in figure 3-15 are also reflected in statements referring to the Wadden Sea Region being an area that provides jobs for its inhabitants (figure 3-16). Here significantly more than 40% of Danish respondents agree quite strongly and significantly more than 20% very strongly whereas most respondents from Germany and the Netherlands agree moderately and to a lesser degree agree quite strongly, therefore being significantly more sceptical on this statement than Danish respondents.



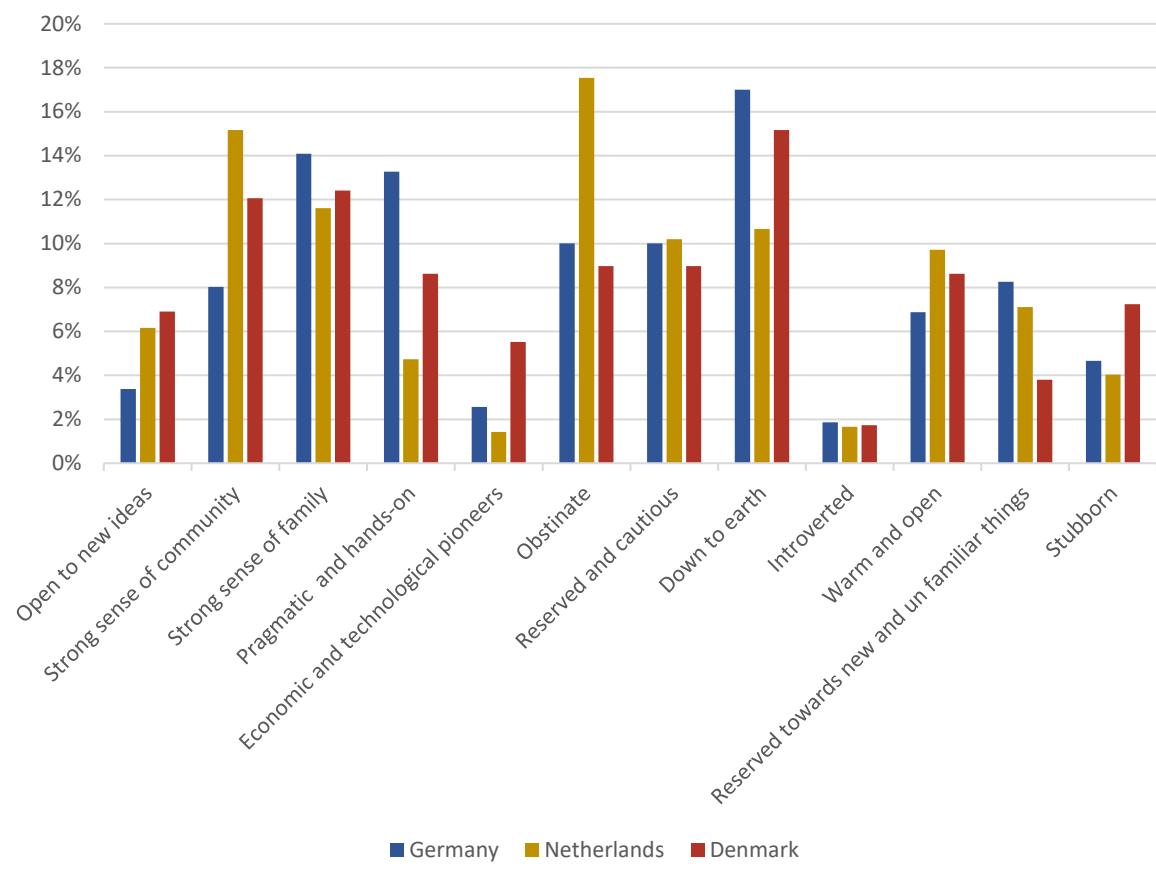
Overall, the results to this set of questions indicates a much stronger view on the area as an area of economic activities among Danish respondents compared to those in Germany and the Netherlands. One reason might be that the Danish Wadden Sea Region is smaller and better connected to economic centres compared to the Wadden Sea areas of Germany and the Netherlands, which experience a relative distance to larger economic centres in their countries. However, this remains to be proven by further analysis and was not subject of this study.

3.5 (Self-) characterisation of people living in the Wadden Sea Region

When asked in a closed question how respondents would characterise the inhabitants of the Wadden Sea Region, survey participants were given a choice among 12 pre-defined categories. Ticking multiple categories was explicitly possible. The result displays a diverse picture (figure 3-17), with answers quite evenly distributed among the pre-defined categories. No individual category received more than 17% of replies. Among respondents from the Netherlands, the category "obstinate" with 17%, followed by "strong sense of community" (15%) received the highest amount of replies. In Germany the category "down

to earth" (17%), "strong sense of family" (14%) and "pragmatic and hands-on" (13%) were seen as best characterising Wadden Sea inhabitants. Similarly, for Denmark the highest number of responses was attributed to "down to earth" (15%) and "strong sense of family" (12%). These characterisations underpin local identification, place attachment and the strong connection to the area, which stood out in questions referring to the Wadden Sea area as ones' home (figure3-1) and being an important part of ones' life (figure3-2). Overall, social aspects such as people having a strong sense of community and a strong sense for family seem to be seen as key characteristics of Wadden Sea inhabitants. The relatively high number of responses characterising Wadden Sea inhabitants as pragmatic may also refer to a potential, which can be used for future development of the area, if activated. A constraint, however, might be derived from the low support of respondents to viewing people of the different areas as being open to new ideas.

Figure 3-17: Characterisation of Wadden Sea Regions's inhabitants
(multiple answers possible)

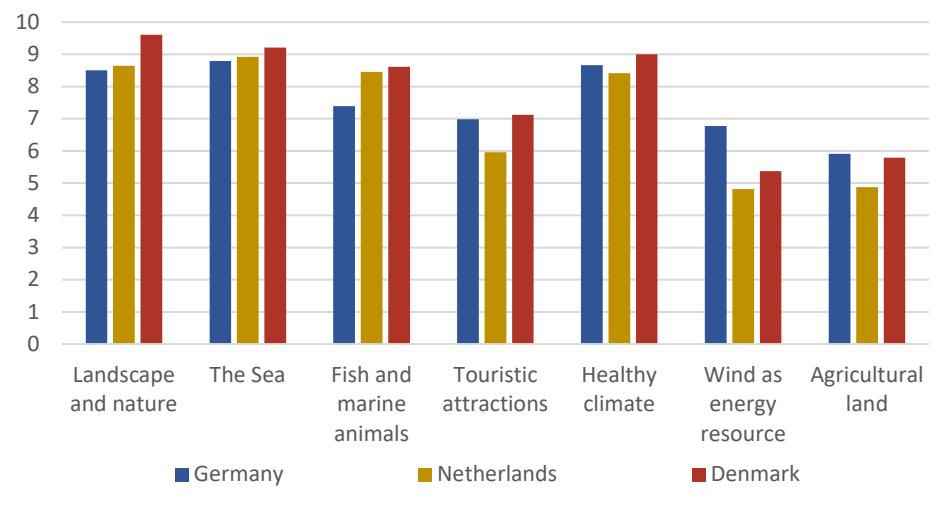


4 Main resources of the region

Following the questions regarding the personal attachments and perceptions of the Wadden Sea Region, survey participants were asked to assess the relevance of main resources for its development. The question asked respondents to judge the relevance of seven pre-defined potential resources on a scale from 0 (resource is not relevant for development) to 10 (resource is very relevant for development). Figure 4-1 illustrates the results based on the mean score from all respondents per country for each of the potential resources.

