BalticSurvey – a study in the Baltic Sea countries of public attitudes and use of the sea

Report on basic findings

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Trycksak

Preface

Inspired by "The Economics of Climate Change – the Stern Review" (2007), the Nordic Ministers for the Environment jointly called for Stern-like reviews of the Nordic Seas, in order to gain a broad perspective of the socioeconomic consequences of human pressures on the marine environment.

Following this call, several studies similar to that of the Stern Review were initiated for the Baltic Sea. The Swedish Government instructed the Swedish Environmental Protection Agency (SEPA) to compile information on the economic implications of human impact on the Baltic Sea and on the Skagerrak. The information was gathered in seven background reports in the Economic Marine Information project. In a final synthesis report *"What´s in the sea for me?"* (2009) SEPA concluded that at present, the knowledge needed for a comprehensive analysis was lacking and further research was needed. The Swedish Government decided to continue with in depth analyses regarding the socio-economic impacts of the environmental development in the Baltic Sea and in the Skagerrak.

In Finland, a report, *"The economics of the state of the Baltic Sea: Pre-study assessing the feasibility of a cost-benefit analysis of protecting the Baltic Sea ecosystem"* (2009) concluded that several ecosystem services are at risk in the Baltic Sea, and that further research on economic analysis, as well as evaluation of current environmental policies is needed.

BalticSTERN is an international research network whose purpose is to carry out cost-benefit analysis regarding the environmental problems of the Baltic Sea (including the Skagerrak). It is intended to contribute to filling in the gaps in knowledge that were pointed out by SEPA and others. BalticSTERN also aims to provide guidance regarding the cost-effective measures and policy instruments that are needed to secure the ability of the Baltic Sea ecosystem to provide ecosystem services. The acronym STERN stands for Systems Tools and Ecological-economic evaluation – a Research Network.

The research network includes partners from all the countries surrounding the Baltic Sea and is coordinated by the BalticSTERN Secretariat. The Secretariat was established at the Stockholm Resilience Centre in September 2009 and it is financed by the Swedish Environmental Protection Agency. Based on the research carried out by the network, the Secretariat will make a synthesis report directed to decision makers, which is to be published in 2012.

BalticSurvey is a subproject within BalticSTERN. It has identified how people around the Baltic Sea and parts of the Skagerrak use the sea and what attitudes they have towards the marine environment. The project was coordinated by Enveco Environmental Economics Consultancy Ltd. (Sweden) in partnership with National Environmental Research Institute, University of Aarhus (Denmark), Stockholm Environment Institute Tallinn Centre, Estonian Institute of Sustainable Development (Estonia), MTT Agrifood Research (Finland), Berlin Institute of Technology (Germany), Baltic International Centre for Economic Policy Studies (Latvia), Center for Environmental Policy

(Lithuania), Warsaw Ecological Economics Center, University of Warsaw (Poland) and Centre for Economic and Financial Research at New Economic School (Russia). Synovate Sweden coordinated the data collection.

Further information about the BalticSTERN partners, projects and publications can be found at: http://www.stockholmresilience.org/balticstern.

Contents

Summary

This report describes basic results of BalticSurvey – a project about conducting a survey in the nine littoral countries of the Baltic Sea, i.e. Denmark (DK), Estonia (EE), Finland (FI), Germany (DE), Latvia (LV), Lithuania (LT), Poland (PL), Russia (RU) and Sweden (SE). BalticSurvey has elicited information on how the general public in these countries uses the sea, and what attitudes people in these countries have towards the marine environment and towards various measures for improving the environment.

BalticSurvey is a part of the BalticSTERN research network. It is also a part of the research program *Protection of the Baltic Sea: Benefits, Costs and Policy Instruments* (PROBAPS). Funding for carrying out BalticSurvey has been received from the Swedish Environmental Protection Agency and the Finnish Advisory Board of Sectoral Research.

BalticSurvey serves three purposes:
  1. To provide new facts on use and attitudes that are of importance in their own respect.
  2. To give results that are of help for the design of forthcoming research on the benefits of marine environmental improvements.
  3. To collect data that might allow the application of the travel cost method for estimating recreational values.

The BalticSurvey work has consisted of the following phases:
  1. Initial planning (August–September 2009), including the establishment of a consortium coordinated by Enveco Environmental Economics Consultancy Ltd. (SE) in partnership with Berlin Institute of Technology (DE), National Environmental Research Institute, University of Aarhus (DK), Stockholm Environment Institute Tallinn Centre, Estonian Institute of Sustainable Development (EE), MTT Agrifood Research (FI), Center for Environmental Policy (LT), Baltic International Centre for Economic Policy Studies (LV), Warsaw Ecological Economics Center, University of Warsaw (PL) and Centre for Economic and Financial Research at New Economic School (RU).
  2. Selection of survey company (September–November 2009). Synovate Sweden AB was chosen as the executor of the survey.
  3. Preparation of a questionnaire (October 2009–April 2010), including translations of a master copy in English to twelve different language versions.
  4. Data collection (April–June 2010) executed by Synovate. In total, about 9 500 interviews were carried out in the nine Baltic Sea countries.
  5. Data analysis and reporting, which is the current phase. Basic results are presented in this report. In-depth analyses and further reporting are planned for the period of 1 September–31 December 2010.

Telephone interviews were used as the data collection mode in all countries except EE, LT and LV, in which face-to-face interviews were used. The questionnaire that was used in all interviews consisted of the following parts:

- Introduction to what the survey is about and a definition of "the Baltic Sea".
- Questions about respondents' connection to and general use of the sea, including place of living (Q1–Q7).
- Questions about one particular visit to the sea (Q8–Q19). (Data related to these questions are subject to in-depth analyses and results are not included in this report).
- Attitude questions related to the status of the marine environment, potential problems in the sea, actors that can take actions for improving the marine environment and payment modes for funding actions (Q20–Q26).
- Questions about age, gender, education, household size, number of children in the household and income (Q27–Q32).

In all the nine Baltic Sea countries except Russia, random sampling of the adult national population was applied. The sample size allowed about 1000 interviews in each country. For Russia, due to its large population and wide geographical extent, it was decided to make a separate sample for the population living in the two Russian regions situated closest to the Baltic Sea, i.e. the coastal regions of St. Petersburg and Kaliningrad (RU-c). Results from this sample were judged to be reasonably comparable to the national samples of the other countries. The sampling was made with a focus on the urban population of St. Petersburg and Kaliningrad and 1000 interviews were carried out. For having a chance of obtaining indications on use and attitudes also in the rest of Russia, 500 interviews were carried out among the population in a number of cities situated in other parts of Russia (RU-r).

Comparisons with national statistics revealed that in most countries, there was an overrepresentation of females and of relatively old respondents. In order to achieve an improved representativity of the results, weighting were therefore applied with respect to gender and age. The results presented in the report are based on weighted data, if not otherwise stated.

BalticSurvey has resulted in a data set which provides completely new and comparable insights in how people in the Baltic Sea countries use the sea and what attitudes they have towards marine environmental issues. Insights about the present use and concerns of the general public are likely to be useful for politicians and other environmental policy-makers. Some general findings are the following:

- The data indicate how often people visit the Baltic Sea for recreational purposes, and what they do when they visit the sea. The most frequent visitors are found in DK, FI and SE. On average, the respondents in these countries spent at least some leisure time at the Baltic Sea on 22–35 days of the 180 days in the period of April–September 2009.

For DE, EE, LT, LV, PL and RU-c, the corresponding interval was
9–19 days. Being at the beach or seashore for walking, sunbathing
and the like, and swimming were the most frequent activities.

- As to attitudes, the following are examples of main findings:
  - 37–47 % of respondents in PL, DE and LT tended to agree with
    the statement "I am worried about the Baltic Sea environment".
    53–77 % tended to agree in DK, LV, SE, EE, RU-c and FI.
  - In all countries except PL and SE, a majority tended to *dis*agree
    that they personally affect the Baltic Sea environment.
  - In PL and SE, a majority tended to agree with the statement "I can
    myself play a role in improving the Baltic Sea environment". In the
    other countries, 17–37 % tended to agree.
  - "Litter" is a marine issue that was regarded by a majority of the
    respondents in all countries as a rather big or very big problem in
    the Baltic Sea. The same is true in at least seven of the nine countries
    for "damage to flora and fauna in the sea", "heavy metals and
    other hazardous substances", "small everyday oil leakages",
    "possibility of major oil spill" and "algal blooms". In general,
    "gas pipelines lying at the sea bottom", "open sea water quality"
    and, in particular, "offshore wind turbines" tended to be viewed
    as less problematic in most countries.
  - In all countries, a majority tended to view it as necessary that the
    own country's wastewater treatment plants, professional fishermen,
    industry, sea transports and ports take actions to improve the
    Baltic Sea environment. A majority in DK, EE, FI, LT, PL, RU-c
    and SE thought it is necessary that their own country's farmers
    take actions.
  - A majority of the respondents in all countries considered increased
    charges on pollution emissions for individuals and enterprises to
    be an acceptable way of funding actions to improve the Baltic Sea
    environment. There is thus widespread support for the Polluter
    Pays Principle. Increases in taxes or water bills are not popular,
    though people are in general less negative towards making pay-
    ments that are paid by all and are earmarked for funding actions.

BalticSurvey has also illustrated the types of problems that are almost inevi-
table when the aim is to collect comparable data from different countries.
Complex translation issues included the use of a coherent definition of what
people are asked to focus on, in this case "the Baltic Sea". Besides the usual
need for pre-tests and a pilot study, this difficulty illustrates why involvement
of representatives from all Baltic Sea countries in the project team was necessary
for constructing the BalticSurvey questionnaire. Such co-operation is likely to
be needed whenever similar international survey projects are carried out.

Another aim of BalticSurvey was to provide input to forthcoming research
on the benefits of marine environmental improvements. Using the case of marine

eutrophication as an example, such research could be about conducting environmental valuation studies for estimating people's willingness to pay for reduced eutrophication effects. However, choosing a focus for valuation implies that other marine issues that people might care for are excluded. BalticSurvey has indicated what marine issues are perceived as problems among the general public in the different countries and therefore more is now known about what would be left out if a particular focus is chosen in valuation studies.

Sammanfattning

I den här rapporten presenteras grundläggande resultat från BalticSurvey – ett projekt i vilket en surveyundersökning har genomförts i alla länder runt Östersjön, dvs. Danmark (DK), Estland (EE), Finland (FI), Lettland (LV), Litauen (LT), Polen (PL), Ryssland (RU), Sverige (SE) och Tyskland (DE). I BalticSurvey har studerats hur allmänheten i de nio Östersjöländerna använder havet och vilka attityder som de har kring havsmiljön och åtgärder som kan vidtas för att förbättra havsmiljön.

BalticSurvey är en del av forskningsnätverket BalticSTERN och ingår även i forskningsprogrammet *Protection of the Baltic Sea: Benefits, Costs and Policy Instruments* (PROBAPS). BalticSurvey har finansierats av Naturvårdsverket och Finnish Advisory Board of Sectoral Research.

BalticSurvey har tre olika syften:
1. Att ta fram nya och i sig själva användbara fakta om användandet av havet och attityder rörande havsmiljön.
2. Att ta fram resultat som är till hjälp för utformningen av framtida forskning om det ekonomiska värdet av marina miljöförbättringar.
3. Att samla in data som kan möjliggöra en tillämpning av resekostnadsmetoden för att skatta rekreationsvärden.

Arbetet med BalticSurvey har bestått av följande faser:
1. Inledande planering (augusti–september 2009), inklusive upprättande av ett konsortium bestående av Enveco Miljöekonomi AB (koordinator) (SE), Berlin Institute of Technology (DE), National Environmental Research Institute, University of Aarhus (DK), Stockholm Environment Institute Tallinn Centre, Estonian Institute of Sustainable Development (EE), MTT Agrifood Research (FI), Center for Environmental Policy (LT), Baltic International Centre for Economic Policy Studies (LV), Warsaw Ecological Economics Center, University of Warsaw (PL) och Centre for Economic and Financial Research at New Economic School (RU).
2. Val av undersökningsföretag (september–november 2009). Synovate Sweden AB valdes som utförare av surveyundersökningen.
3. Utformning av frågeformulär (oktober 2009–april 2010), inklusive översättningar av ett original på engelska till tolv olika språkversioner.
4. Datainsamling (april–juni 2010) genomförd av Synovate. Totalt genomfördes ca 9 500 intervjuer i de nio Östersjöländerna.
5. Analys av data och rapportering, vilket är den nuvarande fasen. Grundläggande resultat presenteras i den här rapporten. Fördjupade analyser och ytterligare rapportering planeras äga rum under perioden 1 september–31 december 2010.

Telefonintervjuer användes som datainsamlingsmetod i alla länder utom EE, LT och LV, i vilka besöksintervjuer användes. Frågeformuläret som användes i alla intervjuer bestod av följande delar:

- En förklaring av vad undersökningen handlar om och en definition av "Östersjön".
- Frågor om respondenternas anknytning till och allmänna användande av havet, inklusive var de bor (fråga 1–7).
- Frågor om ett visst besök till havet (fråga 8–19). (Svaren på dessa frågor används som data för fördjupade analyser och resultat ingår därför inte i denna rapport).
- Attitydfrågor om havsmiljöns tillstånd, potentiella problem i havet, aktörer som kan vidta åtgärder för att förbättra havsmiljön och sätt att betala för att finansiera åtgärder (fråga 20–26).
- Frågor om ålder, kön, utbildning, hushållsstorlek, antal barn i hushållet och inkomst (fråga 27–32).

Slumpmässiga urval av den totala vuxna befolkningen användes i samtliga länder utom Ryssland. Med hjälp av urvalen kunde cirka 1000 intervjuer genomföras per land. Att Ryssland är ett undantag beror på landets särskilda geografiska utsträckning och stora befolkning. I Ryssland gjordes ett särskilt urval bland befolkningen i de två ryska regioner som är belägna närmast Östersjön, nämligen S:t Petersburg- och Kaliningradregionerna (RU-c). Resultat från detta urval bedömdes vara rimligt jämförbart med de nationella urvalen i de övriga länderna. Urvalet gjordes med fokus på befolkningen i städerna S:t Petersburg och Kaliningrad och 1000 intervjuer genomfördes. I syfte att få indikationer på användningen av Östersjön och attityder relaterade till havet även i resten av Ryssland genomfördes även 500 intervjuer bland den vuxna befolkningen i ett antal städer belägna i andra delar av Ryssland (RU-r).

Jämförelser med nationell statistik visade att kvinnor och äldre personer tenderade att vara överrepresenterade bland respondenterna i de flesta länderna. Insamlade data vägdes därför med avseende på kön och ålder i syfte att få mer representativa resultat. De resultat som presenteras i den här rapporten är därför baserade på vägda data, om inget annat anges.

BalticSurvey har resulterat i ett datamaterial som ger helt nya och jämförbara insikter i hur invånare i Östersjöländerna använder havet och vilka attityder de har gentemot marina miljöfrågor. Insikter i användningsmönster och åsikter hos allmänheten kan förväntas vara användbara för politiker och andra som tar beslut inom miljöområdet. Nedan sammanfattas några av resultaten.

- Resultaten indikerar hur ofta folk besöker Östersjön på sin fritid, och vad de gör när de besöker havet. Att besöka Östersjön är allra vanligast i DK, FI och SE. I genomsnitt var respondenterna i de här länderna åtminstone en liten stund vid havet på sin fritid vid 22–35 av de 180 dagarna i perioden april–september 2009. Motsvarande

intervall i DE, EE, LT, LV, PL och RU-c var 9–19 dagar. De vanligaste aktiviteterna var att vara på stranden för att promenera, ha picknick, sola, etc. eller för att bada.

- Några huvudresultat beträffande attityder är följande:
  - 37–47 % av respondenterna i PL, DE och LT tenderade att instämma i påståendet "Jag är orolig för havsmiljön". I DK, LV, SE, EE, RU-c and FI tenderade 53–77 % att instämma.
  - I alla länder utom PL och SE tenderade en majoritet att motsätta sig påståendet "Jag påverkar havsmiljön".
  - I PL och SE tenderade en majoritet att instämma i påståendet "Jag kan spela en roll för att förbättra havsmiljön". I de övriga länderna tenderade 17–37 % tenderade att instämma.
  - "Nedskräpning" är ett fenomen som sågs som ett ganska stort eller mycket stort problem i Östersjön av en majoritet av respondenterna i alla länder. Detsamma gällde i åtminstone sju av nio länder för "skador på växt- och djurlivet", "tungmetaller och andra miljögifter", "små men ofta förekommande oljeutsläpp", "risken för ett stort oljeutsläpp" och "algblomningar". Generellt tenderade "gasledningar på havsbottnen", "vattenkvaliteten i öppna havet" och, i synnerhet, "vindkraftverk till havs" att ses som mindre problematiskt i de flesta länderna.
  - I alla länder tenderade en majoritet att anse att det är nödvändigt att det egna landets reningsverk, yrkesfiskare, industrier, sjöfarten och hamnar gör åtgärder för att förbättra havsmiljön. I DK, EE, FI, LT, PL, RU-c och SE ansåg en majoritet att det är nödvändigt att det egna landets lantbrukare vidtar åtgärder.
  - I alla länder tyckte en majoritet av respondenterna att höjda avgifter för enskilda personer och företag på utsläpp av föroreningar är ett acceptabelt sätt att finansiera åtgärder som förbättrar havsmiljön. Det finns således ett brett stöd för principen om att förorenaren betalar (Polluter Pays Principle). Höjningar av skatter eller vatten- och avloppstaxor är inte populära, men folk har i allmänhet en mindre negativ inställning till att införa betalningar som alla betalar och som är öronmärkta för åtgärder.