Generally, there is no significant difference between respondents from Germany, the Netherlands and Denmark. As a slight exception from this, wind as a resource for (renewable) energy is recognised significantly higher in Germany than in Denmark and the Netherlands as relevant for development of the area. Respondents gave highest values (with a mean above 7) to the categories “landscape and nature”, “the Sea”, “healthy climate” and “fish and marine mammals”, which therefore are considered by respondents to be highly relevant for the development of the Wadden Sea Region. Touristic attractions are valued relatively high (with a mean value of about 7) in Germany and Denmark, and slightly less (with a mean value of 6) by respondents from the Netherlands. This seems to reflect respondents’ perception of the Wadden Sea Region as a natural area, as also indicated in chapter 3-3.

Figure 4-1: Relevance of main resources of the area, scale from 0 (not relevant) to 10 (very relevant)



An additional option was provided in the survey by allowing respondents to name further resources they feel relevant for the area in a free text field. Only few respondents used this option. The entries provided were similar to the pre-defined categories and could easily fit into those, e.g. respondents provide statements such as “an area for tourism”, “a unique and sensible ecosystem”, “a geomorphological and dynamic landscape”, “an economic area for people living here like fishermen”.

5 Threats for the region and how to deal with them

Another block of questions is related to respondents' perception of threats for the Wadden Sea Region. A first question (chapter 5.1) was given asking people what they view as the main threats for the area and its future development. Further questions asked who should be responsible to address these threats (chapter 5.2) and how well respondents think, these threats are addressed (chapter 5.3).

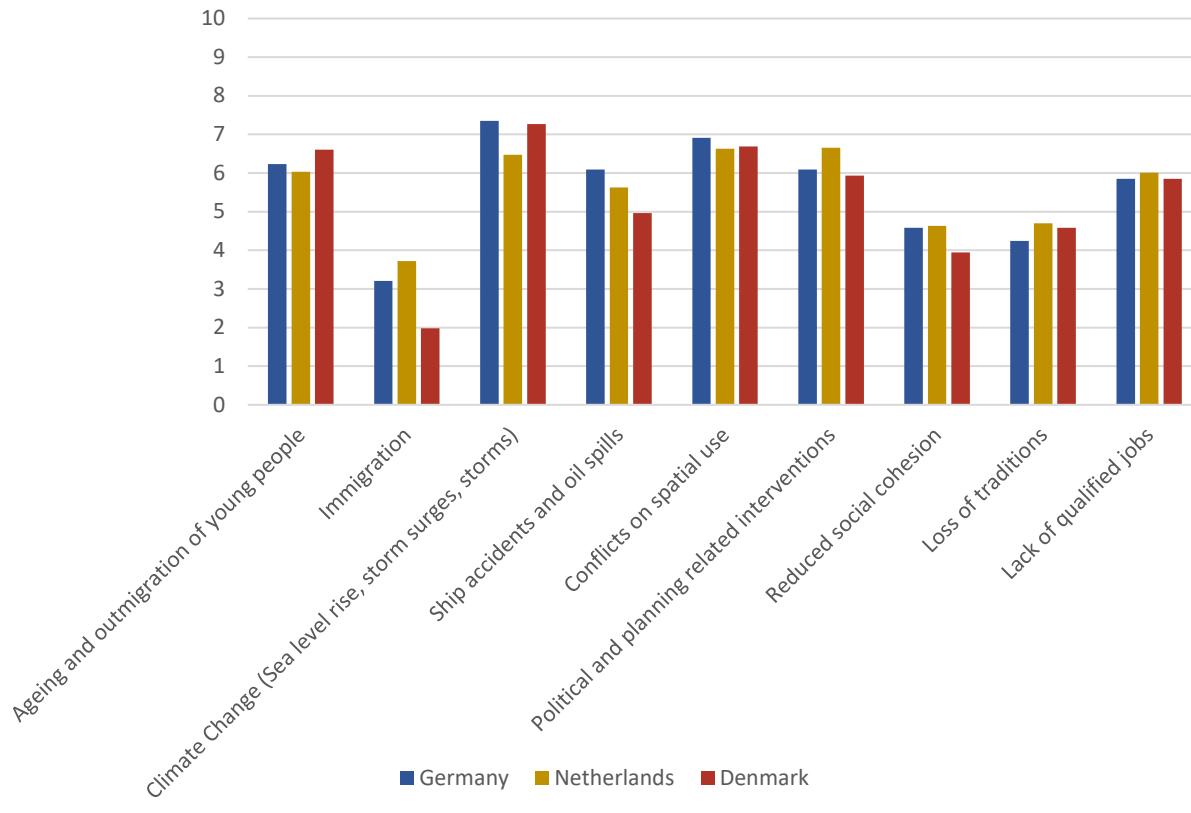
5.1 Main threats for the region

To get an overview of what respondents view as main threats for the region, they were asked to rate 9 pre-defined categories on a scale from 0 (not a relevant threat) to 10 (very relevant threat). Results are illustrated in figure 5-1. The pre-defined threats were:

- ageing society and outmigration of young people,
- immigration,
- effects of climate change such as sea level rise, increased storm surges, increased storms etc.,
- ship accidents and oil spills,
- conflicts on spatial use,
- political and planning related interventions,
- reduced social cohesion,
- loss of traditions, and
- lack of qualified jobs.

Similar to the replies concerning the question about relevant resources in chapter 4, there are no significant differences between respondents from Germany, the Netherlands and Denmark in the answers provided. However, no individual threat is in average rated significantly higher than 7 in each of the countries. For most respondents, "effects of climate change" form the main threat followed closely by "conflicts on spatial use" and "ageing society and outmigration of young people". With mean values around 6 also "political and planning interventions" are rated as a threat as well as "lack of qualified jobs". Ship accidents and oils spills are rated slightly higher as a threat in Germany than in the Netherlands and Denmark. Immigration is not seen as a threat by most of the respondents with mean ratings of 2 in Denmark and 3,6 in the Netherlands, actually the lowest values in each country.

Figure 5-1: How big are the following threats for the future of the area
on a scale from 0 (not relevant) to 10 (very relevant)?



More personal views were provided in an additional open question providing the opportunity for free text entries. Many of those entries received refer to environmental concerns. A typical, but very pronounced statement for example mentioned “the greed for profits as can be seen in overfishing and ships run with heavy oil”. Waste in the sea, chemical pollutants, eutrophication through agriculture and climate change have also been mentioned quite often. Similarly, it has been mentioned that “natural resources stand behind economic interests and get further destroyed”, “without tourism the Wadden Sea would not have any lobby at all” and “nature can adapt to many things, but can it adapt as fast as we [humans] put pressure to the earth with industrialisation and climate change”.

5.2 Who should be responsible for managing these threats?

In addition to asking for the main threats in chapter 5.1, respondents were asked whom they would see as responsible to handle and manage each of the 9 pre-defined potential threats. Options for answers were

- Politics and administration,
- Economic sectors and companies,
- Civil society and each individual, and
- Do not know.

Results are illustrated in figures 5-2 to 5-10. However, it should be noted that not all of these potential threats had been rated as relevant for the area, notably immigration (see chapter 5.1).

Figures 5-2 to 5-10 demonstrate that most respondents regard politics and administration in charge of addressing most of the threats. Generally, this view seems to be slightly more pronounced in Denmark than in the Netherlands and Germany.

“Climate Change” (figure 5-3), “Ageing society and outmigration of young people” (figure 5-5) are seen by respondents as topics where responsibilities are with “politics and administration” as well as “economic sectors and companies” and “civil society and individuals”. Danish respondents – more than those from Germany and the Netherlands – focus on “politics and administration” to address these threats, which have also been rated as highly relevant for the future of the Wadden Sea Region (see figure 5-1). For “ageing society and outmigration of young people”, in particular, a significant part (more than 40%) of the respondents from the Netherlands conceive “civil society and individuals” accountable.

Concerning “ship accidents and oil spills” (figure 5-4) and “lack of qualified jobs” (figure 5-6), respondents see mainly economic sectors and companies in charge together with politics and administration.

Clear exceptions, where “politics and administration” are not seen as responsible, are “loss of traditions” and “social cohesion” (figure 5-9 and figure 5-10) where by far most of the respondents see civil society and individuals as being responsible.