BalticSurvey har vidare illustrerat de typer av problem som är närmast ofrånkomliga närhelst syftet är att samla in jämförbara data från olika länder. Det kan t.ex. vara svårt att finna rimliga och enhetliga översättningar av det som de tillfrågade ombeds fokusera på, i det här fallet "Östersjön". Sådana svårigheter visade att det som vanligt är viktigt att göra tester och en pilotstudie, men även att det var nödvändigt att partners från alla Östersjöländer deltog i processen med att ta fram ett frågeformulär. Samarbete av liknande slag behövs sannolikt alltid när liknande internationella surveyundersökningar ska genomföras.

Ett annat syfte med BalticSurvey var att ta fram underlag för framtida forskning om det ekonomiska värdet av marina miljöförbättringar. Om marin eutrofiering används som ett exempel kan sådan forskning handla om att genomföra miljövärderingsstudier för att skatta folks betalningsvilja för minskade eutrofieringseffekter. Att miljövärderingen begränsar sig till minskade eutrofieringseffekter innebär dock att andra angelägna marina miljöfrågor hamnar utanför. BalticSurvey har indikerat vilka marina frågor som allmänheten i Östersjöländerna ser som problem. Därför finns nu mer kunskap om vad som utelämnas om ett visst fokus väljs för värderingsstudierna.

1. Introduction

This report describes the basic results of a survey conducted in the nine littoral countries of the Baltic Sea, i.e. Denmark (DK), Estonia (EE), Finland (FI), Germany (DE), Latvia (LV), Lithuania (LT), Poland (PL), Russia (RU) and Sweden (SE). The survey elicits information on how the general public in these countries uses the sea, and what attitudes people in these countries have towards the marine environment and towards various measures for improving the environment. This survey study is called *BalticSurvey*. It was carried out simultaneously in all the nine countries and included identical questions to obtain coherent data that are comparable across countries.

BalticSurvey is a project which is a part of the BalticSTERN research network.[1] It also constitutes work task 1 of work package 2 of the research program *Protection of the Baltic Sea: Benefits, Costs and Policy Instruments* (PROBAPS). Funding for carrying out BalticSurvey has been received from the Swedish Environmental Protection Agency and through PROBAPS from the Finnish Advisory Board of Sectoral Research. The funding from PROBAPS has paid for the work carried out by the Finnish partner in BalticSurvey and the funding from the Swedish EPA has covered all other BalticSurvey costs.

The need for BalticSurvey is explained by the fact that until now, coherent information on people's use of and attitudes about the Baltic Sea for all the nine Baltic Sea countries has not existed. Such facts on use and attitudes are not only important to decision-makers, but also for judging how further research on the benefits of an improved marine environment would best be designed. Estimation of these benefits by Baltic-wide, coordinated valuation studies is the aim of work task 2 of work package 2 of PROBAPS. Moreover, the facts from BalticSurvey on use and travel behaviour might be used for estimating recreational values related to the Baltic Sea, employing the so-called travel cost method.

BalticSurvey thus serves three purposes:
1. To provide new facts on use and attitudes that are of importance in their own respect.
2. To give results that are of help for the design of the valuation studies of work task 2.
3. To collect data that might allow the application of the travel cost method for estimating recreational values, preliminary following the approach by Vesterinen et al. (2010).

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[1] See http://www.stockholmresilience.org/balticstern.

Data collection for BalticSurvey was coordinated by Synovate Sweden AB (Synovate henceforth) and was executed by Synovate in all nine countries in April–June 2010 by telephone interviews in DE, DK, FI, PL, RU and SE and face-to-face interviews in EE, LT and LV.

The rest of this report is organized as follows. The next section (2) explains how the project has been carried out so far and the present status of the project. Section 3 introduces the survey and Section 4 contains the results. Conclusions are found in Section 5.

2. The project work

The work in BalticSurvey has consisted of the following phases:

1. *Initial planning* (August–September 2009), which included the following parts (see also Hasselström et al. 2009):
   a. Establishment of a consortium of partners in which all nine littoral Baltic Sea countries are represented, see Table 2.1.
   b. Contacts with potentially suitable survey companies, including tender inquires to a selection of these companies.
   c. Brainstorming by all partners about potentially suitable questions to include in the BalticSurvey questionnaire, resulting in a gross list of questions.

2. *Selection of survey company* (September–November 2009). The particular nature of BalticSurvey required a survey company which could simultaneously carry out an interview study in all nine Baltic Sea countries. An examination of the tenders received resulted in the selection of Synovate as the coordinator and executor of the data collection.

3. *Preparation of questionnaire*
   a. A master copy questionnaire in English was developed during October 2009–April 2010. The final version of the master copy was completed on 11 April 2010. This was a gradual and not uncomplicated development based on, for example:
      • Discussions among partners at a phone meeting on 30 October 2009.
      • Discussions at a project meeting in Helsinki 18–19 November 2009.
      • Pre-tests of questions carried out by partners in December 2009–January 2010.
      • Pilot studies in all countries carried out by Synovate in February 2010.
   b. Translation of master copy questionnaire in English to national languages (December 2009–April 2010). All final versions of the translations were completed on 14 April 2010. Translations were made by partners and resulted in questionnaires available in twelve language versions:
      • DE: German
      • DK: Danish
      • EE: Estonian and Russian
      • FI: Finnish and Swedish
      • LT: Lithuanian
      • LV: Latvian and Russian
      • PL: Polish
      • RU: Russian
      • SE: Swedish

4. *Data collection.* Synovate transformed the translated questionnaires into a format suitable for interviewing and subsequently carried out the interviews in all countries during 19 April–25 June 2010.
5. *Data analysis and reporting*, which is the current phase. Basic results including descriptive statistics are presented in this report. In-depth analyses and further reporting are planned for the period of 1 September–31 December 2010.

Table 2.1. The project consortium.

Country	Organization	Contact person
Denmark (DK)	National Environmental Research Institute, University of Aarhus	Berit Hasler
Estonia (EE)	Stockholm Environment Institute Tallinn Centre, Estonian Institute of Sustainable Development, Tallinn	Heidi Tuhkanen
Finland (FI)	MTT Agrifood Research, Helsinki	Anni Huhtala
Germany (DE)	Berlin Institute of Technology, Berlin	Jürgen Meyerhoff
Latvia (LV)	Baltic International Centre for Economic Policy Studies (BICEPS), Riga	Alf Vanags
Lithuania (LT)	Center for Environmental Policy, Vilnius	Daiva Semeniene
Poland (PL)	University of Warsaw, Warsaw Ecological Economics Center	Mikolaj Czajkowski
Russia (RU)	Centre for Economic and Financial Research (CEFIR) at New Economic School, Moscow	Natalia Volchkova
Sweden (SE)	Enveco Environmental Economics Consultancy Ltd. Stockholm (coordinator)	Tore Söderqvist (project leader)

3. The survey

3.1 Introduction

A crucial point of departure for the design of the survey questions was a need for results that are comparable across the nine Baltic Sea countries. This calls for identical questions and also that the same information is provided to the respondents. Comparability would also be facilitated by using the same data collection mode in as many countries as possible. The choice of data collection mode is also an important determinant of the number and framing of questions and also for the amount and type of information that can be communicated to respondents. Another important point of departure was that BalticSurvey should give results that are nationally representative for each of the Baltic Sea countries. This implies that the questions and information have to be comprehensible to the general public in each of the countries, also for people who know very little about the Baltic Sea.

3.2 Data collection mode

Phase 1 of the project work indicated that survey companies consistently recommended telephone interviews for reasons of cost-effectiveness, comparability and operability. Hence, there are several advantages associated with the use of telephone interviews, which therefore were selected as the main data collection mode. However, it is important to note that there may also be some disadvantages with the chosen approach. For example, questions can be expected to be complicated, because respondents are probably somewhat unfamiliar with articulating their attitudes and experience related to the environmental status of the Baltic Sea.

Budget constraints for the project implied a maximum average interview length of about 15 minutes. Considering the number of questions and issues that still was judged as necessary to include in the questionnaire, it is evident that respondents did not have much time to think about their answers. In addition, the use of interviews implies that the results may be affected by interviewer bias. Hence, respondents' comprehension of questions may be affected by the clarity of the interviewers' voice and speed of speech. Also, the extent to which respondents feel comfortable about asking clarifying questions or ask for questions to be repeated may vary among interviewers depending on the interviewers' attitudes, e.g. whether their voice sounds nice or efficient.

In the end, telephone interviews were used in all countries except for EE, LT and LV, in which face-to-face interviews turned out to be the only feasible option due to factors such as low incidence rate of fixed lines phones. The fact that different data collection modes have been used could potentially affect the comparability across countries. However, in the present context biases caused by differences in modes are believed to be minor, and hence it will not be discussed any further.

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3.3 The questionnaire

The restrictions implied by the need for comparability and the telephone interview setting in most countries implied the development of a questionnaire that eventually consisted of the parts listed below. The master copy questionnaire in English is found in Appendix A and all translated questionnaires are downloadable from www.naturvardsverket.se/balticstern and www.stockholmresilience.org/balticstern.

- Introduction to what the survey is about. This introduction included an explanation of what is meant by "the Baltic Sea". In the master copy, this definition was as follows:
  "By 'the Baltic Sea' we mean the whole sea around which you find Finland, Russia, Estonia, Latvia, Lithuania, Poland, Germany, Denmark and Sweden. And by 'the Baltic Sea' we also refer to both the waters and the shores of the sea".

  It should be noted that when terms as "the marine environment" and "the sea" is used in this report, they refer only to the Baltic Sea according to this definition, if not otherwise stated.

  The translations of the definition differed somewhat among countries in order to make it comprehensible. For example, Swedish respondents were asked to consider also Västerhavet, i.e. the Swedish part of the Kattegat and the Skagerrak. As another example, Danish respondents were similarly asked/told to consider the Kattegat, Skagerrak as well as the Danish Straits, the eastern coast and fjords as well as the Smålandsfarvand south of Sealand and Funen; in this connection is should be noted that this definition of the Baltic Sea may be somewhat different – i.e. more extended – that what is commonly considered among Danes to represent the Baltic Sea.
- Questions about respondents' connection to and general use of the sea, including place of living (Q1–Q7).
- Questions about one particular visit to the sea (Q8–Q19). These questions are for the particular purpose of enabling an application of the travel cost method for estimating recreational values.
- Attitude questions related to:
  - The status of the marine environment (Q20–Q21).
  - General statements about the marine environment (Q22).
  - Issues that might be a problem in the sea (Q23).
  - The respondents' perception of themselves as an actor that can take actions for improving the marine environment (Q24).
  - Other actors that can take actions for improving the marine environment (Q25).
  - Different ways in which actions can be funded (Q26).
- Questions about age, gender, education, household size, number of children in the household and income (Q27–Q32).

In several of the questions, respondents were asked to respond to several different statements, issues etc. The order in which they were mentioned to the respondents was random in order to avoid order effects.

3.4 Sampling

In all the nine Baltic Sea countries except Russia, random sampling of the adult national population was applied. The sample size allowed about 1000 interviews in each country. Synovate's standard procedures for sampling of the national population for this type of a survey were applied, see Appendix B for details.

As to Russia, its large population and wide geographical extent, with parts of the country situated very far from the Baltic Sea, introduced difficulties in identifying a reasonable sampling strategy. The solution became to make a separate sample for the population living in the two Russian regions situated closest to the Baltic Sea, i.e. the St. Petersburg and Kaliningrad regions. Results from this sample were judged to be reasonably comparable to the national samples of the other countries and therefore the presentation of Russian results in Section 4 are confined to results from this coastal sample, which is referred to as RU-c in the following. Following Synovate's standard procedure (see Appendix B), the sampling was made with a focus on the urban population of St. Petersburg and Kaliningrad and 1000 interviews were carried out. However, it was also considered to be important to have a chance of obtaining indications on how use and attitudes might differ between RU-c and the rest of Russia. Again following Synovate's standard procedure, 500 interviews were therefore also carried out among the population in a number of cities situated in other parts of Russia. For the results for this sample for the rest of Russia (RU-r), the reader is referred to Appendix C.

Table 3.1 provides an overview of sampling and data collection modes in the different countries, see also Appendix B. It should be noted that the standard procedures for sampling implied that the age intervals for sampled individuals are not the same in all countries. This difference reduces the comparability of results across countries.

Table 3.1 also gives the unit response rates, defined as the number of interviews divided by the number of sampled individuals. Except for the case of Russia, there is a clear tendency that the use of face-to-face interviews resulted in a higher response rate than telephone interviews. The response rates experienced for the telephone interview surveys in DK, FI and SE corresponds well to what could be expected for a survey of this kind, but the rates are still low enough to cause representativity problems. In particular, non-busy people who are easy to reach by phone at home are likely to become overrepresented. This problem is typically handled by a weighting procedure, which was indeed applied for all countries, see Section 4.1. The especially low response rates for DE and PL might make one to believe that there was a strong tendency for people living quite far from the Baltic Sea to decline participation in the survey, which could result in that this part of the population becomes under-

represented in the survey. However, it turns out that this was hardly the case. In DE, the federal states were covered reasonably well – 93 % of the respondents lived in federal states not having a Baltic Sea coast, which corresponds well to the population distribution across federal states. The corresponding proportion for respondents in non-coastal provinces in PL was 90 %.

Table 3.1. Overview of sampling, data collection modes and response rates.

Country	Data collection mode	Number of interviews	Age of sampled individuals (years)	Unit response rate (per cent)
DE	Telephone interviews	1000	≥ 15	5.7
DK	Telephone interviews	999	≥ 16	13.7
EE	Face-to-face interviews	1001	15–74	29.5
FI	Telephone interviews	1007	≥ 15	20.6
LT	Face-to-face interviews	1032	15–74	45.7
LV	Face-to-face interviews	1060	15–74	46.5
PL	Telephone interviews	1010	≥ 16	7.7
RU-c	Telephone interviews	1000	18–64	41.0
RU-r	Telephone interviews	500	18–64	
SE	Telephone interviews	1017	≥ 16	19.7
	Total	9626		

4. Results

4.1. Introduction

The basic results that are presented in the next subsections are about the respondents' answers to the questions about connection to the sea (Q2–Q7, subsection 4.2) and about general attitudes (Q20–26, subsection 4.3). Q8–Q19 are questions about one particular visit to the sea made by the respondents and were designed with the specific purpose to enabling an application of the travel cost method for estimating recreational values. This analysis of the responses to Q8–Q19 is a part of forthcoming work and therefore the results related to these questions are not presented in this report.

Q27–Q32 gave socio-demographic information about the respondents and thus allowed comparisons with national statistics in order to check the representativity of the respondents. These comparisons revealed that in most countries, there were an overrepresentation of females and relatively old respondents. In order to achieve an improved representativity, weighting were therefore applied with respect to gender and age, following the procedure described in Appendix D.

All descriptive statistics presented below are based on weighted data, if not otherwise stated. This means that when results below refer to, for example, per cent of respondents, "respondents" should be interpreted in the context of weighting. That is, the per cent figure is the result of weighting, where different respondents have been assigned different weights dependent on their gender and age, see Appendix D. The weighting implies a much more solid ground for interpreting the results as representative for the adult general public in the different countries.

However, while the weighting has improved the representativity, this is not to say that all sources of overrepresentation or underrepresentation have been taken into account. In particular, there is an almost unavoidable risk of an over-representation of respondents who are more interested in the subject the interview survey is about than an average individual of the sampled population. This is one reason for why *absolute* figures presented below for individual countries should be interpreted with care. However, it is not unlikely that this kind of overrepresentation is present in a similar way in every country, which makes it valid to make *comparisons* across countries. But there are also reasons to take such comparisons with a grain of salt. For example, while efforts were taken to ensure that respondents in all countries gave answers based on an identical or at least a very similar definition of "the Baltic Sea", it cannot be precluded that some respondents had another view of what is meant by "the Baltic Sea" in their mind. For example, there are indications that some Danish respondents gave responses based on a more narrow definition of "the Baltic Sea" (viz. the sea East of Bornholm) than that mentioned by the interviewer in the beginning of the interview. However, we apply a hypothesis that the great majority of respondents adhered to the definition of "the Baltic Sea" actually provided by the interviewer. The descriptive statistics presented in the following subsections are therefore based on all respondents.

Indications of other types of overrepresentation and underrepresentation may also be obtained by respondents' level of education, household structure and income. For each of the countries, Appendix E provides descriptive statistics based on weighted data for Q27–Q32 on age, gender, education, household size, number of children in the household and income. While it is often difficult to make straightforward comparisons to population statistics for education, household structure and income, Appendix E suggests that there is a tendency in most countries that well-educated people are overrepresented in the survey, which is also likely to imply that high-income groups are overrepresented. However, additional weighting for taking take these potential imbalances into account was not applied.

The descriptive statistics that follow in the next subsections[2] vary somewhat depending on the type of question and what response options were given, but the results for most questions are described by median, mean and standard deviation values and percentages of respondents for each response option.[3] Descriptive statistics presented in tables have been computed without taking "don't know" answers into account. The information on number of observations (Nobs) in the tables below thus refers to the number of respondents who gave a valid response, excluding "don't know" answers. In this connection it is important to note that the proportion of "don't know" answers varies substantially across countries for some questions. This suggests that interviewers have not been equally inclined to provide respondents with the option to answer "don't know". This may have important implications in relation to the comparability of results across countries. Comments are therefore found in the text in cases when the number of "don't know" answers and/or the item non-response rate have been remarkably different across countries.

4.2. Connection to the sea

From Q2–Q7, information is obtained about how far from the sea the respondents live (Q2), if they have or have had any occupation dependent on the sea (Q3), to what extent they visit the sea (Q4–Q6), and what they do when they visit the sea (Q7).