Figure 5-2: Responsibilities:
Immigration

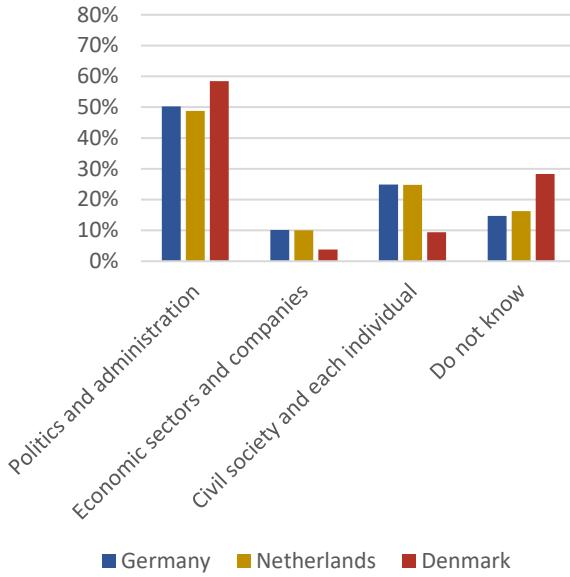


Figure 5-3: Responsibilities: Climate
Change effects

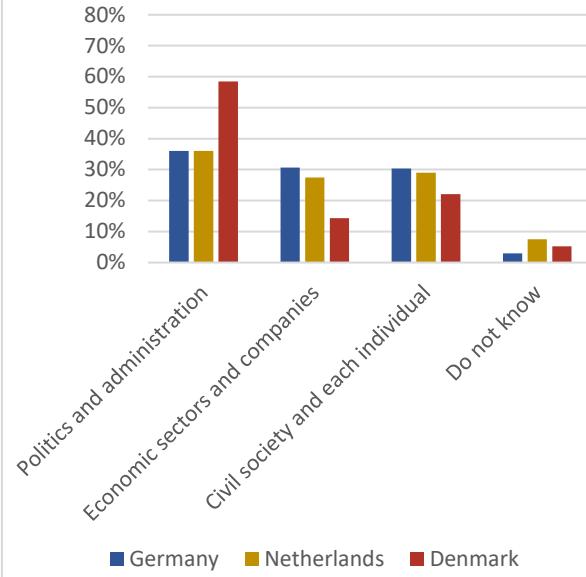


Figure 5-4: Responsibilities:
Ship accidents and oil spills

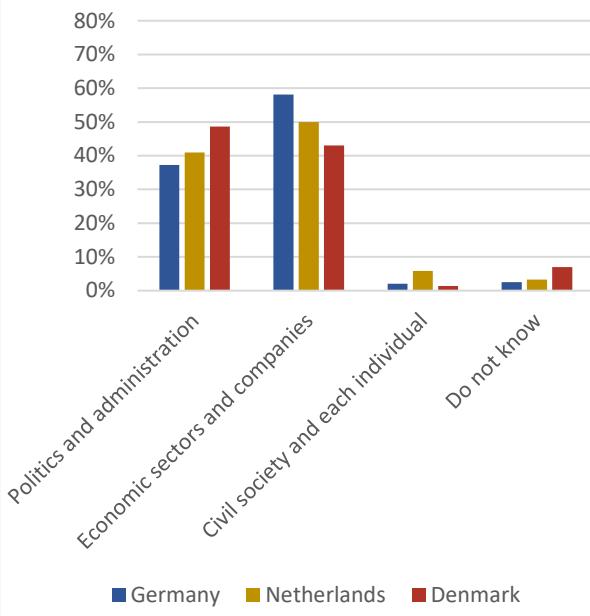


Figure 5-5: Responsibilities: Ageing
and outmigration of young people

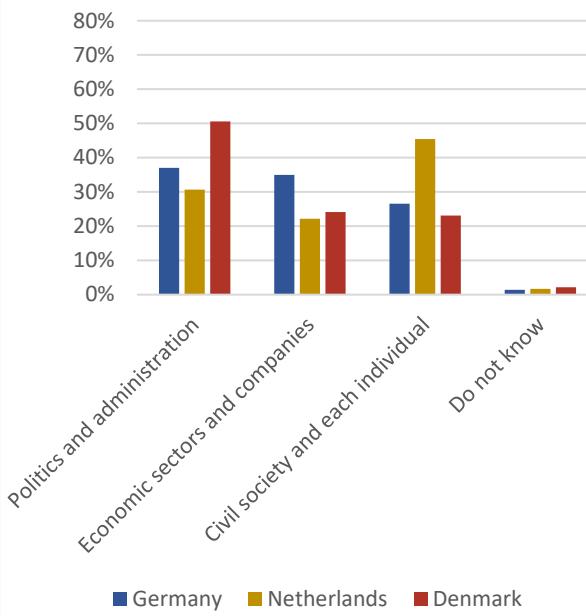


Figure 5-6: Responsibilities: Lack of qualified jobs

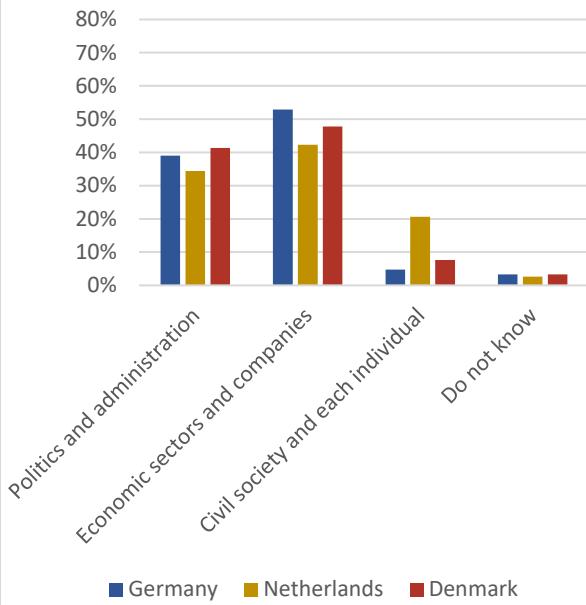


Figure 5-7: Responsibilities: Conflicts on spatial use

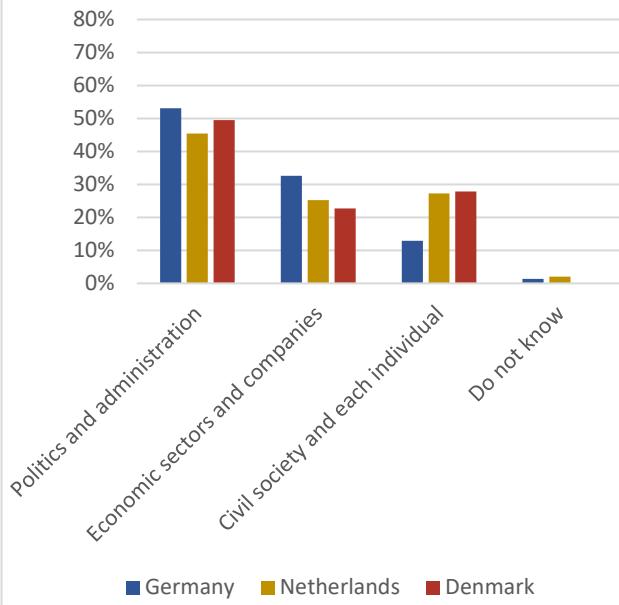


Figure 5-8: Responsibilities: Political and planning related interventions

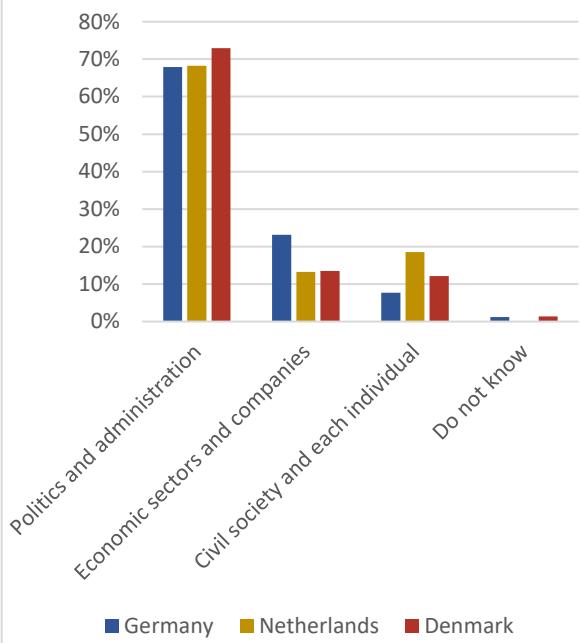


Figure 5-9: Responsibilities: Reduced social cohesion

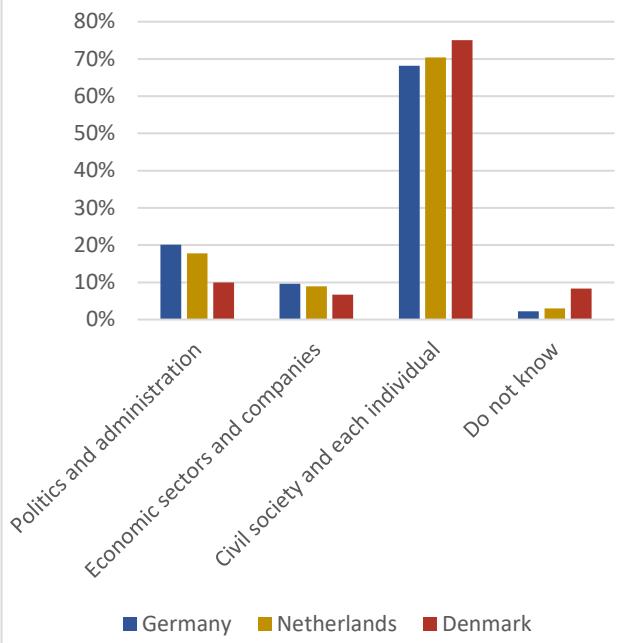
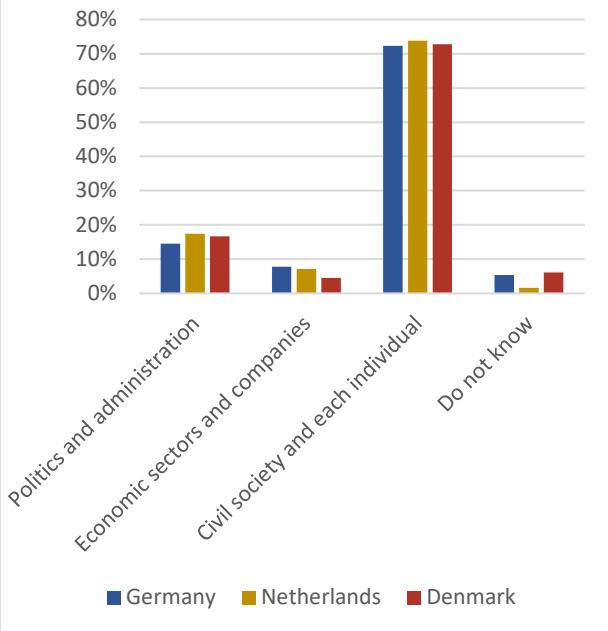


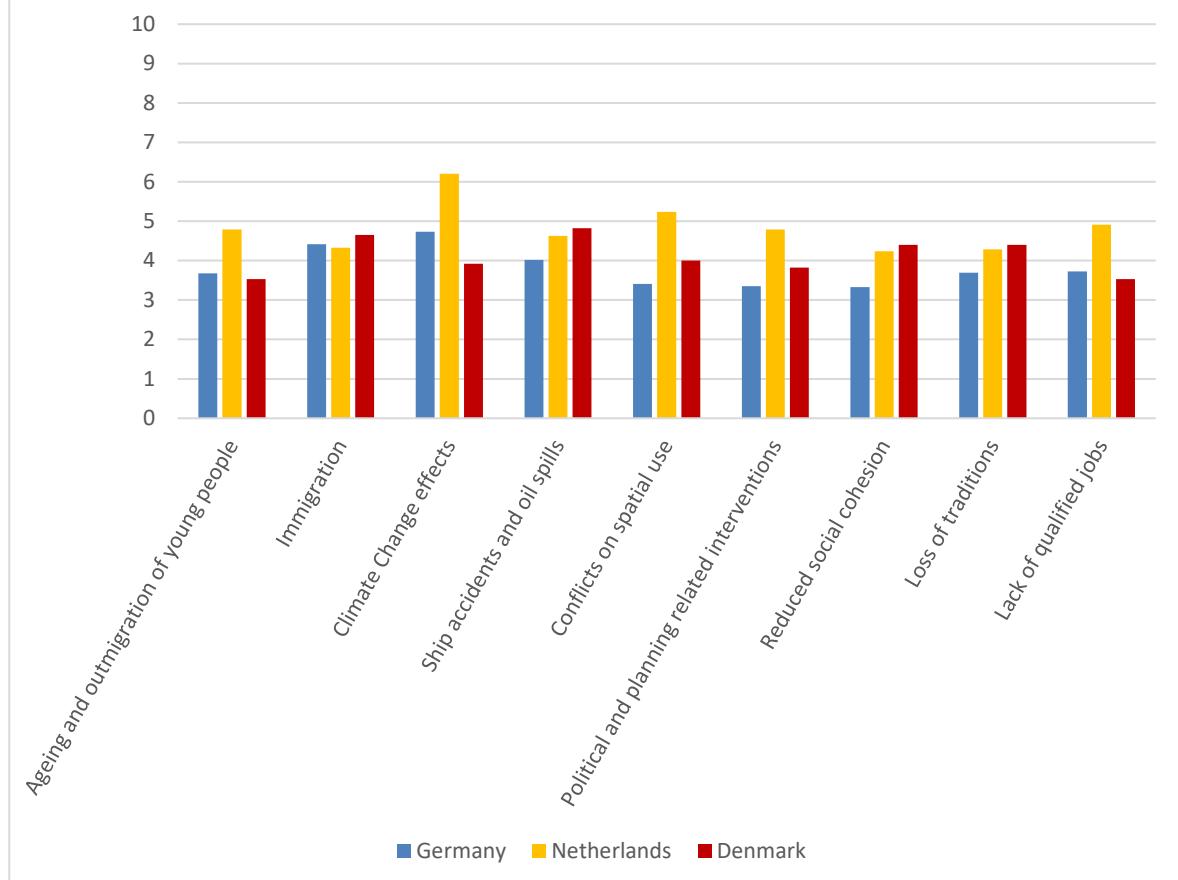
Figure 5-10: Responsibilities: Loss of traditions



5.3 How well are these threats addressed?

Independent of whom respondents conceive as responsible to address these potential threats, a key question in the survey was to ask how well they think, the potential threats are addressed. Survey participants were asked “How good are risks addressed in policy and management on a scale from 0 (not at all) to 10 (very good)?”. Results provided in figure 5-11 are mean ratings from all answers provided by respondents in each of the countries. It needs to be noted that German and Danish respondents rate all of these potential threats to be addressed quite badly with mean values for all threats being below a number of 5. The two highest mean values are from respondents in the Netherlands with slightly above 6 for addressing “climate change effects” and slightly above 5 for addressing “conflicts of spatial use”. Generally, these ratings express a significantly high level of dissatisfaction with the political management of risks and threats in the Wadden Sea Region.

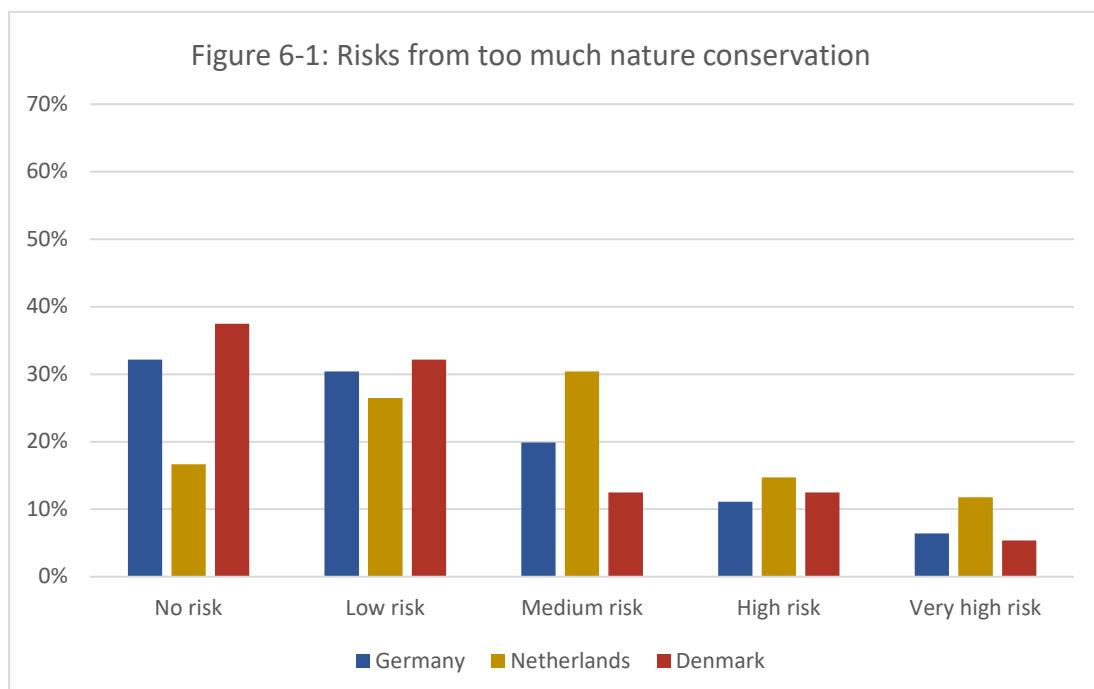
Figure 5-11: How good are threats addressed on a scale from 0 (not at all) to 10 (very good)



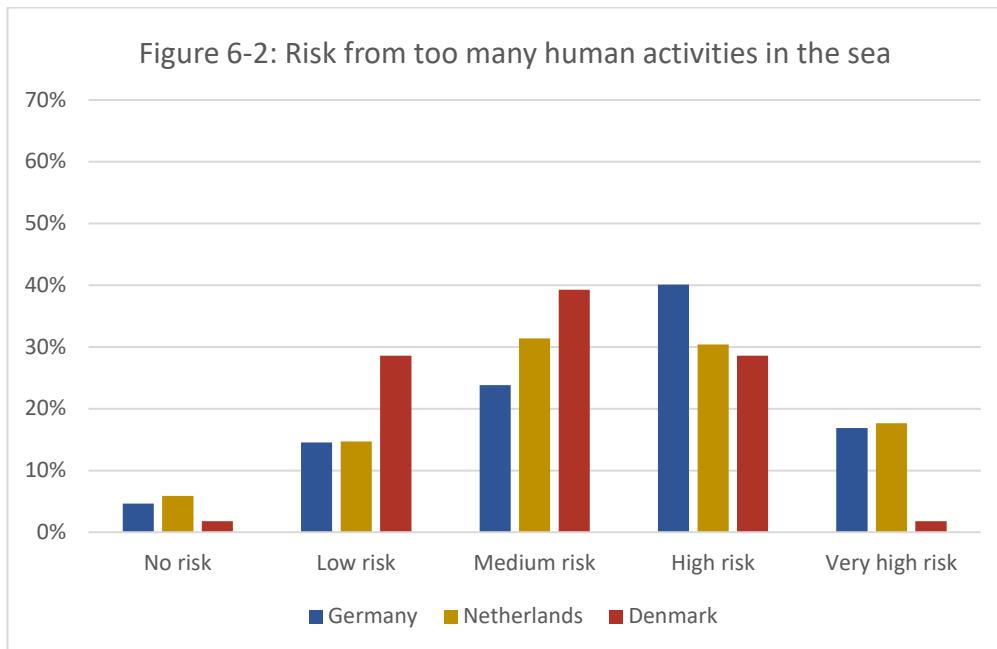
6 Main threats for the sea

A final set of questions related to what survey participants view as threats not for the Wadden Sea Region as such, but specifically for the sea and the marine area. For each potential threat respondents were asked to rate the risk from several human impacts to the sea on scale from “no risk” to “very high risk”. The term risk in this context refers to a colloquial understanding, not specifically related to scientific definitions.