Table 4.1 shows that the proportion of respondents saying that they have or have had an occupation that is dependent on the sea is less than or equal

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[2] Diagrams illustrating the results in the tables in the next subsections are found in the separate SEPA report "BalticSurvey – a study in the Baltic Sea countries of public attitudes and use of the sea: Summary of main results".

[3] The median and the mean are both measures of central tendency. The mean gives an average computed as the sum of data points (values of responses, e.g. "5" as a response to an attitude question) divided by the number of data points (number of responses, e.g. "1000" if there were 1000 respondents to the attitude question). The median is defined as the middle value in a set of data points when these data points have been sorted from the lowest value to the highest value. This implies that the median gives information about what data points (values of responses) have been given by a majority of respondents. The standard deviation shows how much variation from the mean there is in the data. For example, a low standard deviation indicates that data points (values of responses) tend to be distributed relatively close to the mean.

to about 10 % in all the countries. The main purpose of the question was to explore whether respondents perceive that there is some dependence between their occupation and the sea irrespective of how this dependence looks like. That is, some respondents might have interpreted the question very concretely (e.g. jobs on ferries going from Helsinki to Stockholm), while others might have thought about jobs that are very indirectly dependent on the sea (e.g. jobs at a factory producing components to boats that buyers might use in the sea).

While people's professional experience of the sea is limited, most of them have been to the sea to spend leisure time there. Table 4.2 indicates that at in all the countries except RU-c, more than 80 % of the respondents have been to the sea at least once. The highest percentage, 98 %, is found in SE. In RU-c, almost 50 % of the respondents have been to the sea to spend leisure time.

Q5 was posed to those respondents who have visited the sea at least once. Table 4.3 shows some variation among countries concerning the time of the respondents' most recent visit to the sea to spend leisure time there. This most recent visit occurred in the last 12 months for a majority of respondents in DK, EE, FI, LV and SE. For DE, PL and RU-c, the most recent visit took place more than 5 years ago for 30–40 % of the respondents.

Table 4.1. Q3. Do you have or have had an occupation that is somehow dependent on the Baltic Sea?

	DE	DK	EE	FI	LT	LV	PL	RU-c	SE
% yes	4.0	6.4	10.2	7.7	3.3	6.7	6.6	7.2	9.6
% no	96.0	93.6	89.8	92.3	96.7	93.3	93.4	92.8	90.4
Nobs	1000	999	1001	1007	1032	1048	1010	1000	1017

Table 4.2. Q4. Have you ever been to the Baltic Sea to spend leisure time there? This could be about swimming, boating and fishing, but also for example walking along the seashore, skating and going on a cruise.

	DE	DK	EE	FI	LT	LV	PL	RU-c	SE
% yes	81.8	90.3	89.9	84.9	88.4	86.7	90.0	49.4	97.9
% no	18.2	9.7	10.1	15.1	11.6	13.3	10.0	50.6	2.1
Nobs	1000	999	1001	1007	1032	1060	1010	1000	1017

Table 4.3. Q5. When was your last visit to the Baltic Sea to spend leisure time there?

	DE	DK	EE	FI	LT	LV	PL	RU-c	SE
Nobs	818	902	900	855	912	919	909	494	991

In the last 12 months, that is in April 2009 to March 2010?

	DE	DK	EE	FI	LT	LV	PL	RU-c	SE
% yes	26.4	68.1	68.1	59.4	44.5	56.2	38.3	25.4	77.8

In the last 5 years, but not in the last 12 months?

	DE	DK	EE	FI	LT	LV	PL	RU-c	SE
% yes	38.7	20.5	17.7	25.1	33.3	26.0	31.1	35.7	17.3

More than 5 years ago?

	DE	DK	EE	FI	LT	LV	PL	RU-c	SE
% yes	34.8	11.3	14.2	15.5	22.3	17.8	30.7	38.9	4.9

In Q6, respondents who had made a visit to the sea in the last twelve months were asked to report how often they had been to the sea. As shown in Tables 4.4 and 4.5, this question was divided into two parts: Q6a concerning the six-month period of April–September 2009 and Q6b concerning the six-month period of October 2009–March 2010. The frequency of visits was measured as the number of days in which the respondents have spent at least some leisure time at the sea. Consequently, the maximum value is 180 days for both Q6a and Q6b.

The mean values suggest that visits to the sea are most frequent in SE, DK and FI, and least frequent in LT, DE, LV and PL. This is true for both 6-month periods, but the number of days with a visit is not surprisingly considerably lower for all countries for the October–March period.

Table 4.4. Q6a. Now think about the months of April to September 2009. This means about 180 days. At about how many of these days did you spend at least some leisure time at the Baltic Sea?

	DE	DK	EE	FI	LT	LV	PL	RU-c	SE
Median	8	10	10	7	5	7	10	10	15
Mean	13.25	26.35	19.40	21.57	9.06	13.69	13.70	15.80	35.01
Std.dev.	22.74	40.57	25.65	36.90	12.12	18.96	17.83	22.01	45.70
Nobs	216	614	608	508	394	490	348	125	770

Table 4.5. Q6b. And now think about the months of October 2009 to March 2010. Again, this means about 180 days. At about how many of these days did you spend at least some leisure time at the Baltic Sea?

	DE	DK	EE	FI	LT	LV	PL	RU-c	SE
Median	0	3	1	2	0	0	0	0	3
Mean	6.01	13.61	6.18	12.35	1.70	3.72	3.84	6.41	17.06
Std.dev.	17.25	32.18	15.82	32.40	4.19	11.18	11.46	18.35	37.99
Nobs	216	614	583	508	333	487	348	125	766

The respondents' answers to Q7 indicate what they do when they visit the sea. In Q7, respondents were asked to consider the whole period of April 2009–March 2010 and the particular days on which they spent at least some leisure time at the sea. They were requested to report on how many of these days they undertook different activities, see Table 4.6 for results. The most common activities in all countries are swimming (in the sea) and being at the beach or seashore for walking, sunbathing or the like. It could be remarked that diving (in the sea) was not necessarily interpreted by the respondents as diving with special equipment but could also be about just being under the water surface when swimming.

Table 4.6. Q7. Now think about the last 12 months, i.e. April 2009 to March 2010, and the days you spent at least some leisure time at the Baltic Sea. At about how many of these days did you do the following?

	DE	DK	EE	FI	LT	LV	PL	RU-c	SE
a. Swimming (in the sea)									
% 0 days	39.7	46.7	22.9	52.6	13.5	17.6	39.0	47.3	32.0
% 1–4	31.1	20.4	33.3	24.8	43.3	31.6	22.0	18.0	21.5
% 5–9	13.8	12.2	15.2	6.7	22.7	16.7	19.8	7.5	11.3
% 10–19	11.0	11.6	13.9	6.3	14.3	17.7	13.7	19.8	15.3
% 20–29	2.3	3.5	6.8	2.6	3.0	7.8	3.1	2.9	8.4
% 30–39	.0	2.6	4.8	2.8	1.9	4.8	2.2	2.6	4.5
% 40–49	.3	.8	.7	.5	.3	1.4	.3	.0	1.2
% ≥ 50 days	1.7	2.3	2.5	3.6	.9	2.4	.0	1.9	5.8
Nobs	216	614	613	494	404	490	348	125	769
b. Diving (in the sea)									
% 0 days	92.0	92.6	96.2	86.9	82.7	91.9	89.8	98.4	73.8
% 1–4	2.9	3.6	2.1	5.7	10.3	2.6	6.4	1.0	8.6
% 5–9	1.9	1.4	.4	2.4	4.4	1.5	2.1	.6	4.1
% 10–19	1.6	1.0	.8	3.0	2.0	1.4	1.1	.0	6.5
% 20–29	.7	.6	.0	.6	.7	1.2	.0	.0	3.5
% 30–39	.0	.2	.4	.7	.0	.4	.3	.0	1.3
% 40–49	.0	.1	.0	.0	.0	.2	.3	.0	.8
% ≥ 50 days	.9	.4	.0	.8	.0	.9	.0	.0	1.3
Nobs	216	614	613	486	397	512	348	125	770
c. Windsurfing, water skiing									
% 0 days	90.3	96.5	96.8	96.6	97.4	97.9	96.7	97.1	95.6
% 1–4	3.9	1.7	2.3	2.4	2.1	1.4	2.3	2.0	3.6
% 5–9	1.8	.4	.4	.8	.3	.0	.0	.9	.2
% 10–19	2.7	.4	.2	.2	.0	.4	1.0	.0	.2
% 20–29	.0	.1	.1	.0	.0	.3	.0	.0	.0
% 30–39	1.3	.0	.0	.0	.0	.0	.0	.0	.0
% 40–49	.0	.0	.0	.0	.0	.0	.0	.0	.0
% ≥ 50 days	.0	.8	.2	.0	.3	.0	.0	.0	.4
Nobs	216	614	613	486	396	511	348	125	771
d. Boating – e.g. sailing, power boating, rowing, canoeing/kayaking									
% 0 days	70.3	70.3	80.3	54.5	90.7	92.0	71.3	91.9	54.5
% 1–4	20.5	15.0	12.3	22.6	8.3	4.9	23.9	6.7	20.5
% 5–9	3.1	4.5	3.7	5.9	.4	1.2	2.2	.7	9.4
% 10–19	3.2	4.1	2.5	6.2	.3	.6	1.0	.0	5.8
% 20–29	.4	2.3	.3	4.4	.0	.8	.3	.0	3.6
% 30–39	.9	1.3	.2	2.0	.0	.6	.0	.7	1.6
% 40–49	.4	.2	.0	1.3	.3	.0	.9	.0	.9
% ≥ 50 days	1.1	2.2	.6	3.0	.0	.0	.3	.0	3.7
Nobs	216	614	613	493	396	511	347	125	770
e. Jigging									
% 0 days	98.9	98.7	97.5	93.4	97.8	97.2	100.0[a]	87.4	93.4
% 1–4	.0	1.1	1.5	3.4	1.0	1.6	0	9.2	3.4
% 5–9	1.1	.1	.2	2.0	.9	.4	0	2.0	.6
% 10–19	.0	.0	.4	1.0	.3	.6	0	.7	1.2
% 20–29	.0	.0	.0	.2	.0	.0	0	.0	.9
% 30–39	.0	.0	.2	.0	.0	.2	0	.8	.0
% 40–49	.0	.0	.0	.0	.0	.0	0	.0	.0
% ≥ 50 days	.0	.0	.2	.0	.0	.0	0	.0	.5
Nobs	216	614	613	486	387	511	0	125	768

	DE	DK	EE	FI	LT	LV	PL	RU-c	SE
f. Other types of fishing than jigging									
% 0 days	94.4	84.9	88.9	75.1	90.6	95.0	94.0	80.3	74.5
% 1–4	2.6	9.3	5.1	11.2	5.3	2.7	3.7	11.7	13.6
% 5–9	1.9	1.4	2.3	4.5	.7	1.0	2.3	3.8	4.0
% 10–19	.0	2.2	2.2	4.2	2.8	.9	.0	2.0	5.4
% 20–29	.7	.8	.8	1.8	.6	.2	.0	1.5	1.2
% 30–39	.0	.4	.4	1.5	.0	.2	.0	.8	1.1
% 40–49	.0	.3	.0	.5	.0	.0	.0	.0	.0
% ≥ 50 days	.4	.7	.4	1.1	.0	.0	.0	.0	.3
Nobs	216	614	613	488	390	512	347	125	769
g. Being at the beach or seashore for walking, picnicking, sunbathing, visiting touristic or cultural sites, etc.									
% 0 days	10.8	6.5	7.3	14.4	4.0	5.7	2.2	7.0	7.5
% 1–4	29.3	27.2	28.0	33.3	44.6	36.8	27.9	29.2	24.2
% 5–9	29.2	21.1	18.0	14.7	24.1	17.3	24.2	16.7	15.7
% 10–19	23.2	16.7	18.1	11.9	18.7	19.6	31.2	23.0	18.4
% 20–29	4.2	9.4	8.9	8.2	3.2	7.5	7.3	7.0	10.5
% 30–39	.4	5.8	7.5	4.6	2.6	5.2	3.6	8.2	6.7
% 40–49	.4	1.8	1.9	1.5	1.0	1.9	1.4	3.4	3.0
% ≥ 50 days	2.4	11.5	10.3	11.4	1.7	5.9	2.1	5.6	13.9
Nobs	216	614	613	498	402	465	346	125	770
h. Skating, skiing									
% 0 days	96.4	97.5	95.0	88.3	99.0	97.1	100.0[a]	92.1	88.6
% 1–4	2.0	1.8	2.2	6.8	.3	1.7	0	7.9	6.3
% 5–9	.7	.1	.5	2.1	.2	.6	0	.0	2.0
% 10–19	.0	.6	1.3	1.1	.5	.4	0	.0	1.9
% 20–29	.0	.0	.3	.5	.0	.0	0	.0	.6
% 30–39	.9	.0	.7	.5	.0	.2	0	.0	.2
% 40–49	.0	.0	.0	.4	.0	.0	0	.0	.0
% ≥ 50 days	.0	.0	.0	.2	.0	.0	0	.0	.4
Nobs	216	614	613	488	384	511	0	125	771
i. Going on a cruise/using water-based transportation for recreation									
% 0 days	65.3	72.6	75.6	30.2	95.3	92.2	57.2	94.6	53.3
% 1–4	27.9	20.7	19.7	59.4	4.5	6.4	37.9	4.3	36.4
% 5–9	2.9	3.8	2.2	6.4	.2	.6	3.3	1.1	5.1
% 10–19	3.5	2.0	2.0	2.8	.0	.8	.3	.0	3.6
% 20–29	.0	.7	.5	.4	.0	.0	.8	.0	.6
% 30–39	.0	.1	.0	.2	.0	.0	.4	.0	.2
% 40–49	.0	.1	.0	.2	.0	.0	.0	.0	.0
% ≥ 50 days	.4	.0	.0	.3	.0	.0	.0	.0	.8
Nobs	216	614	613	498	392	513	346	125	771

[a] By assumption (jigging, and skating and skiing were not included as options in the Polish questionnaire).

4.3. General attitudes

The attitude questions Q20–Q26 all involved the use of a scale from 1 to 5. The answers to these questions are therefore presented by giving the percentage of the respondents who gave 1, 2, 3, 4 or 5 as their answer. Also the median, mean and standard deviation of the responses are presented. The mean has a meaningful interpretation only if one assumes that the 1–5 scale was viewed as a linear scale by the respondents, i.e. if the respondents considered any one-step move in the scale (i.e. from 1 to 2, from 2 to 3, from 3 to 4, and from 4 to 5) to be equally large.

Q20 and Q21 are both about respondents' opinion about the status of the marine environment; Q20 is about the status of the marine environment within the borders of the respondent's country while Q21 poses the question from the perspective of the whole Baltic Sea. The mean values in Tables 4.7 and 4.8 suggest a slight tendency among respondents in all countries except PL and RU-c to view the status of one's own country's part of the sea as being *better* than the status of the sea as a whole.

Table 4.7. Q20. In your opinion, what is on average the status of the environment in the XXXish [refers to the respondent's own country] part of the Baltic Sea? Please use a scale from 1 to 5, where 1 stands for "very bad" and 5 stands for "very good". The numbers in between serve to graduate your assessment.

	DE	DK	EE	FI	LT	LV	PL	RU-c	SE
Median	4	3	3	3	3	3	3	3	3
Mean	3.63	3.41	2.94	2.78	2.93	3.23	3.19	2.63	3.12
Std.dev.	.82	.87	.72	.83	.91	.86	1.45	1.01	.85
Nobs	1000	942	944	988	957	953	1010	1000	971
% 1	1.1	1.9	2.2	5.5	6.4	2.9	17.8	19.5	2.4
% 2	10.2	10.1	21.4	27.2	24.7	13.5	15.4	15.7	19.6
% 3	30.6	42.1	57.1	51.8	41.1	47.9	20.8	52.1	45.1
% 4	47.9	36.1	18.2	13.5	25.8	29.6	21.0	9.5	29.2
% 5	10.2	9.8	1.1	2.0	1.9	6.1	25.0	3.3	3.6

Note: 2, 3 and 4 should be interpreted as "rather bad", "neither bad nor good" and "rather good", respectively.

Table 4.8. Q21. In your opinion, what is on average the status of the Baltic Sea environment in general? Please use a scale from 1 to 5, where 1 stands for "very bad" and 5 stands for "very good". The numbers in between serve to graduate your assessment.

	DE	DK	EE	FI	LT	LV	PL	RU-c	SE
Median	3	3	3	2	3	3	3	3	3
Mean	3.43	2.98	2.87	2.29	2.92	3.12	3.26	2.87	2.77
Std.dev.	.84	.89	.74	.76	.86	.83	.85	1.00	.83
Nobs	1000	921	900	986	934	927	1010	1000	954
% 1	1.3	4.0	2.7	12.6	4.5	3.3	1.9	14.1	6.1
% 2	14.1	21.1	25.0	50.1	26.7	14.8	14.6	12.1	28.8
% 3	36.6	49.2	54.7	32.3	42.7	52.9	45.7	51.6	47.6
% 4	41.0	20.6	17.0	4.7	24.9	24.4	33.9	18.3	16.6
% 5	7.1	5.1	.5	.3	1.2	4.6	3.9	3.8	.9

Note: 2, 3 and 4 should be interpreted as "rather bad", "neither bad nor good" and "rather good", respectively.

Q22, see Table 4.9 for descriptive statistics, is about how the respondents agree or disagree with a number of statements about the marine environment. The table indicates that in all countries, at least a third of the respondents answered either "I totally agree" or "I agree rather than disagree" regarding the statement "I am worried about the Baltic Sea environment" (Q22a). The statement in Q22b was about whether respondents feel that the environmental problems of the Baltic Sea belong to the three most important environmental problems in their own countries. In all countries except for DE and DK, a majority of respondents answered either "I totally agree" or "I agree rather than disagree". For DE and DK, this proportion was 25 % and 37 %, respectively. As to the respondents' perception on whether the Baltic Sea environment has improved or deteriorated during the last 10 years, there is a tendency in most countries to agree on there being a deterioration rather than there being an improvement. This tendency is particularly strong for RU-c. However, German and Polish respondents are on average more inclined to the view that an improvement has taken place. The number of observations tends to be lower for the two statements about how the environment has changed in the last 10 years, which suggests that respondents were relatively uncertain when they assessed these two statements.

It is not very common that respondents feel that the Baltic Sea water quality at present restricts recreational opportunities. For example, the response to this statement was "I totally disagree" by a majority of respondents in DK and SE. This indicates that there are generally other marine environmental aspects than water quality that people are concerned about. Finally, the answers to Q22f suggest that in most countries, respondents do not feel that they are affecting the Baltic Sea environment themselves. In most countries, a majority of respondents answered "I totally disagree" or "I disagree rather than agree". It is interesting to note that the exceptions are PL and SE, despite the fact that these countries are very different in terms of where the major part of the population lives – in PL relatively far from the sea and in SE relatively close to the sea.

Table 4.9. Q22. To what extent do you disagree or agree with the following statements? Please use a scale from 1 to 5, where 1 stands for "I totally disagree" and 5 stands for "I totally agree". The numbers in between serve to graduate your assessment.

	DE	DK	EE	FI	LT	LV	PL	RU-c	SE
a. I am worried about the Baltic Sea environment.									
Median	3	4	4	4	3	4	3	5	4
Mean	3.02	3.53	3.72	4.11	3.29	3.61	3.24	4.11	3.75
Std.dev.	1.33	1.29	.97	1.03	1.23	1.18	.85	1.21	1.28
Nobs	1000	994	1001	1003	996	1010	1010	1000	1013
% 1	15.4	10.4	3.4	2.9	10.9	5.6	2.7	6.2	9.2
% 2	24.2	13.1	8.1	5.6	14.0	11.5	13.6	4.0	8.1
% 3	21.5	23.7	18.9	14.3	27.8	28.9	46.5	19.2	20.0
% 4	24.2	24.9	51.3	34.2	29.6	25.2	32.3	14.0	26.9
% 5	14.6	28.0	18.4	43.1	17.7	28.8	5.0	56.7	35.9
b. Baltic Sea environmental problems belong to the three most important environmental problems in XXXland [the respondent's own country].									
Median	3	3	4	4	4	4	4	4	4
Mean	2.71	3.15	3.79	4.11	3.54	3.85	3.67	3.73	3.85
Std.dev.	1.21	1.16	1.00	1.03	1.14	1.11	1.23	1.42	1.15
Nobs	1000	956	1001	990	988	975	1010	1000	990
% 1	20.8	9.6	2.5	2.4	5.6	2.6	8.2	13.1	4.4
% 2	21.8	17.3	8.1	5.9	12.5	10.1	12.1	5.5	8.2
% 3	32.1	36.4	24.4	15.3	26.7	24.2	22.7	22.8	19.8
% 4	16.3	21.3	38.4	32.9	32.8	26.2	29.4	12.6	31.1
% 5	9.0	15.4	26.5	43.5	22.4	36.9	27.6	46.0	36.6
c. The Baltic Sea environment is better today than 10 years ago.									
Median	3	3	3	2	2	3	3	1	2
Mean	3.08	2.98	2.91	2.42	2.49	2.78	3.33	1.76	2.37
Std.dev.	1.16	1.24	1.02	1.24	1.06	1.24	1.21	1.17	1.30
Nobs	1000	874	1001	961	872	731	1010	1000	950
% 1	10.8	16.3	8.5	31.2	18.5	17.5	8.9	64.4	37.4
% 2	16.1	17.8	23.6	25.5	34.5	26.8	17.6	9.6	18.6
% 3	36.2	32.4	40.5	21.0	29.9	28.0	32.6	17.8	24.1
% 4	24.9	20.9	20.6	17.0	13.1	16.1	23.4	2.8	12.9
% 5	12.0	12.5	6.8	5.3	4.0	11.6	17.5	5.3	6.9
d. The Baltic Sea environment is poorer today than 10 years ago.									
Median	3	3	3	4	4	3	3	5	4
Mean	2.80	2.91	3.09	3.53	3.59	3.19	3.17	4.15	3.57
Std.dev.	1.24	1.27	1.03	1.26	1.08	1.29	1.23	1.29	1.32
Nobs	1000	877	1001	961	872	724	1010	1000	950
% 1	18.8	16.9	7.2	7.6	4.2	13.9	14.2	8.5	10.2
% 2	21.0	19.3	21.0	16.0	11.6	15.5	13.3	3.0	9.6
% 3	33.4	30.9	38.4	20.1	27.5	26.9	35.7	15.4	24.5
% 4	17.4	18.9	25.7	27.9	35.5	25.5	21.4	10.5	22.9
% 5	9.4	14.0	7.8	28.5	21.3	18.2	15.4	62.7	32.8

	DE	DK	EE	FI	LT	LV	PL	RU-c	SE
e. The Baltic Sea water quality restricts my recreation opportunities at present.									
Median	2	1	2	2	2	2	3	3	1
Mean	2.17	1.84	2.14	2.39	2.21	2.10	3.03	2.85	1.83
Std.dev.	1.20	1.19	1.14	1.37	1.23	1.20	1.30	1.61	1.16
Nobs	1000	963	1001	987	998	934	1010	1000	991
% 1	46.2	59.4	37.0	38.0	38.4	42.7	17.7	34.6	57.0
% 2	18.0	15.7	31.1	19.8	19.4	23.8	15.9	7.6	14.4
% 3	22.3	13.2	17.1	17.7	25.0	20.1	31.5	20.9	16.8
% 4	9.4	6.2	11.1	13.8	12.1	7.6	17.6	10.6	8.0
% 5	4.1	5.5	3.6	10.7	5.2	5.8	17.2	26.3	3.8
f. I affect the Baltic Sea environment.									
Median	2	2	2	2	2	1	3	2	3
Mean	2.27	2.42	2.19	2.62	1.94	2.01	2.89	2.37	2.98
Std.dev.	1.33	1.41	1.29	1.42	1.13	1.26	1.34	1.52	1.47
Nobs	1000	984	1001	997	975	931	1010	1000	999
% 1	43.0	39.1	42.7	31.0	49.5	51.4	22.8	46.7	23.3
% 2	19.5	17.7	20.6	19.4	15.6	16.8	19.5	9.8	11.1
% 3	18.3	19.2	17.0	18.6	24.3	17.4	22.5	20.5	21.9
% 4	12.2	11.8	13.1	18.4	7.2	7.6	20.6	6.1	22.1
% 5	7.1	12.2	6.6	12.6	3.4	6.8	14.6	16.9	21.7

Note: For Q22a–Q22f, 2, 3 and 4 should be interpreted as "I disagree rather than agree",
"I neither agree nor disagree" and "I agree rather than disagree", respectively.

In Q23, the respondents were asked to state the extent to which they view a number of different issues as being a problem in the sea. Table 4.10 shows that some of the issues were indeed stated as being a rather big or very big problem by a majority of the respondents. This was true in the following countries for each of the issues:

- Litter: in all 9 countries.
- Damage to flora and fauna in the sea: in 8 countries (DE, EE, FI, LT, LV, PL, RU-c and SE).
- Heavy metals and other hazardous substances: in 8 countries (DK, EE, FI, LT, LV, PL, RU-c and SE).
- Small everyday oil leakages: in 8 countries (DK, EE, FI, LT, LV, PL, RU-c and SE).
- Possibility of major oil spill: in 8 countries (DE, DK, EE, FI, LT, LV, RU-c and SE).
- Algal blooms: in 7 countries (DK, EE, FI, LT, LV, RU-c and SE).
- Lack of oxygen in sea bottoms: in 6 countries (DK, FI, LT, LV, RU-c and SE).
- Coastal water quality: in 5 countries (FI, LT, LV, PL and RU-c).
- Water turbidity: in 5 countries (FI, LT, LV, PL and RU-c).

- Overfishing: in 5 countries (DE, DK, PL, RU-c and SE).
- Unexploded mines and chemical weapons lying at the sea bottom: in 5 countries (EE, LT, LV, PL and RU-c).
- Gas pipelines lying at the sea bottom: in 4 countries (EE, LT, PL, RU-c).
- Open sea water quality: in 4 countries (LT, LV, PL and RU-c).
- Offshore wind turbines: in 1 country (PL).

Respondents found some of the issues to be difficult to assess, perhaps because they are unfamiliar with them. The number of observations suggests that such an uncertainty might have been particularly present for "lack of oxygen in sea bottoms", but to some extent also for "open sea water quality", "heavy metals and other hazardous substances", "gas pipelines lying at the sea bottom" and "offshore wind turbines".

At least some of the issues brought up in Q23a–Q23n might have induced some respondents to perceive them as "problems" just because they were described by value-laden words, e.g. "hazardous". This was one of the reasons for why Q23a–Q23n were followed by an open-ended question about whether there are any other big problems in the sea (Q23o). Those respondents who answered "yes" were subsequently asked to describe what these very big problems are. It turned out that some respondents here took the chance of repeating or emphasizing issues that at least partly have been covered earlier by Q23a–Q23n, but other respondents indeed stated other and/or more specific types of problems than those brought up in Q23a–Q23n. See Appendix F for details for each country. Pollution and litter from boating and shipping, and negative aspects of tourism belong to issues that were commonly stated in most countries as very big problems. The percentages presented for Q23o in Table 4.10 are for respondents who answered "yes" and stated a problem irrespective of whether the respondent repeated a problem or stated a new one. The willingness to state a problem here might be seen as a proxy for how familiar respondents are with marine environmental issues.

Table 4.10. Q23. I will now mention some Baltic Sea issues. For each of them you are asked to say to what extent you view it as a problem or not, using a scale from 1 to 5, where 1 stands for "Not at all a problem in the Baltic Sea" and 5 stands for "A very big problem in the Baltic Sea". The numbers in between serve to graduate your assessment.

	DE	DK	EE	FI	LT	LV	PL	RU-c	SE
a. Coastal water quality									
Median	3	3	3	4	4	4	4	5	3
Mean	2.90	3.30	3.31	3.70	3.60	3.88	3.48	4.42	3.41
Std.dev.	1.12	1.10	.95	.94	.94	1.03	1.43	1.05	.98
Nobs	1000	964	931	979	945	976	1010	1000	963
% 1	13.6	6.2	4.8	1.4	2.9	2.8	15.4	3.6	4.2
% 2	25.6	15.5	11.5	9.2	8.8	7.1	11.9	2.8	11.4
% 3	33.7	37.3	41.0	30.1	29.4	22.0	15.0	13.0	37.3
% 4	19.0	25.5	33.7	38.7	43.7	36.3	24.8	8.9	35.2
% 5	8.2	15.5	8.9	20.6	15.2	31.8	32.9	71.7	11.8
b. Open sea water quality									
Median	3	3	3	3	4	4	4	5	3
Mean	2.98	3.17	3.17	3.41	3.49	3.77	3.63	4.10	3.32
Std.dev.	1.10	1.04	.98	.87	.93	1.03	1.21	1.26	.92
Nobs	1000	952	798	955	882	928	1010	1000	952
% 1	8.5	7.0	6.2	2.3	3.4	2.3	5.5	7.6	3.3
% 2	27.8	15.6	14.3	10.2	8.4	9.0	12.8	2.7	12.0
% 3	34.6	41.2	44.3	44.2	35.5	27.2	21.7	20.4	44.9
% 4	20.4	25.6	27.0	33.3	40.8	33.0	30.1	10.2	30.7
% 5	8.7	10.6	8.2	10.0	11.9	28.5	29.9	59.0	9.2
c. Water turbidity									
Median	3	3	3	4	4	4	4	5	3
Mean	2.97	3.19	3.31	3.59	3.49	3.59	3.68	4.13	3.22
Std.dev.	1.09	1.10	1.04	.96	.93	1.13	1.27	1.26	1.06
Nobs	1000	960	909	971	921	897	1010	1000	985
% 1	8.8	7.1	5.6	3.0	3.4	5.3	8.9	7.3	6.5
% 2	25.9	17.4	15.0	9.0	10.7	11.3	12.3	2.9	18.7
% 3	36.9	40.6	33.8	33.7	30.4	27.1	21.9	20.2	36.5
% 4	19.9	19.7	33.7	38.0	44.5	32.1	24.4	7.8	27.4
% 5	8.4	15.1	11.9	16.2	11.0	24.3	32.5	61.8	11.1
d. Algal blooms									
Median	3	4	4	4	4	4	3	5	4
Mean	3.15	3.61	3.49	4.12	3.46	3.77	2.86	3.91	4.00
Std.dev.	1.11	1.05	1.04	.86	1.10	1.10	1.22	1.45	.94
Nobs	1000	960	910	990	908	905	1010	1000	1006
% 1	6.9	3.6	4.0	.7	7.1	4.6	20.2	12.3	1.6
% 2	20.9	10.1	13.2	3.9	10.5	8.9	18.0	5.6	5.8
% 3	36.7	31.6	31.6	18.1	28.0	21.4	37.1	17.3	19.8
% 4	23.4	32.5	34.2	41.8	37.5	35.9	14.4	6.9	40.5
% 5	12.1	22.1	17.0	35.5	16.9	29.1	10.4	57.8	32.2

	DE	DK	EE	FI	LT	LV	PL	RU-c	SE
e. Lack of oxygen in sea bottoms									
Median	3	4	3	4	4	4	3	4	4
Mean	3.24	3.71	3.39	4.14	3.64	3.68	3.26	3.73	4.07
Std.dev.	1.08	1.10	1.06	.91	.97	1.11	1.20	1.40	.93
Nobs	1000	947	594	982	747	752	1010	1000	974
% 1	6.8	4.7	4.7	1.2	3.7	4.4	9.9	11.5	1.5
% 2	17.3	9.5	14.9	4.5	6.9	9.9	13.7	6.2	5.6
% 3	37.9	27.6	35.1	17.2	30.7	28.2	34.5	26.9	19.2
% 4	24.7	28.4	29.6	36.5	39.9	29.1	23.0	8.0	36.2
% 5	13.3	29.7	15.6	40.6	18.9	28.4	18.9	47.4	37.6
f. Heavy metals and other hazardous substances									
Median	3	4	4	4	4	4	5	5	4
Mean	3.37	3.79	3.94	4.13	4.12	3.91	4.32	4.71	4.14
Std.dev.	1.20	1.13	.97	.91	.86	1.06	1.03	.81	.93
Nobs	1000	966	788	991	858	798	1010	1000	994
% 1	7.1	3.3	2.2	.8	1.5	3.3	3.0	2.3	1.1
% 2	18.5	10.4	5.5	4.1	2.8	6.3	4.8	.9	5.0
% 3	27.2	24.3	22.4	18.4	13.0	22.6	8.5	5.4	14.8
% 4	28.5	26.2	37.8	35.6	47.2	32.1	25.2	5.6	36.3
% 5	18.7	35.8	32.1	41.1	35.5	35.8	58.4	85.8	42.9
g. Small everyday oil leakages									
Median	3	4	4	4	4	4	4	5	4
Mean	3.39	3.69	3.76	3.88	4.18	3.83	4.09	4.53	3.94
Std.dev.	1.22	1.15	1.04	1.02	.85	1.08	1.11	.92	1.02
Nobs	1000	966	906	990	948	919	1010	1000	1004
% 1	6.6	4.8	2.4	2.0	1.6	2.7	3.7	2.4	1.7
% 2	18.5	12.4	10.6	8.0	3.2	9.8	7.8	.9	9.3
% 3	27.9	22.5	24.0	21.8	10.9	23.4	14.4	11.5	17.5
% 4	25.6	30.6	36.4	36.3	44.5	30.2	27.9	10.7	37.1
% 5	21.3	29.7	26.5	31.9	39.7	33.9	46.3	74.4	34.5
h. Possibility of major oil spill									
Median	4	4	4	5	5	4	3	5	4
Mean	3.56	3.90	4.15	4.33	4.48	3.92	3.43	4.60	4.14
Std.dev.	1.26	1.14	1.05	.87	.76	1.18	1.12	.96	.97
Nobs	1000	987	932	1003	967	908	1010	1000	1005
% 1	6.2	4.4	3.1	.9	1.1	4.0	7.0	3.8	1.3
% 2	17.4	9.4	5.5	4.2	.9	10.5	10.7	1.2	7.1
% 3	23.6	20.9	12.0	11.5	8.3	18.5	37.9	7.7	15.7
% 4	24.1	25.3	31.5	31.3	29.9	23.9	25.4	5.3	33.5
% 5	28.7	40.0	47.9	52.0	59.9	43.1	19.1	82.0	42.4
i. Unexploded mines and chemical weapons lying at the sea bottom									
Median	3	3	4	3	5	4	4	5	3
Mean	3.34	2.95	4.13	3.44	4.31	3.87	3.53	4.50	3.29
Std.dev.	1.24	1.43	.97	1.26	.88	1.20	1.19	1.06	1.28
Nobs	1000	934	929	978	915	874	1010	1000	978
% 1	7.6	21.0	1.8	6.8	1.6	4.3	9.5	4.7	9.9
% 2	17.0	20.7	5.8	20.3	2.6	11.9	10.5	1.9	22.5
% 3	28.0	23.3	14.2	25.7	10.3	19.4	28.8	8.8	23.1
% 4	22.5	12.4	34.3	20.5	34.0	23.3	28.5	7.1	22.3
% 5	24.9	22.6	43.9	26.8	51.5	41.2	22.7	77.5	22.3