As can be seen from figure 6-1 even too much nature conservation can be perceived as a risk for the sea, although only by a relatively low number of respondents. While most of German and Danish respondents agree that (too much) nature conservation is no or a low risk, 30% of respondents from the Netherlands classify it as medium, nearly 15% as high and more than 10% as a very high risk for the sea. However, also in Germany and Denmark more than 15% of respondents view too much nature conservation as a high or very high risk.



As can be expected, human activities in the sea are viewed significantly more as a risk for the sea than too much nature conservation (figure 6-2). Most respondents rate human activities in the sea either as a high or medium risk, and about 15% of respondents from Germany and the Netherlands even as a very high risk. Generally, Danish respondents are much more positive. Nearly as many (about 30%) view human activities in the sea as a low risk than a high risk and extremely few as a very high risk.



When specifically asked about ecological (figure 6-3) and visual (figure 6-4) impacts of offshore wind farms, it becomes obvious that most German and Danish respondents rate the risks for the sea originating from offshore wind farms as either medium or low, while respondents from the Netherlands are more sceptical. Nearly 40% of respondents from the Netherlands expect high or very high ecological impacts from offshore wind farms compared to about 20-25% of respondents from Germany and the Netherlands.

The majority of the respondents see a low or medium risk given, regarding the ecological impacts of offshore wind farms (figure 6-3). The respondents' view of the three different countries do not differ much, with the exception of respondents from the Netherlands being significantly more sceptical than those from Germany and Denmark.

Concerning the visual impact from offshore wind farms (figure 6-4), most respondents in all three countries view this as a low risk for the sea and a significant part as a medium risk. Again respondents from the Netherlands seem to be more sceptical with nearly 40% regarding visual impacts as a high or very high risk, the latter outstanding compared to views raised by German and Danish respondents.

Figure 6-3: Risk from ecological impacts from offshore wind farms

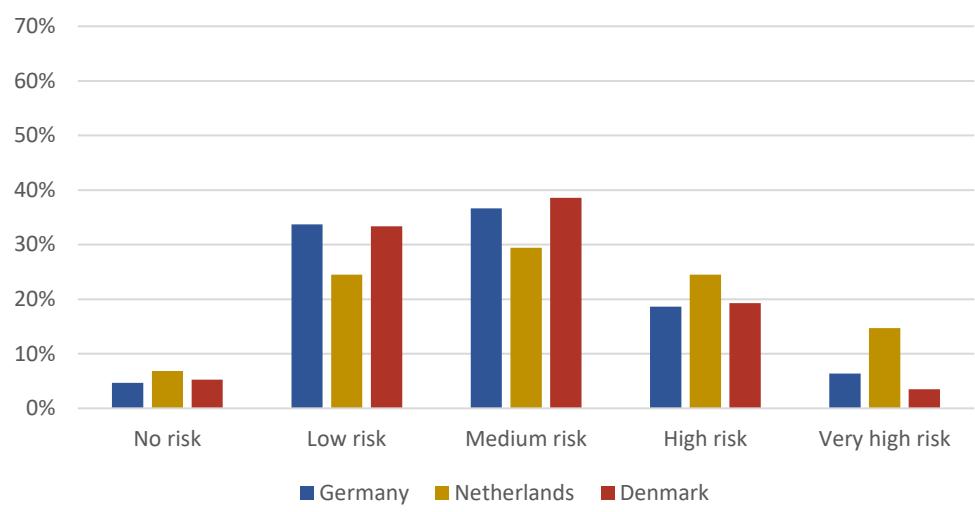
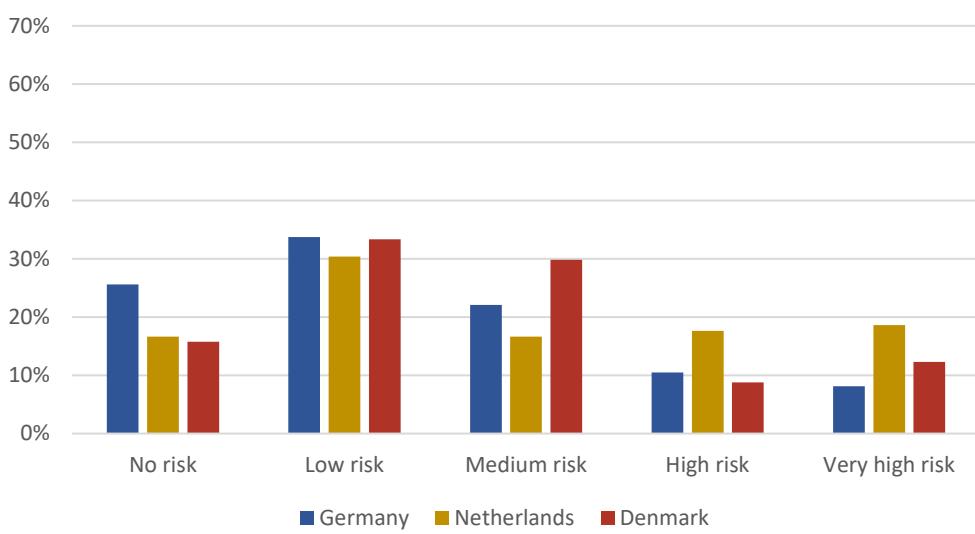
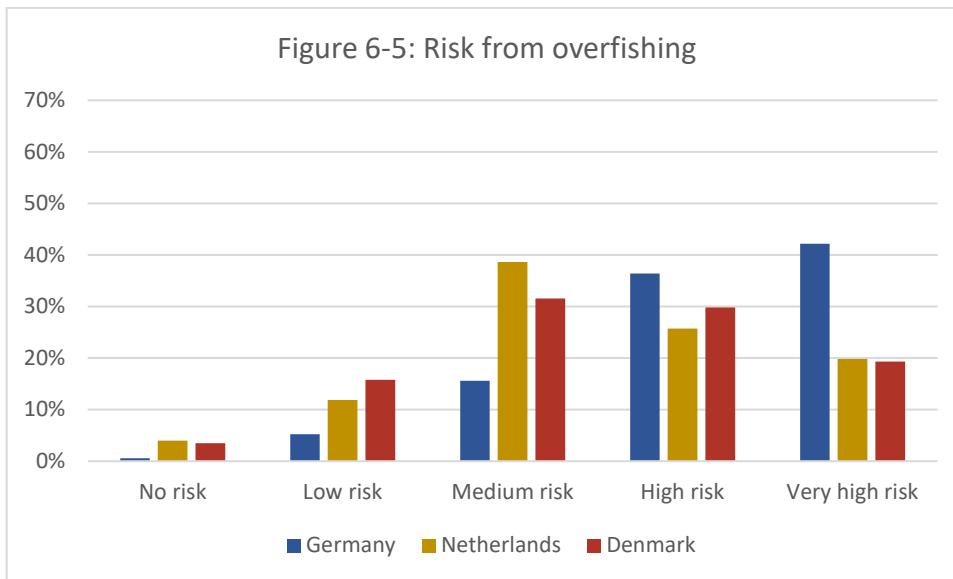