	DE	DK	EE	FI	LT	LV	PL	RU-c	SE
j. Gas pipelines lying at the sea bottom									
Median	3	2	4	3	4	3	4	4	3
Mean	3.04	2.49	3.64	3.22	3.91	3.42	3.76	3.44	3.22
Std.dev.	1.24	1.20	1.29	1.25	1.04	1.21	1.15	1.58	1.25
Nobs	1000	938	882	970	886	795	1010	1000	959
% 1	11.6	25.8	10.2	10.3	3.0	6.8	4.5	20.2	11.9
% 2	26.5	25.8	10.3	20.1	6.8	16.4	12.0	8.4	18.9
% 3	27.0	29.1	20.8	28.7	20.9	29.7	24.1	20.5	30.3
% 4	21.6	11.5	26.6	22.4	35.6	23.0	29.1	7.7	22.1
% 5	13.3	7.8	32.1	18.5	33.6	24.1	30.2	43.2	16.8
k. Offshore wind turbines									
Median	3	2	3	1	3	2	4	3	2
Mean	2.63	1.99	2.60	1.82	2.87	2.58	3.62	2.94	2.09
Std.dev.	1.22	1.17	1.17	1.03	1.28	1.27	1.18	1.69	1.10
Nobs	1000	964	678	978	811	751	1010	1000	982
% 1	21.6	48.1	21.2	50.6	20.0	25.2	6.3	34.8	40.3
% 2	27.1	23.4	27.8	25.9	18.4	25.4	9.6	8.4	28.6
% 3	28.4	17.5	31.1	16.5	27.3	26.1	31.1	18.0	20.1
% 4	15.3	5.7	13.3	4.4	22.6	14.1	24.6	5.5	8.0
% 5	7.4	5.4	6.7	2.6	11.6	9.2	28.4	33.4	3.0
l. Overfishing									
Median	4	4	3	3	3	3	4	5	4
Mean	3.54	3.50	3.36	3.09	3.14	3.24	4.03	4.57	3.91
Std.dev.	1.19	1.17	1.21	1.07	1.13	1.22	1.16	.91	1.04
Nobs	1000	957	902	954	920	900	1010	1000	997
% 1	6.2	7.4	8.0	7.4	10.8	10.2	5.0	2.4	3.1
% 2	15.6	11.8	16.7	19.1	15.8	18.2	9.2	1.4	7.7
% 3	27.3	29.2	25.6	39.9	31.4	27.1	15.8	10.5	16.9
% 4	27.8	28.7	29.7	23.2	31.4	27.1	24.9	8.0	39.7
% 5	23.1	22.9	19.9	10.5	10.7	17.3	45.0	77.7	32.7
m. Litter									
Median	4	4	4	4	4	4	4	5	4
Mean	3.55	3.79	4.01	3.86	4.24	4.11	4.08	4.79	4.06
Std.dev.	1.19	1.09	.94	.95	.81	.99	1.08	.67	.94
Nobs	1000	974	969	997	984	980	1010	1000	1009
% 1	5.2	2.5	1.0	1.3	1.4	1.4	3.9	1.1	1.5
% 2	13.8	10.6	5.9	7.4	1.6	6.9	8.1	1.0	6.0
% 3	27.7	24.2	22.1	22.9	10.5	15.7	15.5	4.1	16.4
% 4	29.6	31.0	34.8	40.0	44.1	31.6	28.1	5.3	39.4
% 5	23.8	31.6	36.2	28.3	42.4	44.4	44.4	88.6	36.7
n. Damage to flora and fauna in the sea									
Median	4	3	4	4	4	4	4	5	4
Mean	3.51	3.49	3.97	4.05	4.09	3.94	4.00	4.64	3.95
Std.dev.	1.11	1.10	.93	.93	.86	1.09	1.24	.84	.95
Nobs	1000	957	926	997	954	936	1010	1000	993
% 1	4.4	4.6	0.7	1.6	1.1	4.0	6.7	2.2	1.3
% 2	14.9	13.1	6.1	4.3	2.9	6.6	9.8	0.5	5.9
% 3	29.7	33.4	23.8	18.0	17.0	19.7	14.8	8.4	18.9
% 4	31.1	27.1	35.9	39.1	42.8	31.3	19.2	8.0	41.7
% 5	19.9	21.8	33.4	37.0	36.2	38.5	49.5	80.9	32.2

	DE	DK	EE	FI	LT	LV	PL	RU-c	SE
o. Are there any other issues related to the Baltic Sea that in your opinion are very big problems?									
% yes[a]	19.5	17.8	12.5	38.7	12.2	8.0	27.7	8.6	22.6
Nobs	1000	999	1001	1007	1032	1060	1010	1000	1017

[a] These percentages are based on unweighted data.

Note: For Q23a–Q23n, 2, 3 and 4 should be interpreted as "rather small problem", "neither small nor big problem" and "rather big problem", respectively.

Q24 is about how respondents perceive themselves as actors that can take actions to improve the marine environment. In Q24a, respondents were asked to state the extent to which they disagree or agree with the statement "I can myself play a role in improving the Baltic Sea environment". In two countries, PL and SE, a majority of the respondents answered either "I totally agree" or "I agree rather than disagree", see Table 4.11. In DE, LT and LV, a majority answered instead "I totally disagree" or "I rather disagree than agree". As might be expected, this result is consistent with the respondents' response to the statement "I affect the Baltic Sea environment" in Q22f. Polish and Swedish respondents were the most inclined to agree with this statement, and Latvian and Lithuanian respondents were the least inclined. Further, Poles and, in particular, Swedes are those who most clearly tend to regard themselves as currently contributing financially for funding actions through taxes or other types of payments (Q24b). The statement in Q24c was "I am prepared to contribute more financially for funding actions". A majority of respondents answered "I totally disagree" or "I disagree rather than agree" in DE, LT, LV and RU-c. The respondents who were the most negative towards this statement live in LT, LV and RU-c.

Table 4.11. Q24. To what extent do you disagree or agree with the following statements about your role in taking actions for improving the Baltic Sea environment? Please use a scale from 1 to 5, where 1 stands for "I totally disagree" and 5 stands for "I totally agree". The numbers in between serve to graduate your assessment.

	DE	DK	EE	FI	LT	LV	PL	RU-c	SE
a. I can myself play a role in improving the Baltic Sea environment.									
Median	2	3	3	3	2	2	4	3	4
Mean	2.71	2.96	2.87	2.88	2.12	2.26	3.91	2.62	3.42
Std.dev.	1.42	1.38	1.24	1.38	1.24	1.27	1.23	1.54	1.36
Nobs	1000	990	1001	999	984	944	1010	1000	1008
% 1	31.2	21.1	17.0	21.0	42.7	38.1	6.6	38.5	12.8
% 2	21.3	18.3	20.8	20.7	18.6	21.6	8.3	10.6	9.9
% 3	16.2	24.7	25.4	22.0	20.3	23.1	16.7	24.2	22.5
% 4	18.9	17.1	28.3	20.4	12.9	9.6	26.3	6.3	27.2
% 5	12.4	18.8	8.5	16.1	5.5	7.7	42.1	20.4	27.6

	DE	DK	EE	FI	LT	LV	PL	RU-c	SE
b. I currently contribute financially for funding actions through taxes or other types of payments.									
Median	2	3	3	3	2	2	4	3	4
Mean	2.19	3.18	3.08	3.09	2.05	2.33	3.74	2.92	4.01
Std.dev.	1.07	1.32	1.32	1.36	1.30	1.42	1.38	1.73	1.25
Nobs	1000	944	1001	936	981	938	1010	1000	1000
% 1	33.8	16.2	18.1	18.9	49.6	43.0	13.3	38.0	10.5
% 2	25.9	17.9	12.3	17.0	15.4	15.5	10.0	7.2	5.1
% 3	32.8	27.3	27.1	24.2	15.3	19.0	15.6	13.9	17.1
% 4	4.8	19.1	27.2	20.8	13.5	10.8	23.3	7.7	20.6
% 5	2.8	19.6	15.2	19.1	6.3	11.7	37.8	33.1	46.7
c. I am prepared to contribute more financially for funding actions.									
Median	2	3	3	3	1	1	3	1	3
Mean	2.33	2.76	2.48	2.70	1.63	1.72	3.23	2.07	2.49
Std.dev.	1.23	1.30	1.19	1.33	.98	1.00	1.42	1.35	1.40
Nobs	1000	983	1001	991	996	950	1010	1000	1004
% 1	32.6	24.4	27.7	24.8	61.5	56.7	17.6	53.3	33.8
% 2	19.3	19.7	22.1	19.3	17.3	23.1	14.4	12.6	15.9
% 3	26.8	28.4	26.9	25.8	13.9	13.5	21.9	18.6	21.9
% 4	16.4	15.7	19.6	18.9	6.0	4.6	23.5	6.3	17.9
% 5	4.8	11.8	3.7	11.1	1.3	2.1	22.6	9.1	10.5

Note: For Q24a–Q24c, 2, 3 and 4 should be interpreted as "I disagree rather than agree", "I neither agree nor disagree" and "I agree rather than disagree", respectively.

While Q24 was about respondents' views upon their own role for taking action, Q25 contained statements about actions taken by other actors, see Table 4.12. Five different actors were mentioned, and respondents were asked to judge to what extent they view it as necessary or not that these actors take action for improving the marine environment. It was specified in the question that these actors were actors in the respondents' own countries. Only in two cases was there a majority of respondents *not* answering "very necessary" or "rather necessary". These cases were about farmers (Q25b) and were found among German and Latvian respondents. All other cases indicate a widespread support for action to improve the Baltic Sea environment by wastewater treatment plants, farmers, professional fishermen, industry, sea transports and ports.

Table 4.12. Q25. I will now mention five XXXish [refers to the respondent's own country] actors who might take actions for improving the Baltic Sea environment. Then I will ask you for each of them to say to what extent you view it as necessary or not that they take action, using a scale from 1 to 5, where 1 stands for "Not at all necessary" and 5 stands for "Very necessary". The numbers in between serve to graduate your assessment.

	DE	DK	EE	FI	LT	LV	PL	RU-c	SE
a. Wastewater treatment plants									
Median	4	5	5	5	4	5	5	5	5
Mean	3.85	4.43	4.59	4.64	4.27	4.40	4.80	4.85	4.45
Std.dev.	1.15	.87	.62	.73	.85	.86	.60	.55	.88
Nobs	1000	984	980	1002	997	1001	1010	990	1006
% 1	4.2	0.9	0.4	0.9	0.6	1.1	0.6	0.6	1.1
% 2	9.5	3.4	0.2	1.6	3.0	1.8	1.2	0.5	4.1
% 3	25.1	11.6	3.8	5.8	14.2	13.2	2.9	3.2	9.9
% 4	28.9	22.5	30.2	18.5	33.5	24.0	12.1	4.3	22.1
% 5	32.4	61.5	65.4	73.2	48.7	59.9	83.2	91.3	62.7
b. Farmers									
Median	3	4	4	4	4	3	4	5	4
Mean	3.34	4.06	3.90	3.99	3.43	3.43	3.80	3.95	3.99
Std.dev.	1.16	1.08	1.01	1.05	1.17	1.22	1.21	1.41	1.02
Nobs	1000	986	952	1002	947	934	1010	982	1005
% 1	6.4	4.1	2.7	2.5	8.3	7.5	7.0	10.8	2.9
% 2	18.4	7.6	6.4	6.1	12.5	14.4	11.7	6.0	7.7
% 3	28.7	17.0	22.2	22.6	29.0	30.6	21.7	16.9	20.7
% 4	29.7	27.3	36.3	29.9	29.8	23.1	26.1	8.6	33.3
% 5	16.9	44.0	32.4	38.9	20.4	24.4	33.5	57.8	35.4
c. Professional fishermen									
Median	4	4	4	4	4	4	4	5	4
Mean	3.51	3.69	4.20	3.47	3.54	4.00	4.26	4.53	3.86
Std.dev.	1.13	1.09	.82	1.12	1.07	1.00	.97	.99	1.03
Nobs	1000	987	974	991	941	978	1010	985	1003
% 1	5.0	3.7	0.1	4.5	4.8	1.9	3.0	3.8	3.0
% 2	18.7	9.9	2.7	14.6	11.1	5.3	4.1	1.3	5.8
% 3	25.4	28.5	16.6	30.7	27.5	22.9	14.9	8.6	25.4
% 4	30.7	29.3	37.8	29.1	37.2	31.3	29.5	10.0	35.0
% 5	20.1	28.6	42.8	21.2	19.4	38.6	48.5	76.4	30.8
d. Industry									
Median	4	5	5	5	4	5	5	5	5
Mean	3.96	4.42	4.49	4.52	4.02	4.39	4.58	4.63	4.54
Std.dev.	1.22	.86	.77	.78	.97	.85	.83	.88	.79
Nobs	1000	990	978	997	969	999	1010	991	1007
% 1	5.3	1.7	0.7	0.5	1.6	1.2	2.4	2.5	1.0
% 2	8.2	2.0	1.2	2.6	5.1	2.2	1.7	0.9	2.2
% 3	16.1	11.4	8.1	7.2	20.3	11.2	5.6	7.9	7.8
% 4	29.4	25.0	27.2	24.4	33.8	28.8	21.3	6.8	22.4
% 5	41.1	59.9	62.7	65.3	39.2	56.6	69.1	81.8	66.6
e. Sea transports and ports									
Median	4	4	5	5	4	5	5	5	4
Mean	3.94	4.03	4.61	4.38	4.08	4.53	4.59	4.67	4.31
Std.dev.	1.06	.98	.69	.87	.96	.78	.77	.82	.88
Nobs	1000	985	986	1001	980	1001	1010	990	1006
% 1	3.0	2.4	0.6	1.3	2.0	0.7	1.6	1.8	1.1
% 2	5.8	4.0	1.1	1.9	3.9	1.3	2.2	1.1	3.5
% 3	18.3	22.2	4.9	12.1	18.3	10.1	7.1	7.3	13.8
% 4	38.7	32.6	23.3	28.6	35.0	20.3	21.8	7.0	31.6
% 5	34.1	38.9	70.1	56.1	40.8	67.5	67.2	82.8	49.9

Note: For Q25a–Q25e, 2, 3 and 4 should be interpreted as "hardly necessary", "somewhat necessary", and "rather necessary", respectively.

Finally, Table 4.13 reports the respondents' reactions to four different ways in which money could be collected from individuals and enterprises in the respondents' own countries for the purpose of funding actions to improve the marine environment. The answers indicate a strong support among respondents for funding actions through increased charges on pollution emissions (Q26c): a majority of respondents answered "totally acceptable" or "acceptable rather than unacceptable" in all countries. The support was especially strong in DK, FI, RU-c and SE. In those countries, a majority of respondents answered "totally acceptable". The other payment vehicles suggested in Q26, "increased taxes" (Q26a), "increased water bills" (Q26b) and "earmarked payments paid by everyone" were considerably less popular. A strongly negative attitude towards increased taxes and increased water bills is particularly evident in LT, LV and RU-c. However, looking at mean values, it is worth noting that "earmarked payments paid by everyone" were found in all countries to be more acceptable than "increased taxes". The same is true in all countries except FI also when comparing to "increased water bills". The reason might be that "taxes" and "bills" have a strongly negative association for the respondents. It is also possible that respondents associate taxes and water bills with a risk that their payments will not be used for funding actions once the payments are collected. In contrast, earmarked payments could be received by a fund whose only purpose is to fund actions to improve the marine environment.

Table 4.13. Q26. I will now mention four ways that can possibly be used for individuals and enterprises in XXXland [the respondent's own country] to fund actions to improve the Baltic Sea environment. Then I will ask you for each of them to say to what extent you find them acceptable or not, using a scale from 1 to 5, where 1 stands for "Totally unacceptable" and 5 stands for "Totally acceptable". The numbers in between serve to graduate your assessment.

	DE	DK	EE	FI	LT	LV	PL	RU-c	SE
a. Increased taxes									
Median	2	3	2	3	1	1	2	1	3
Mean	2.09	2.82	2.20	2.60	1.47	1.55	2.15	1.84	2.63
Std.dev.	1.13	1.27	1.08	1.20	.90	.95	1.20	1.32	1.24
Nobs	1000	987	930	996	1000	997	1010	968	1008
% 1	42.0	20.2	30.6	22.4	72.1	67.9	42.8	63.7	23.3
% 2	22.7	19.8	34.7	23.4	13.4	16.9	20.7	12.2	20.6
% 3	22.7	32.1	19.8	31.7	9.8	10.4	24.5	10.8	31.2
% 4	10.5	15.7	12.9	15.1	3.3	2.3	8.0	3.8	16.9
% 5	2.0	12.2	2.1	7.4	1.5	2.5	4.0	9.6	8.0
b. Increased water bills									
Median	2	3	2	3	1	1	2	1	3
Mean	2.24	2.86	1.94	3.21	1.33	1.59	2.23	1.70	2.87
Std.dev.	1.15	1.27	1.00	1.20	.72	.95	1.24	1.15	1.22
Nobs	1000	982	956	998	1012	1004	1010	971	997
% 1	32.2	17.7	39.5	10.3	78.2	65.1	39.5	65.6	15.9
% 2	29.6	21.6	34.9	15.7	12.5	18.2	20.6	14.2	20.5
% 3	23.4	30.7	17.3	30.9	6.8	11.7	26.8	11.8	31.9
% 4	11.2	17.3	6.7	28.3	1.9	3.1	7.9	3.0	22.2
% 5	3.6	12.8	1.6	14.9	0.5	1.9	5.3	5.5	9.4
c. Increased charges on pollution emissions									
Median	4	5	4	5	4	4	4	5	5
Mean	3.30	4.26	3.73	4.38	3.02	3.54	3.66	4.70	4.17
Std.dev.	1.35	1.04	1.28	.90	1.65	1.58	1.37	.91	1.10
Nobs	1000	990	946	999	1004	1020	1010	987	1004
% 1	13.0	3.4	9.7	1.9	33.4	20.4	12.2	4.4	4.9
% 2	13.1	4.2	7.7	3.0	5.8	7.9	9.4	0.3	3.5
% 3	22.1	11.7	16.9	10.0	10.2	12.5	18.0	3.0	11.2
% 4	29.6	25.1	31.8	29.1	23.7	16.6	25.2	5.0	28.5
% 5	22.2	55.5	33.9	56.0	26.9	42.7	35.2	87.3	51.8
d. Earmarked payments paid by everyone									
Median	3	3	2	3	1	2	3	2	3
Mean	2.76	3.08	2.28	3.09	1.79	2.14	3.07	2.42	3.20
Std.dev.	1.30	1.25	1.22	1.24	1.18	1.26	1.31	1.52	1.26
Nobs	1000	962	913	986	974	956	1010	959	1004
% 1	20.9	13.5	34.3	12.2	60.5	43.8	16.2	44.8	13.1
% 2	18.9	17.9	28.0	18.1	13.6	20.5	17.4	10.7	14.2
% 3	27.6	34.3	18.9	32.1	13.6	21.3	29.1	20.1	28.4
% 4	22.4	18.3	14.0	23.5	8.8	7.2	22.5	7.3	28.4
% 5	10.2	16.1	4.8	14.0	3.4	7.2	14.9	17.1	16.0

Note: For Q26a–Q26d, 2, 3 and 4 should be interpreted as "unacceptable rather than acceptable", "neither unacceptable nor acceptable" and "acceptable rather than unacceptable", respectively.

5. Conclusions

BalticSurvey has resulted in a data set which provides completely new and comparable insights in how people in the Baltic Sea countries use the sea and what attitudes they have towards marine environmental issues. Insights about the present use and concerns of the general public are likely to be useful for politicians and other environmental policy-makers. For example, use indicates what values might be at stake in case of a degradation of the marine environment, and attitudes say something about the degree of public support for taking action.

Some general findings are summarized below. These findings are complemented by Appendix G, in which the results are viewed from the national perspective of seven selected Baltic Sea countries.

- The data indicate how often people visit the Baltic Sea for recreational purposes, and what they do when they visit the sea. The most frequent visitors are found in DK, FI and SE. On average, the respondents in these countries spent at least some leisure time at the Baltic Sea on 22–35 days of the 180 days in the period of April–September 2009. For DE, EE, LT, LV, PL and RU-c, the corresponding interval was 9–19 days. Being at the beach or seashore for walking, sunbathing etc. and swimming were the most frequent activities.
- As to attitudes, the following are examples of main findings:
  – 37–47 % of respondents in PL, DE and LT tended to agree with the statement "I am worried about the Baltic Sea environment". 53–77 % tended to agree in DK, LV, SE, EE, RU-c and FI.
  – In all countries except PL and SE, a majority tended to *dis*agree that they personally affect the Baltic Sea environment.
  – In PL and SE, a majority tended to agree with the statement "I can myself play a role in improving the Baltic Sea environment". In the other countries, 17–37 % tended to agree.
  – "Litter" is a marine issue that was regarded by a majority of the respondents in all countries as a rather big or very big problem in the Baltic Sea. The same is true in at least seven of the nine countries for "damage to flora and fauna in the sea", "heavy metals and other hazardous substances", "small everyday oil leakages", "possibility of major oil spill" and "algal blooms". In general, "gas pipelines lying at the sea bottom", "open sea water quality" and, in particular, "offshore wind turbines" tended to be viewed as less problematic in most countries.
  – In all countries, a majority tended to view it as necessary that their own country's wastewater treatment plants, professional fishermen, industry, sea transports and ports take actions to improve the Baltic Sea environment. A majority in DK, EE, FI, LT, PL, RU-c and SE thought it is necessary that their own country's farmers take actions.

– A majority of the respondents in all countries considered increased charges on pollution emissions for individuals and enterprises to be an acceptable way of funding actions to improve the Baltic Sea environment. There is thus widespread support for the Polluter Pays Principle. Increases in taxes or water bills are not popular, though people are in general less negative towards making payments that are paid by all and are earmarked for funding actions.

BalticSurvey has also illustrated the types of problems that are almost inevitable when the aim is to collect comparable data in different countries. Complex translation issues include the use of a coherent definition of what people are asked to focus on, in this case "the Baltic Sea". This was difficult since people's perception of what is meant by "the Baltic Sea" differed somewhat across countries. Besides the usual need for pre-tests and a pilot study, this difficulty illustrates why involvement of representatives from all Baltic Sea countries in the project team was necessary for constructing the BalticSurvey questionnaire. Such co-operation is likely to be needed whenever similar international survey projects are carried out. Other challenges included homogenous sampling procedures and data collection modes in all countries, which could partly be accomplished. While it is important to keep the differences that could not be avoided in mind, comparisons based on the existing data set are likely to be valid and informative.

Another aim of BalticSurvey was to provide input to forthcoming research on the benefits of marine environmental improvements. Using the case of marine eutrophication as an example, such research could be about conducting environmental valuation studies for estimating people's willingness to pay for reduced eutrophication effects. In the end, such benefit estimates are to be compared to the costs of taking the action necessary for accomplishing a sufficient reduction in the nutrient load to the sea. While such valuation efforts have been done before, e.g. see SEPA (2008, 2009) for overviews, there is still a need for general cost-benefit analyses such as those planned in the PROBAPS research program. However, choosing a focus for valuation implies that other marine issues that people might care for are excluded. BalticSurvey has indicated what marine issues are perceived as problems among the general public in the different countries and therefore more is now known about what would be left out if a particular focus is chosen in valuation studies.

Another typical challenge for environmental valuation studies is to select a payment mode which most people find acceptable to consider when they are asked to answer questions related to their willingness to pay. The results of BalticSurvey indicate that there is a willingness to contribute financially for funding actions for improving the Baltic Sea environment among a not negligible proportion of the general public, but considerable protests can in some countries be expected against payment modes such as increased taxes and increased water bills. This indicates that forthcoming valuation studies need to apply careful pre-testing of payment modes and an attentive treatment of the reasons for possible refusals to answer questions related to willingness to pay.

Finally, it should be kept in mind that the survey results represent a snapshot of people's attitudes. For example, people's willingness to contribute financially and attitudes towards increased taxes and increased water bills are likely to be influenced by the general economic situation. Some of the Baltic Sea countries have recently experienced a severe economic crisis, which might have had an impact on attitudes. By repeating this survey after, say, 2 or 3 years, it would be possible to study if and why attitudes change over time.

References

Hasselström L, Söderqvist T, Soutukorva Å, 2009. BalticSurvey – a survey study in the Baltic Sea countries on people's attitudes and use of the Baltic Sea. Report to the Swedish EPA on Phase 1 (Planning) including proposal for remaining work. 4 October 2009, Enveco Environmental Economics Consultancy Ltd., Stockholm.

SEPA, 2008. The economic value of ecosystem services provided by the Baltic Sea and Skagerrak: Existing information and gaps of knowledge. Report 5874, Swedish Environmental Protection Agency, Stockholm.

SEPA, 2009. What's in the sea for me? Ecosystem services provided by the Baltic Sea and Skagerrak. Report 5872, Swedish Environmental Protection Agency, Stockholm.

Vesterinen J, Pouta E, Huhtala A, Neuvonen M, 2010. Impacts of changes in water quality on recreation behavior and benefits in Finland. Journal of Environmental Management 91, 984–994.

Appendix A. The questionnaire

The master copy questionnaire in English is reproduced in this appendix. Translated questionnaires are downloadable from www.naturvardsverket.se/balticstern and www.stockholmresilience.org/balticstern.

BalticSurvey questionnaire – 11 April 2010

Hallo! We are doing an investigation on people's views on different issues regarding the Baltic Sea, and we would like to ask you some questions about this. It will take 10-20 minutes to go through them. We do this on behalf of a number of research institutes in all Baltic Sea countries, and the same questions are right now posed to people in all countries around the Baltic Sea. Your answers will be anonymous.

0. We would be very grateful if you participate. Would you be willing to do so?
   YES → *continue with the interview*
   NO → OK, thank you and good bye.

By "the Baltic Sea" we mean the whole sea around which you find Finland, Russia, Estonia, Latvia, Lithuania, Poland, Germany, Denmark and Sweden. And by "the Baltic Sea" we also refer to both the waters and the shores of the sea.

Interviewer: If a respondent asks how "seashore" is defined, explain that it is approximately the piece of land from which the sea water is visible.

1. 1a. In which municipality do you live?
   MUNICIPALITY

   1b. What is your postal code?
   CODE

   Synovate: Don't ask Q1a and Q1b if these pieces of information can be filled in without asking the respondent.

2. About how far from the Baltic Sea do you live? Give an approximate answer in kilometres.
   KILOMETRES

   Interviewer:
   - *If the respondent asks whether this is a distance as the crow flies or as a road distance, answer "as the crow flies".*
   - *This question refers to the respondent's permanent home, and not to e.g. summer houses.*
   - *If necessary, have a conversation with the respondent helping him/her to determine an approximate distance by starting to ask "Is it more or less than 30 km?". (It might be the case that the interviewer KNOWS that the place the respondent's place of living is less than 30 km from the sea. In such a case it makes sense to start the conversation with another and more suitable level. For similar reasons, there might also be cases where it is also more suitable in Q15 and Q17 to start the conversation with another level.)*

3. Do you have or have had an occupation that is somehow dependent on the Baltic Sea?
   YES
   NO

4. Have you ever been to the Baltic Sea to spend leisure time there? This could be about swimming, boating and fishing, but also for example walking along the seashore, skating and going on a cruise.
   YES → *go to question 5*
   NO → *go to question 20*

5. When was your last visit to the Baltic Sea to spend leisure time there? Was it "in the last 12 months, that is in April 2009 to March 2010", "in the last 5 years, but not in the last 12 months" or "more than 5 years ago"?
   LAST 12 MONTHS (APRIL 2009-MARCH 2010) → *go to question 6*
   IN THE LAST 5 YEARS, BUT NOT IN THE LAST 12 MONTHS → *go to question 20*
   MORE THAN 5 YEARS AGO → *go to question 20*

6. 6a. Now think about the months of April to September 2009. This means about 180 days. At about how many of these days did you spend at least some leisure time at the Baltic Sea?
   NUMBER OF DAYS

   Interviewer: If necessary, have a conversation with the respondent helping him/her to approximately determine the number of days by starting to ask "More or less than 5 days?"

   6b. And now think about the months of October 2009 to March 2010. Again, this means about 180 days. At about how many of these days did you spend at least some leisure time at the Baltic Sea?
   NUMBER OF DAYS

   Interviewer: If necessary, have a conversation with the respondent helping him/her to approximately determine the number of days by starting to ask "More or less than 5 days?"

7. Now think about the last 12 months, i.e. April 2009 to March 2010, and the days you spent at least some leisure time at the Baltic Sea, i.e. X days (*interviewer: add the answers to Q6a and Q6b in order to obtain X*). At about how many of these days did you do the following?

    a. Swimming (in the sea)
      NUMBER OF DAYS

    b. Diving (in the sea)
      NUMBER OF DAYS

    c. Windsurfing, water skiing
      NUMBER OF DAYS

    d. Boating – e.g. sailing, power boating, rowing, canoeing/kayaking
      NUMBER OF DAYS

    e. Jigging
      NUMBER OF DAYS

    f. Other types of fishing than jigging
      NUMBER OF DAYS

    g. Being at the beach or seashore for walking, picnicking, sunbathing, visiting touristic or cultural sites, etc.
      NUMBER OF DAYS

    h. Skating, skiing
      NUMBER OF DAYS

    i. Go on a cruise/use water-based transportation for recreation
      NUMBER OF DAYS

Interviewer:
- *If necessary, have a conversation with the respondent helping him/her to to approximately determine the number of days by starting to ask "At more or less than half of X days?", where X is the sum obtained by adding the answers to Q6a and Q6b. (However, if Q6a+Q6b=only 1 day, just try to explore what activities he/she did during that day.)*
- *If a respondent asks how "seashore" is defined, explain that it is approximately the piece of land from which the sea water is visible.*

- *For respondents who only visited the sea in April-September 2009 (see answer to Q6a)
  OR only visited the sea in October 2009-March 2010 (see answer to Q6b):*

  Now, please think about the last visit to the Baltic Sea that you made intentionally for spending leisure time there. Several questions about this particular visit will now follow.
    - *Interviewer: Skip "last" if Q6a=1 day or Q6b=1 day and skip also Q11 and Q12 for this respondent.*

- *For respondents who visited the sea BOTH in April-September 2009 and October 2009-March 2010 (see answers to Q6a and Q6b):*

    - *Tell every second respondent the following:*

    Now, please think about the last visit to the Baltic Sea that you made intentionally **in April to September 2009** for spending leisure time there. Several questions about this particular visit will now follow.
      - *Interviewer: Skip "last" if Q6a=1 day and skip also Q11 and Q12 for this respondent.*

    - *And tell every second respondent the following:*

    Now, please think about the last visit to the Baltic Sea that you made intentionally for spending leisure time there. Several questions about this particular visit will now follow.
      - *Interviewer: Skip "last" if Q6b=1 day and skip also Q11 and Q12 for this respondent.*

8. In what month did you make this visit to sea?
   MONTH

   Interviewer: Check that the month reported by the respondent falls within the period that the respondent was asked after Q7 to consider.

9. *Interviewer: If the answer to Q7i was greater than zero days, ask Q9a. If Q7i=0 days, go directly to Q9b in the third column in the table below and then continue with the other questions in the third column.*

9a. Was your last visit **only** about going on a cruise or using water-based transportation?
YES → *use the questions in the second column in the table below*
NO → *use the questions in the third column in the table below*

	Second column	Third column
	Questions if Q9a=YES	*Questions if Q7i=0 days or Q9a=NO*
9b, 9c	9b. What was the place of departure of the cruise? Please state the closest bigger city. **NAME OF CITY** 9c. What was the place of destination of the cruise? Please state the closest bigger city. **NAME OF CITY** *Interviewer:* • *If the respondent doesn't know the closest bigger city, ask him/her to state the province instead.* • *In case the cruise does not have a destination (i.e. an on-sea cruise), fill in the place of departure in Q9c as well.*	9b. Where at the Baltic Sea is the place of your visit situated? Please state the closest bigger city. If you visited another Baltic Sea country, the name of the country is enough. **NAME OF CITY OR COUNTRY** *Interviewer: If the respondent doesn't know the closest bigger city, ask him/her to state the province instead.*
10.	Was your cruise longer than one day? YES → How many days? **NUMBER OF DAYS** NO → How many hours? **NUMBER OF HOURS**	Did you stay at this place longer than one day? YES → How many days? **NUMBER OF DAYS** NO → How many hours? **NUMBER OF HOURS**
11.		What activities did you do during your visit? *Interviewer: If the visit was in April-September 2009, skip Q11e (jigging) and Q11h (skating and skiing) if they are not reasonable activities. Also change Q11f to "Fishing".* a. Swimming (in the sea) YES NO

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		b. Diving (in the sea) YES NO c. Windsurfing, water skiing YES NO d. Boating – e.g. sailing, power boating, rowing, canoeing/kayaking YES NO e. Jigging YES NO f. Other types of fishing than jigging YES NO g. Being at the beach or seashore for walking, picnicking, sunbathing, visiting touristic or cultural sites, etc. YES NO h. Skating, skiing YES NO i. Go on a cruise/use water-based transportation for recreation YES NO
12.	Did you made the same cruise more than once in April-September 2009/October 2009-March 2010? YES → How many times? NUMBER OF TIMES NO *Interviewer: Select time period (April-September 2009 or October 2009-March 2010) depending on what*	Did you visit this place for doing the same activities as those you just stated more than once in April to September 2009/October 2009 to March 2010? YES → How many times? NUMBER OF TIMES NO *Interviewer:*

	period was selected before Q8.	• *Say "activity" if the respondent answered "yes" to only one of the items Q11a-i. Select time period (April-September 2009 or October 2009-March 2010) depending on what period was selected before Q8.* • *"As those you just stated" in Q12 refer to the activities stated by the respondent in Q11.*
13.	How would you describe the sea water quality in the waters of your last cruise? Please use a scale from 1 to 5, where 1 stands for very bad quality and 5 for very good quality of water. The numbers in between serve to graduate your assessment. 1-5 *Interviewer: If the respondent asks for more information about the scale, translate 2 to "rather bad quality", 3 to "neither bad nor good quality" and 4 to "rather good quality".*	How would you describe the sea water quality at the place and time of your last visit? Please use a scale from 1 to 5, where 1 stands for very bad quality and 5 for very good quality of water. The numbers in between serve to graduate your assessment. 1-5 *Interviewer: If the respondent asks for more information about the scale, translate 2 to "rather bad quality", 3 to "neither bad nor good quality" and 4 to "rather good quality".*
14.	For going to the place of departure for the cruise, did you go from home or did you rather go from any other place, for example from summer house or from relatives' home? **FROM HOME** **FROM ANOTHER PLACE**	For visiting this place, did you go from home or did you rather go from any other place, for example from summer house or relatives' home? **FROM HOME** **FROM ANOTHER PLACE**
15.	About how far was the place of departure for your cruise from the place you left? Give an approximate answer in kilometres. **KILOMETRES** *Interviewer:* • *If the respondent asks whether this is a distance as the crow flies or as a road distance, answer "as the crow flies".* • *If necessary, have a conversation with the respondent helping him/her to determine an approximate distance by starting to ask "Was it more or less than 20 km?".*	About how far was the place you visited from the place you left? Give an approximate answer in kilometres. **KILOMETRES** *Interviewer:* • *If the respondent asks whether this is a distance as the crow flies or as a road distance, answer "as the crow flies".* • *If necessary, have a conversation with the respondent helping him/her to determine an approximate distance by starting to ask "Was it more or less than 20 km?".*