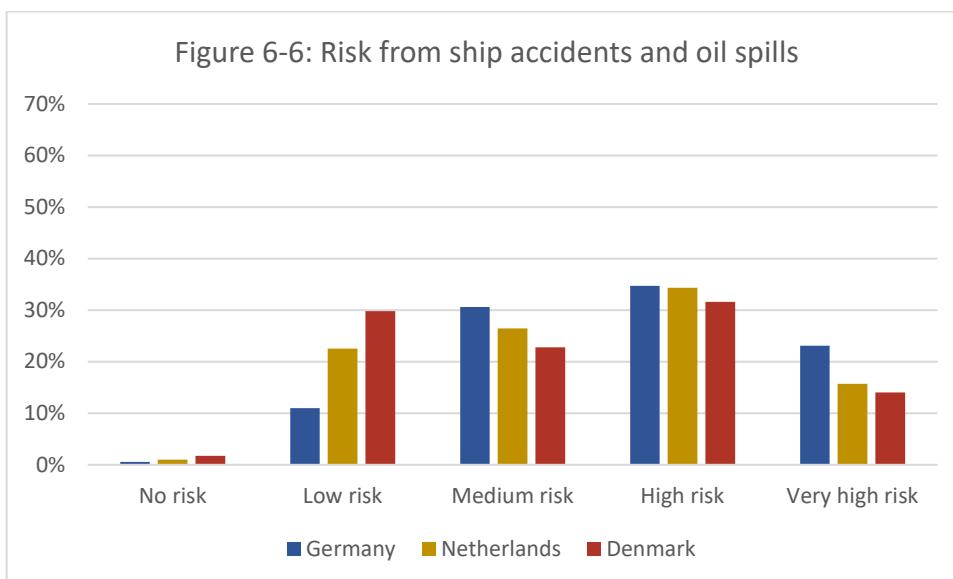
Figure 6-4: Risk from visual impacts from offshore wind farms



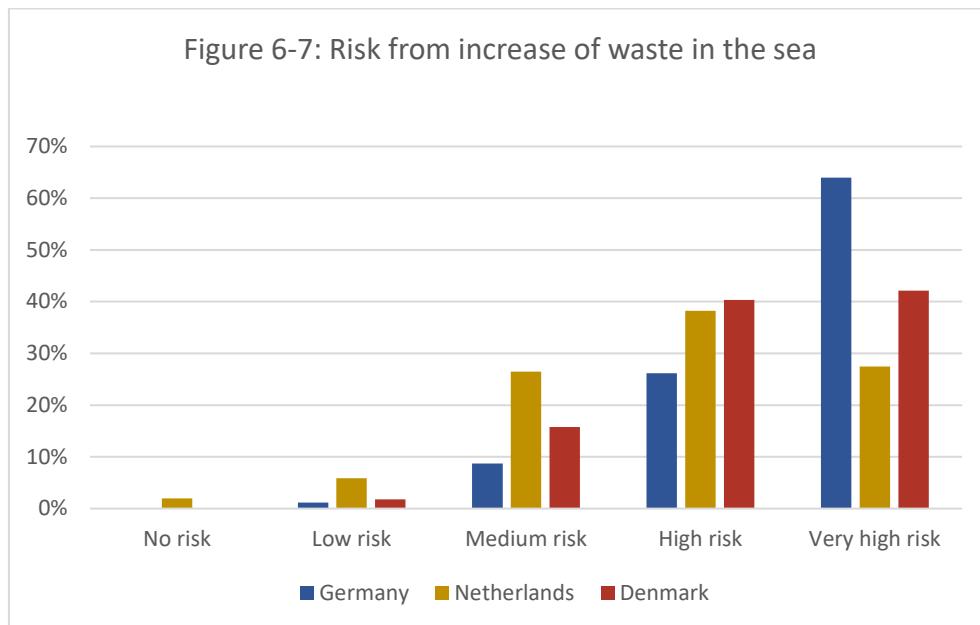
As outlined in figure 6-5, overfishing is recognised as a medium to very high risk for the sea by respondents. Rather few regard this as no risk. Combining the categories of no risk and low risk, about 20% of the Danish respondents do not perceive overfishing as a risk or only a low risk for the sea, compared to less than 10% of the German respondents. In particular, German respondents seem to be very sensitive concerning overfishing with more than 40% rating it as very high and more than 30% as a high risk. On the contrary, nearly 40% respondents from the Netherlands see overfishing only as a medium risk.



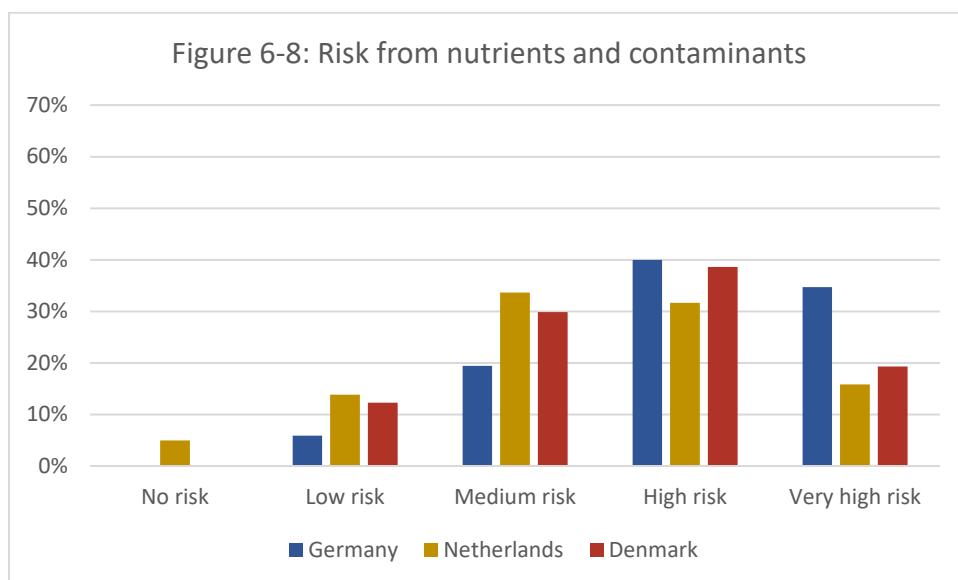
For the potential risk from ship accidents and oil spills (figure 6-6), the survey results reveal again a higher sensitivity from German respondents. While 30% of Danish respondents rate this as a low risk and slightly more as a high risk, more than 20% of German respondents rate the risk of ship accidents and oil spills as very high, significantly more than 30% as high and another 30% as a medium risk.



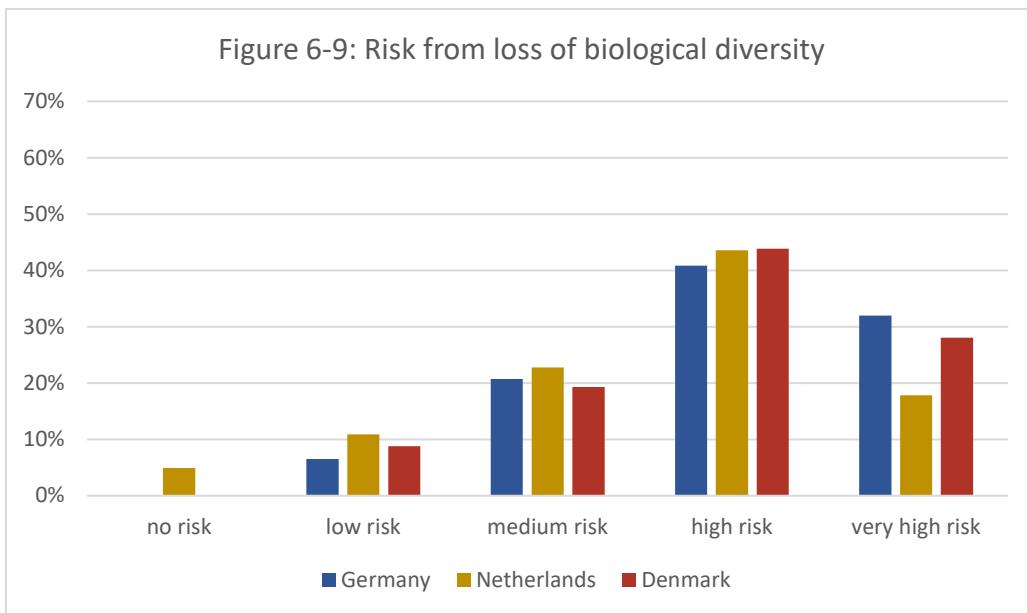
Waste in the sea (figure 6-7) is generally perceived as a threat creating high to very high risk for the sea with a particularly high sensitivity among Danish and German respondents. More than 80% of Danish and German respondents rate this as a high or very high risk, but also about 70% of respondents from the Netherlands.



Nutrients and contaminants (figure 6-8) are seen as a medium, high or very high risk for the sea with German and Danish respondents being more sensitive to this than respondents from the Netherlands. Particularly German respondents (75%) recognise this as a high and very high risk, which is a significantly higher number than Danish respondents and even more than respondents from the Netherlands (with less than 50% rating nutrients and contaminants as a high or very high risk).



The risk from losing the biological diversity (figure 6-9) is mainly seen as a high and by more than 30% of German survey participants even as a very high risk. About 20% of respondents in each of the three countries rates loss of biodiversity as a medium risk and only few respondents as low or no risk.



7 Summary and Conclusions

This report presents the outcome of the online survey, which was conducted by HZG from mid-June to mid-September 2017 among members of the Wadden Sea Forum and the public at large living and working in all three countries in the Wadden Sea Region. The survey was conducted in Danish, German and Dutch language. 350 questionnaires from survey participants in the Netherlands, Germany and Denmark have been received and included in the analysis. Even though the survey cannot be regarded as statistically representative, its results point to important aspects requiring recognition by policy makers and refer to opportunities for collaborative action to be taken at trilateral, national and subnational level.

When looking at respondents' characterisation of the Wadden Sea Region (chapter 3) eye-catching results of the survey are:

- Only 60% of Danish, about 40% of German and less than 40% of respondents from the Netherlands connect to the **transnational nature** of the Wadden Sea Region even though survey participants had the opportunity to provide multiple answers allowing to combine national and sub-national geographical views with a transboundary perspective. Given the intense trilateral cooperation in the Wadden Sea in terms of nature conservation and stakeholder cooperation by the Wadden Sea Forum, there seems to be a need to strengthen awareness about the transnational nature of the Wadden Sea Region to tackle some of the threats identified in the survey in collaborative actions.
- A majority of the respondents in this survey view the Wadden Sea Region as part of their home, an important part of their life and an area to spend time with family and friends. This kind of social relations are particularly obvious among Danish respondents. As well, a majority of respondents view the Wadden Sea Region as a particularly beautiful area. However, significantly more Danish respondents value the Wadden Sea Region as a cultural area than respondents from Germany and the Netherlands. Generally, these results underpin the role of the Wadden Sea Region as part of **regional identity** and may even indicate a potential to support regional identity beyond national borders.
- Protecting the Wadden Sea Region against development is significantly more pronounced in this survey by respondents from the Netherlands and Denmark compared to German participants.
- Respondents from Denmark and the Netherlands characterise the Wadden Sea Region stronger as an **area for economic activity** than German survey respondents. In particular Danish respondents also state that the Wadden Sea Region is an area, which provides jobs for its inhabitants. This corresponds with a rather lower share of German respondents compared to those from Denmark and the Netherlands recognising the Wadden Sea Region as an area for new industries

and technologies. This seems to be in contrast to the obvious engagement in onshore wind farms in the German Wadden Sea Region and the strong development of community owned wind farms in particular. It may also indicate a tendency among German respondents to take a quite traditional perspective of the area, which may be supported by the fact that German and Danish respondents view the area much stronger as a traditional agricultural area than those from the Netherlands.

Survey results concerning resources and threats for future development of the Wadden Sea Region identify particularly the following points:

- As **main resources** for future development respondents identify
 - landscape and nature,
 - the sea, and
 - the healthy climate.
- **Main threats** in the view of survey participants are
 - climate change and its related effects,
 - conflicts on spatial use,
 - political and planning interventions, and
 - ageing and outmigration of young people.

Immigration is clearly not considered as a threat by a vast majority of respondents in all three countries.

While **politics and administration** are seen to play a significant role in addressing most of the (potential) threats for the region, survey respondents are very critical on how good any of the (potential) threats are currently addressed:

- In the view of survey participants, **none of the (potential) threats is currently addressed in an acute or reasonable way**. On a scale from 0 (not addressed at all) to 10 (addressed very well) the mean values are nearly all (in all countries and for all potential threats including those identified by participants as main threats) below 5, indicating a strong **dissatisfaction** in how threats are dealt with.
- The highest mean value with slightly above 6 (which is still far from being well addressed) is on dealing with climate change effects in the Netherlands.

Concerning threats for the sea, in contrast to the region, the following key results can be identified:

- Only German respondents in majority view **human activities in the sea** in general and **overfishing** in particular as a threat exposing **high or very high risk**.
- Across respondents from all three countries **impacts from offshore wind farms** (ecologically and visual) are mainly recognised as a **medium to low risk** for the sea with slightly higher sensitivity in the Netherlands.
- Increasing **waste in the sea, nutrients and contaminants** as well as **loss of biodiversity** are seen as a **high or very high risk for the sea** by majority of respondents in all three countries.

A significant part of the threats identified by survey participants may require action at European or national level. However, the Wadden Sea Region and its trilateral institutions need to observe these threats and the risk they may potentially create in order to identify actions at local, regional and trilateral level. Overall, the results of this survey indicate that there is room for improvement in managing the Wadden Sea Region in a sustainable way. Based on the identified cross-regional commonalities, there is a potential field of activity at and across all governmental levels including the trilateral cooperation. The survey results suggest that it is time for the trilateral cooperation in the Wadden Sea Region to go beyond nature conservation and target pathways towards sustainable development.

FOR PEOPLE AND THEIR
FUTURE ENVIRONMENT



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Helmholtz-Zentrum Geesthacht
Zentrum für Material- und Küstenforschung GmbH
Max-Planck-Straße 1
21502 Geesthacht
www.hzg.de

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