16.	I will now mention some modes of transport and you are then asked to say what mode of transport that you mainly used for going to the place of departure for your cruise. *Interviewer: Read the modes below and then ask the respondent to select the main mode of transport.* CAR OR MOTORCYCLE TRAIN COACH *(i.e., bus for long-distance travels)* PLANE BOAT LOCAL PUBLIC TRANSPORT OTHER, E.G. BY FOOT, BY BIKE	I will now mention some modes of transport and you are then asked to say what mode of transport that you mainly used for going to the place you visited. *Interviewer: Read the modes below and then ask the respondent to select the main mode of transport.* CAR OR MOTORCYCLE TRAIN COACH *(i.e., bus for long-distance travels)* PLANE BOAT LOCAL PUBLIC TRANSPORT OTHER, E.G. BY FOOT, BY BIKE
17.	About how long was your travel (one way) to the place of departure for your cruise? Give an approximate answer in hours and minutes. NUMBER OF HOURS NUMBER OF MINUTES *Interviewer: If necessary, have a conversation with the respondent helping him/her to determine an approximate number of hours and minutes by starting to ask "Was it more or less than 30 minutes?".*	About how long was your travel (one way) to the place you visited? Give an approximate answer in hours and minutes. NUMBER OF HOURS NUMBER OF MINUTES *Interviewer: If necessary, have a conversation with the respondent helping him/her to determine an approximate number of hours and minutes by starting to ask "Was it more or less than 30 minutes?".*
18.	You might have had other purposes with your travel than going to your cruise, for example also visiting relatives and friends. About to what extent was your purpose with your travel to go to the cruise? Please use a scale from 1 to 5, where 1 stands for that "going to the cruise was only a marginal purpose of my travel" and 5 stands for that "going to the cruise was the only purpose of my travel". The numbers in between serve to graduate your assessment. 1-5 *Interviewer: If the respondent asks for more information about the scale, translate 2 to "going to the cruise was not only a marginal purpose, but it*	You might have had other purposes with your travel than being at the sea, for example also visiting relatives and friends. About to what extent was your purpose with your travel to be at the sea? Please use a scale from 1 to 5, where 1 stands for that "being at the sea was only a marginal purpose of my travel" and 5 stands for that "being at the sea was the only purpose of my travel". The numbers in between serve to graduate your assessment. 1-5 *Interviewer: If the respondent asks for more information about the scale, translate 2 to "being at the sea was not only a marginal purpose, but it*

	was less important than other purposes", 3 to "going to the cruise was equally important than other purposes" and 4 to "going to the cruise was more important than other purposes, but it was not the only purpose".	*was less important than other purposes", 3 to "being at the sea was equally important than other purposes" and 4 to "being at the sea was more important than other purposes, but it was not the only purpose".*

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19. To what extent do you disagree or agree with the following statements? Please use a scale from 1 to 5, where 1 stands for "I totally disagree" and 5 stands for "I totally agree". The numbers in between serve to graduate your assessment.

Interviewer: If the respondent asks for more information about the scale, translate 2 to "I disagree rather than agree", 3 to "I neither agree nor disagree" and 4 to "I agree rather than disagree".

Synovate: Rotate 19a-b and 19c-d randomly.

    a. I could equally well have visited another place at the Baltic Sea for spending leisure time.
    1-5

    b. I could equally well have visited another place not situated at the Baltic Sea for spending leisure time.
    1-5

    c. I would visit the Baltic Sea more often if the sea water quality became better than at your last visit.
    1-5

    d. I would visit the Baltic Sea more seldom if the sea water quality became poorer than at your last visit.
    1-5

This was the final question related to your last visit. Now follows some more general questions about your attitudes to the Baltic Sea environment.

20. In your opinion, what is on average the status of the environment in the XXXish [refers to the respondent's own country] part of the Baltic Sea? Please use a scale from 1 to 5, where 1 stands for "very bad" and 5 stands for "very good". The numbers in between serve to graduate your assessment.
1-5

Interviewer: If the respondent asks for more information about the scale, translate 2 to "rather bad", 3 to "neither bad nor good" and 4 to "rather good".

21. In your opinion, what is on average the status of the Baltic Sea environment in general? Please use a scale from 1 to 5, where 1 stands for "very bad" and 5 stands for "very good". The numbers in between serve to graduate your assessment.
1-5

Interviewer: If the respondent asks for more information about the scale, translate 2 to "rather bad", 3 to "neither bad nor good" and 4 to "rather good".

22. To what extent do you disagree or agree with the following statements? Please use a scale from 1 to 5, where 1 stands for "I totally disagree" and 5 stands for "I totally agree". The numbers in between serve to graduate your assessment.

Interviewer: If the respondent asks for more information about the scale, translate 2 to "I disagree rather than agree", 3 to "I neither agree nor disagree" and 4 to "I agree rather than disagree".

Synovate: Rotate 22a-f randomly.

a. I am worried about the Baltic Sea environment.
1-5

b. Baltic Sea environmental problems belong to the three most important environmental problems in XXXland [the respondent's own country].
1-5

c. The Baltic Sea environment is better today than 10 years ago.
1-5

d. The Baltic Sea environment is poorer today than 10 years ago.
1-5

e. The Baltic Sea water quality restricts my recreation opportunities at present.
1-5

f. I affect the Baltic Sea environment.
1-5

23. I will now mention some Baltic Sea issues. For each of them you are asked to say to what extent you view it as a problem or not, using a scale from 1 to 5, where 1 stands for "Not at all a problem in the Baltic Sea" and 5 stands for "A very big problem in the Baltic Sea". The numbers in between serve to graduate your assessment.

Interviewer: If the respondent asks for more information about the scale, translate 2 to "rather small problem", 3 to "neither small nor big problem" and 4 to "rather big problem".

Synovate: Rotate 23a-n randomly.

    a. Coastal water quality
       1-5

    b. Open sea water quality
       1-5

    c. Water turbidity
       1-5

    d. Algal blooms
       1-5

    e. Lack of oxygen in sea bottoms
       1-5

    f. Heavy metals and other hazardous substances
       1-5

    g. Small everyday oil leakages
       1-5

    h. Possibility of major oil spill
       1-5

    i. Unexploded mines and chemical weapons lying at the sea bottom
       1-5

    j. Gas pipelines lying at the sea bottom
       1-5

    k. Offshore wind turbines
       1-5

    l. Overfishing
       1-5

    m. Litter
       1-5

n. Damage to flora and fauna in the sea
1-5

o. Are there any **other** issues related to the Baltic Sea that in your opinion are very big problems?
YES → What issues?
TEXT
NO

24. To what extent do you disagree or agree with the following statements about your role in taking actions for improving the Baltic Sea environment? Please use a scale from 1 to 5, where 1 stands for "I totally disagree" and 5 stands for "I totally agree". The numbers in between serve to graduate your assessment.

Interviewer: If the respondent asks for more information about the scale, translate 2 to "I disagree rather than agree", 3 to "I neither agree nor disagree" and 4 to "I agree rather than disagree".

a. I can myself play a role in improving the Baltic Sea environment.
1-5

b. I currently contribute financially for funding actions through taxes or other types of payments.
1-5

c. I am prepared to contribute more financially for funding actions.
1-5

25. I will now mention five XXXish [refers to the respondent's own country] actors who might take actions for improving the Baltic Sea environment. Then I will ask you for each of them to say to what extent you view it as necessary or not that they take action, using a scale from 1 to 5, where 1 stands for "Not at all necessary" and 5 stands for "Very necessary". The numbers in between serve to graduate your assessment.

Interviewer: If the respondent asks for more information about the scale, translate 2 to "hardly necessary", 3 to "somewhat necessary" and 4 to "rather necessary".

Synovate: Rotate 25a-e randomly.

Interviewer: Now read all the five items, then return to the first item and ask the respondent to use the scale. If necessary, repeat the scale.

a. Wastewater plants
1-5

b. Farmers
1-5

c. Professional fishermen
1-5

d. Industry
1-5

e. Sea transports and ports
1-5

26. I will now mention four ways that can possibly be used for individuals and enterprises in XXXland [the respondent's own country] to fund actions to improve the Baltic Sea environment. Then I will ask you for each of them to say to what extent you find them acceptable or not, using a scale from 1 to 5, where 1 stands for "Totally unacceptable" and 5 stands for "Totally acceptable". The numbers in between serve to graduate your assessment.

Interviewer: If the respondent asks for more information about the scale, translate 2 to "unacceptable rather than acceptable", 3 to "neither unacceptable or acceptable" and 4 to "acceptable rather than unacceptable".

Synovate: Rotate 26a-d randomly.

Interviewer: Now read all the four items, then return to the first item and ask the respondent to use the scale. If necessary, repeat the scale.

     a. Increased taxes
       1-5

     b. Increased water bills
       1-5

     c. Increased charges on pollution emissions
       1-5

     d. Earmarked payments paid by everyone
       1-5

Finally I have a few questions about yourself.

27. In what year were you born?
    YEAR

28. What is your gender?
    Interviewer: Don't ask this question if the answer is obvious. Fill in the answer yourself.
    FEMALE
    MALE

29. What is your highest level of education? Is it "Compulsory school", "High school", "Vocational education" or "University"?
    HIGHEST LEVEL OF EDUCATION

30. How many persons live in your household, including yourself?
    NUMBER OF PERSONS

31. How many of these persons are younger than 18 years of age?
    NUMBER OF PERSONS

32. What is the monthly net income after tax of your household? Please include all your sources of income, for example salaries, pensions and allowances.
    A: less than… [preferably 0-20 percentile]
    B: interval [preferably 21-40 percentile]
    C: interval [preferably 41-60 percentile]
    D: interval [preferably 61-80 percentile]
    E: more than… [preferably 81-100 percentile]

Thank you very much!

Appendix B. Sampling methods

The table below contains details provided by Synovate of the sampling procedures applied in each of the nine countries.

	Supplier	Data collection mode[a]	Age of sampled individuals	Sampling description
DE	Synovate	CATI	≥ 15	The sample is representatively drawn from our sample provider (D&B or Hoppenstedt). When we conduct an interview, the CATI will randomly select a respondent for each interviewer.
DK	Norstat	CATI	≥ 16	A sample of fixed numbers and mobile phone numbers is drawn from Markedsdata (former TDC) based on region (postal code), in correspondence with sensus data from Danmarks Statistik.
				The split between landline and mobile numbers has been 30% mobile and 70% fixed.
EE	RAIT	Face-to-face	15–74	Omnibus is a nationwide survey that is taking place according to the specific pre-determined time schedule. 1000 people all over Estonia are being questioned in order to gather the necessary information for marketing and opinion researches ordered by different clients.
				Sample: Omnibus-study comprises 1000 respondents from 15 to 74 years, who have been chosen by random selection. That ensures the proportional representation of all Estonian counties and types of settlements in the sample. Territorial model of the sample has been composed according to the statistical database of Estonian population put together by Estonian Statistical Office.
				On the basis of that model at first 100 different sampling points all over Estonia are being selected, from which at the second stage specific respondents are being chosen. The start-address method and the youngest man's rule are being used to select the respondents.
				After finishing the survey, the socio-demographic characteristics of respondents are being compared with those determined by the sample and if necessary, the collected data will be adjusted according to the theoretical model.
FI	Norstat	CATI	≥ 15	We buy a register from Fonecta, which is probably Finland's biggest supplier. Numbers are picked from register, which includes practically all telephone numbers except secret ones and people refusing interviews as a principle.
				Sample will be picked up randomly in specified areas.

LT	RAIT	Face-to-face	15–74	Sampling design: The multistage random probability routine with reference to updated data about Lithuania permanent residents that are carried out by the Department of Statistics Lithuania. The whole sample represents 2 625 400 Lithuanian residents.
				The multistage random probability routine sampling contains 3 stages and ensures equal chances for all 15 – 74 year old inhabitants of Lithuania to be selected into the survey sample and to express their opinion. Respondents' distribution by sex, age, place of residence and education correspond to all 15–74.
				Interview method: direct (face-to-face) interview at respondent's home.
				Generally we do not recommend CATI for representative surveys because of low incidence rate of fixed lines phones (~8–10% inhabitants of Lithuania are not possible to reach neither by fixed, nor by mobile phones).
LV	RAIT	Face-to-face	15–74	When it is necessary to obtain opinion of all residents of Latvia (or sufficiently wide part of society) on certain issue, the most appropriate method is including the questions in monthly omnibus survey.
				Technical characteristics of Latvian monthly omnibus survey:
				Sample: at least 1000 permanent residents of Latvia 15 to 74 years old. Research method: face-to–face interviews at the places of residence of respondents. Sampling method: multistage stratified random sampling. Stratification criteria: administrative – territorial division of Latvia. Respondent selection principles: random route method + first birthday rule. Sampling points: there are around 110 sampling points in Omnibus.
				To provide a qualitative realization of the survey, the research center employs 170 qualified interviewers in whole territory of Latvia corresponding to the requirements of modern surveys. The analysis and interpretation of obtained data is carried out by academically educated project managers.
PL	Synovate	CATI	≥ 16	Probabilistic method based on Random Digital Dialling. Prefixed are selected to cover all regions in Poland and the number of calls within each region is adjusted to match population size. Last birthday method is used to select respondents.
RU	Synovate	CATI	18–64	Definition of the sample: nation-wide sample representative with respect to: region, type of locality (urban population), gender, age.
				The structure of the sample would be generated on the basis of latest information from the Russian Official Statistics. Urban districts are sampled with respect to population density; people who satisfy the established criteria are chosen from random digit dialled (RDD) sample.

SE	Synovate	CATI	≥ 16	Synovates "Million Household Sample": Each month Synovate imports a file from PAR (Sweden's major supplier), which consists of one third of all private Swedish households with fixed telephones.
				The sample used in our omnibus is drawn from the "Million Sample" with 250 telephone numbers at a time.
				To choose who in the household to be interviewed, we use a variant of a method known as Troldahl-Carter. The method is based on asking two initial questions to determine who should be interviewed:
				1) How many people 16 years and older, including yourself, live in your household?
				2) How many of these are women?
				Based on these variables randomly the oldest man, second youngest woman, younger man etc will be selected (with equal probability) for the interview.

[a] CATI = computer-assisted telephone interviews.

Source: Synovate.

Appendix C. Results for the rest of Russia

A separate sample was made for the rest of Russia (RU-r) for having a chance of evaluating how use and attitudes might differ within Russia. However, the sample was small (500 persons), which limits the generality of the results. The results are listed below in tables which contain the same information as those found in Section 4 and Appendix E. The first table below shows that a majority of the respondents lived in Moscow.

Table C.1. Place of living (based on Q1), per cent of respondents in RU-r.

Chelyabinsk	6.0
Kazan	6.0
Krasnoyarsk	5.0
Moscow	59.0
Novosibirsk	8.0
Perm	5.0
Rostov-on-Don	6.0
Ufa	5.1
Nobs	500

Table C.2. Q3–Q5 results for RU-r.

	Q3 (Do you have or have had an occupation that is somehow dependent on the Baltic Sea?)	Q4 (Have you ever been to the Baltic Sea to spend leisure time there?)	Q5 (When was your last visit to the Baltic Sea to spend leisure time there?)		
			Last 12 months?	Last 5 years, but not in the last 12 months?	More than 5 years ago?
% yes	2.3	13.2	4.0	21.1	74.9
% no	97.7	86.8			
Nobs	500	500	66	66	66

The results for Q6–Q7 are not reported because so few respondents (3) had visited the Baltic Sea in the last 12 months.

Table C.3. Q20–Q21 results for RU-r.

	Q20 (In your opinion, what is on average the status of the environment in the Russian part of the Baltic Sea? Please use a scale from 1 to 5, where 1 stands for "very bad" and 5 stands for "very good". The numbers in between serve to graduate your assessment.)	Q21 (In your opinion, what is on average the status of the Baltic Sea environment in general? Please use a scale from 1 to 5, where 1 stands for "very bad" and 5 stands for "very good". The numbers in between serve to graduate your assessment.)
Median	3	3
Mean	2.95	3.03
Std.dev.	.97	.94
Nobs	500	500
% 1	9.7	7.6
% 2	11.1	11.5
% 3	59.2	56.3
% 4	12.2	17.4
% 5	7.8	7.1

Table C.4. Q22 results for RU-r.

To what extent do you disagree or agree with the following statements? Please use a scale from 1 to 5, where 1 stands for "I totally **dis**agree" and 5 stands for "I totally agree".

a. I am worried about the Baltic Sea environment.

b. Baltic Sea environmental problems belong to the three most important problems in Russia.

c. The Baltic Sea environment is better today than 10 years ago.

d. The Baltic Sea environment is poorer today than 10 years ago.

e. The Baltic Sea water quality restricts my recreation opportunities at present.

f. I affect the Baltic Sea environment.

	a.	b.	c.	d.	e.	f.
Median	3	3	1	4	2	1
Mean	3.42	3.38	1.83	3.84	2.42	1.79
Std.dev.	1.47	1.35	1.16	1.34	1.47	1.24
Nobs	500	500	500	500	500	500
% 1	18.2	13.7	59.4	10.5	43.4	63.7
% 2	6.7	6.7	10.3	2.8	7.5	12.9
% 3	26.5	38.5	23.4	25.9	28.7	13.2
% 4	13.7	9.8	1.8	13.6	5.3	2.6
% 5	34.9	31.2	5.1	47.1	15.1	7.6

Table C.5. Q23 results for RU-r.

I will now mention some Baltic Sea issues. For each of them you are asked to say to what extent you view it as a problem or not, using a scale from 1 to 5, where 1 stands for "Not at all a problem in the Baltic Sea" and 5 stands for "A very big problem in the Baltic Sea".

a. Coastal water quality

b. Open sea water quality

c. Water turbidity

d. Algal blooms

e. Lack of oxygen in sea bottoms

f. Heavy metals and other hazardous substances

g. Small everyday oil leakages

	a.	b.	c.	d.	e.	f.	g.
Median	5	5	5	4	4	5	5
Mean	4.22	4.06	4.01	3.74	3.72	4.56	4.37
Std.dev.	1.06	1.13	1.23	1.38	1.31	.89	.95
Nobs	500	500	500	500	500	500	500
% 1	2.6	4.5	6.1	12.2	9.4	2.4	2.0
% 2	3.4	2.4	4.2	3.4	4.4	.9	1.2
% 3	21.6	25.1	24.5	26.9	33.4	10.0	16.2
% 4	14.3	16.2	12.4	13.1	9.6	12.0	17.3
% 5	58.1	51.8	52.8	44.4	43.2	74.7	63.2

h. Possibility of major oil spill

i. Unexploded mines and chemical weapons lying at the sea bottom

j. Gas pipelines lying at the sea bottom

k. Offshore wind turbines

l. Overfishing

m. Litter

n. Damage to flora and fauna in the sea

	h.	i.	j.	k.	l.	m.	n.
Median	5	5	4	3	5	5	5
Mean	4.56	4.50	3.58	3.11	4.48	4.63	4.44
Std.dev.	.86	.94	1.41	1.64	.91	.82	.94
Nobs	500	500	500	500	500	500	500
% 1	1.3	2.0	12.1	28.5	1.5	1.8	2.2
% 2	1.4	2.9	8.4	8.2	1.6	1.2	1.3
% 3	12.0	10.0	27.8	20.9	14.0	7.0	14.3
% 4	10.6	12.5	11.2	7.6	12.9	11.9	14.7
% 5	74.7	72.6	40.6	34.9	69.9	78.1	67.5

o. Are there any other issues related to the Baltic Sea that in your opinion are very big problems?

% yes: 5.4. Nobs: 27.

Table C.6. Other issues regarded as very big problems, per cent of all issues mentioned by those who answered "yes" to Q23o in RU-r.

Responses mentioning issues already brought up in Q23a–n	14.8
Human factor	11.1
Infrastructure construction	7.4
Pollution	14.8
Other	51.9
Nobs	27
Number of respondents	27

Table C.7. Q24 results for RU-r.

To what extent do you disagree or agree with the following statements about your role in taking actions for improving the Baltic Sea environment? Please use a scale from 1 to 5, where 1 stands for "I totally disagree" and 5 stands for "I totally agree".

a. I can myself play a role in improving the Baltic Sea environment.
b. I currently contribute financially for funding actions through taxes or other types of payments.
c. I am prepared to contribute more financially for funding actions.

	a.	b.	c.
Median	1	2	1
Mean	2.01	2.49	1.88
Std.dev.	1.33	1.66	1.28
Nobs	500	500	500
% 1	53.6	48.7	60.6
% 2	17.0	8.7	11.1
% 3	14.5	13.0	16.9
% 4	5.6	7.6	3.7
% 5	9.3	22.0	7.7

Table C.8. Q25 results for RU-r.

I will now mention five Russian actors who might take actions for improving the Baltic Sea environment. Then I will ask you for each of them to say to what extent you view it as necessary or not that they take action, using a scale from 1 to 5, where 1 stands for "Not at all necessary" and 5 stands for "Very necessary".

a. Wastewater treatment plants
b. Farmers
c. Professional fishermen
d. Industry
e. Sea transports and ports

	a.	b.	c.	d.	e.
Median	5	4	5	5	5
Mean	4.68	3.78	4.37	4.41	4.54
Std.dev.	.80	1.37	1.11	1.13	.92
Nobs	498	493	494	497	499
% 1	1.8	10.3	5.3	5.5	2.7
% 2	0.9	6.7	2.3	2.6	1.8
% 3	7.4	23.6	11.3	9.0	10.3
% 4	8.0	12.7	13.2	10.8	11.0
% 5	81.8	46.7	67.9	72.1	74.3

Table C.9. Q26 results for RU-r.

I will now mention four ways that can possibly be used for individuals and enterprises in Russia to fund actions to improve the Baltic Sea environment. Then I will ask you for each of them to say to what extent you find them acceptable or not, using a scale from 1 to 5, where 1 stands for "Totally unacceptable" and 5 stands for "Totally acceptable".

a. Increased taxes
b. Increased water bills
c. Increased charges on pollution emissions
d. Earmarked payments paid by everyone

	a.	b.	c.	d.
Median	1	1	5	2
Mean	1.72	1.74	4.40	2.20
Std.dev.	1.14	1.16	1.23	1.36
Nobs	486	487	495	491
% 1	63.8	63.1	8.7	49.3
% 2	14.3	14.8	1.7	8.6
% 3	12.9	12.4	7.2	25.9
% 4	4.5	4.6	7.3	6.9
% 5	4.4	5.1	75.1	9.3

Table C.10. Age (based on Q27), per cent of respondents in RU-r

18–24	18.2
25–34	23.8
35–44	18.8
44–54	22.1
55–64	17.1
Nobs	500

Table C.11. Gender (based on Q28), per cent of respondents in RU-r.

Female	47.1
Male	52.9
Nobs	500

Table C.12. Highest level of education (based on Q29), per cent of respondents in RU-r.

1. Uncompleted secondary school	3.3
2. Secondary school	22.3
3. Technical school/college	23.4
4. Higher	51.0
Nobs	500

69

Table C.13. Household size (based on Q30) and number of household members younger than 18 years old (based on Q31), per cent of respondents in RU-r.

Number of persons	Household size	Household members < 18 years old
0		47.0
1	10.7	25.5
2	28.4	24.4
3	28.6	2.7
4	19.1	.3
5	11.1	0
6	1.5	0
7	0	0
8–	0.7	0
Nobs	472	500

Table C.14. Monthly net (after tax) household income in RUB (based on Q32), per cent of respondents in RU-r.

1. 0–13 000	18.9
2. 13 001–23 000	16.9
3. 23 001–35 000	32.1
4. 35 001–55 000	20.4
5. 55 001–	11.7
Nobs	304

Appendix D. Weighting procedure

Weighting was applied for making the data to better reflect the attitudes of the sampled population with respect to gender and age. The weighting procedure applied by Synovate is described in the box below.

Step 1. Collect census data for age and gender from every country. This is illustrated by the case of Finland, for which 2.3 % of the total population is men in the ages of 15 to 17 years, see the table below. This proportion then becomes the ideal weight for this part of the population.

Population 15+ years in Finland (per cent)			
	Men	**Women**	
15–17 years	2.3	2.2	
18–24 years	5.3	5.0	
25–34 years	7.9	7.4	
35–44 years	7.6	7.4	
45–54 years	8.5	8.4	
55–64 years	8.7	8.9	
65–74 years	5.0	5.8	
75 – years	3.4	6.2	
	48.7	51.3	100.0

Step 2. After completion of data collection, the weighting index of each respondent is calculated using the above weight matrix. If 15–17 year-old men are underrepresented in the collected data (e.g., 2.1 % instead of the ideal weight of 2.3 %), each respondent in this group is weighted up by 0.023/0.021=1.095238. Corresponding calculations are performed for all respondents in all groups.

Step 3. Once the weighting indexes have been calculated for all respondents the data are weighted, which gives a final result which is representative for the total population with respect to gender and age.

Source: Synovate.

Appendix E. Socio-demographic descriptive statistics

This appendix presents the results for the socio-demographic questions Q27–Q32. The results are based on data that are weighted with respect to gender and age. For education, household structure and income, corresponding population statistics are included in cases when they were readily available.

E.1 Age and gender

Because of the weighting that was applied, Tables E.1 and E.2 should describe the age and gender distribution among both respondents and the population. However, it should be noted that the sampling varied across countries in terms of what age groups were included, see Table 3.1 and Appendix B. This explains why some age groups are not represented, e.g. 65–74 years in RU-c.

Table E.1. Age (based on Q27), per cent of respondents.

Years	DE	DK	EE	FI	LT	LV	PL	RU-c	SE
15–17	2.4	.0	4.3	4.5	5.3	4.5	4.7	.0	3.3
18–24	9.6	10.8	13.9	10.3	14.3	14.1	12.9	17.9	11.3
25–34	13.7	15.2	18.8	15.3	17.7	18.5	19.2	24.1	15.0
35–44	18.0	18.4	17.4	15.0	18.4	17.5	15.2	19.1	16.9
45–54	18.1	17.8	18.0	16.9	19.1	18.4	17.5	21.9	15.7
55–64	13.7	16.6	15.4	17.6	13.7	14.3	14.5	17.0	15.6
65–74	13.9	12.2	12.2	10.8	11.5	12.7	8.6	.0	11.6
75–	10.8	9.0	.0	9.6	.0	.0	7.3	.0	10.5
Nobs	1000	999	1001	1007	1032	1060	1010	1000	1017

Table E.2. Gender (based on Q28), per cent of respondents.

	DE	DK	EE	FI	LT	LV	PL	RU-c	SE
Female	51.4	50.9	53.2	51.3	52.8	52.8	52.2	46.9	50.6
Male	48.6	49.1	46.8	48.7	47.2	47.2	47.8	53.1	49.4
Nobs	1000	999	1001	1007	1032	1060	1010	1000	1017

E.2 Education

The tables below describe the percentages of highest level of education among the respondents. It was not possible to define completely homogenous education categories among all countries, but the following four categories were used in most of them: (1) compulsory school, (2) high school, (3) vocational education and (4) university. However, five or six categories were used in some countries.

Table E.3. Highest level of education (based on Q29), per cent of respondents in DE.

	Respondents	Population
0. Keinen Abschluss	4.5	n.a
1. Der Hauptschulabschluss	9.0	n.a
2. Der Realschullabschluss	8.3	n.a
3. Das Abitur	18.9	n.a
4. Berufsausbildung	52.6	n.a
5. Universitätsabschluss	6.7	n.a
Nobs	978	

Table E.4. Highest level of education (based on Q29), per cent of respondents in DK.

	Respondents	Population
1. Folkeskolen	14.9	30.8
2. Erhvervsuddannelse	21.7	8.3
3. Gymnasial uddannelse	9.9	32.0
4. Kort og mellemlang videregående uddannelse (op til 3 år)	31.8	18.9
5. Lang videregående uddannelse (mere end 3 år)	21.7	6.5
Not known		3.5
Nobs	999	

Source for population: KRHFU1, 15–69 years of age, 2009.

Table E.5. Highest level of education (based on Q29), per cent of respondents in EE.

	Respondents	Population
1. Basic (up to 9 cl.)	16.3	33.0
2. Professional without secondary	4.7	0.9
3. Secondary, sec. professional, sec. technical	57.9	41.4
4. University degree	21.2	24.7
Nobs	1001	

Table E.6. Highest level of education (based on Q29), per cent of respondents in FI.

	Respondents	Population
1. Perus/kansakoulu	18.1	34.5
2. Ammattikoulu	33.5	49.5
3. Lukio	18.1	
4. Korkeakoulututkinto	30.3	16.0
Nobs	998	

Source for population: Statistics Finland (2009).

Table E.7. Highest level of education (based on Q29), per cent of respondents in LT.

	Respondents	Population
1. Primary, basic	23.5	25.9
2. General secondary	30.2	18.3
3. After general secondary, special secondary, higher technical	26.6	32.7
4. Higher	19.7	23.1
Nobs	1032	

Table E.8. Highest level of education (based on Q29), per cent of respondents in LV.

	Respondents	Population
1. Basic education or less	20.5	22.9
2. Secondary general education	23.7	56.1
3. Secondary vocational or professional education	33.3	
4. Higher education	22.5	21.0
Nobs	1060	

Source: Eurostat (2009), based on LFS.

Table E.9. Highest level of education (based on Q29), per cent of respondents in PL.

	Respondents	Population
1. Primary, basic	7.1	25.4
2. General secondary	50.3	56.9
3. After general secondary, special secondary, higher technical	3.9	
4. Higher	38.7	17.7
Nobs	1010	

Table E.10. Highest level of education (based on Q29), per cent of respondents in RU-c.

	Respondents	Population
1. Uncompleted secondary school	1.2	n.a.
2. Secondary school	24.5	n.a.
3. Technical school/college	23.3	n.a.
4. Higher	51.0	n.a.
Nobs	1000	

Table E.11. Highest level of education (based on Q29), per cent of respondents in SE.

	Respondents	Population
1. Obligatorisk skola	24.2	n.a.
2. Yrkesutbildning	26.9	n.a.
3. Gymnasieutbildning	13.7	n.a.
4. Högskola	35.2	30
Nobs	1017	

Source for population: Utbildning och forskning at Statistikdatabasen online (www.scb.se).

E.3 Household structure

Q29 and Q30 gave information about the total number of household members and also the number of household members younger than 18 years old.

Table E.12. Household size (based on Q30) and number of household members younger than 18 years old (based on Q31), per cent of respondents in DE.

Number of persons	Household size Respondents	Population	Household members < 18 years old Respondents	Population
0			71.1	n.a.
1	31.9	n.a.	15.1	n.a.
2	36.8	n.a.	10.3	n.a.
3	13.8	n.a.	3.0	n.a.
4	11.2	n.a.	0.3	n.a.
5	4.7	n.a.	0.3	n.a.
6	1.3	n.a.	0	n.a.
7	0.3	n.a.	0	n.a.
Nobs	984		960	

Table E.13. Household size (based on Q30) and number of household members younger than 18 years old (based on Q31), per cent of respondents in DK.

Number of persons	Household size Respondents	Population	Household members < 18 years old Respondents	Population
0			64.7	n.a.
1	28.1	38.7	14.1	n.a.
2	33.0	32.9	14.6	n.a.
3	13.1	11.6	5.1	n.a.
4	16.6	11.4	1.4	n.a.
5	7.2	4.0	.1	n.a.
6	1.8	1.0	0	n.a.
7	0.1	0.3	0	n.a.
8–	0.1	0.2	0	n.a.
Nobs	999		999	

Source for population: DST, table FAM55N, 2010

Table E.14. Household size (based on Q30) and number of household members younger than 18 years old (based on Q31), per cent of respondents in EE.

Number of persons	Household size Respondents	Population	Household members < 18 years old Respondents	Population
0			62.6	n.a.
1	18.5	34.4	20.9	n.a.
2	31.7	29.7	13.8	n.a.
3	24.1	17.5	2.2	n.a.
4	17.9	13.1	.5	n.a.
5	5.8	3.6	0	n.a.
6–	2.0	1.6	0	n.a.
Nobs	1001		1001	

Source for population: Eurostat/SILC: ilc_lvph03-Distribution of households by household size.

Table E.15. Household size (based on Q30) and number of household members younger than 18 years old (based on Q31), per cent of respondents in FI.

Number of persons	Household size Respondents	Population	Household members < 18 years old Respondents	Population
0			61.0	59.7
1	25.5	n.a.	15.3	17.5
2	36.4	n.a.	14.1	15.4
3	13.4	n.a.	7.0	5.3
4	14.3	n.a.	1.8	
5	6.8	n.a.	0.2	2.0
6	2.5	n.a.	0	
7–	1.1	n.a.	0.6	
Nobs	1005		882	

Source for population: Statistics Finland (2009).

Table E.16. Household size (based on Q30) and number of household members younger than 18 years old (based on Q31), per cent of respondents in LT.

Number of persons	Household size Respondents	Population	Household members < 18 years old Respondents	Population
0			61.2	59.7
1	14.3	n.a.	22.4	
2	36.9	n.a.	13.3	
3	23.8	n.a.	2.6	
4	17.4	n.a.	0.1	40.3
5	5.8	n.a.	0.3	
6	0.6	n.a.	0	
7–	1.2	n.a.	0.1	
Nobs	1029		1029	

Table E.17. Household size (based on Q30) and number of household members younger than 18 years old (based on Q31), per cent of respondents in LV.

Number of persons	Household size Respondents	Population	Household members < 18 years old Respondents	Population
0			63.1	68.5
1	16.8	24.7	21.9	
2	29.5	32.3	11.1	
3	24.4	20.9	2.6	31.5
4	17.6	13.9	1.0	
5–	11.7	8.2	0.5	
Nobs	1060		1060	

Source for population: Central Statistical Bureau (2008), based on the Household budget survey 2008.

Table E.18. Household size (based on Q30) and number of household members younger than 18 years old (based on Q31), per cent of respondents in PL.

Number of persons	Household size Respondents	Population	Household members < 18 years old Respondents	Population
0			60.4	n.a.
1	9.6	n.a.	21.3	n.a.
2	21.6	n.a.	12.6	n.a.
3	23.1	n.a.	3.8	n.a.
4	24.5	n.a.	.7	n.a.
5	12.2	n.a.	.5	n.a.
6	5.0	n.a.	.6	n.a.
7–	4.0	n.a.	0	n.a.
Nobs	1008		1010	

Table E.19. Household size (based on Q30) and number of household members younger than 18 years old (based on Q31), per cent of respondents in RU-c.

Number of persons	Household size Respondents	Population	Household members < 18 years old Respondents	Population
0			40.4	n.a.
1	11.1	9.5	32.5	n.a.
2	27.9	23.7	24.1	n.a.
3	30.8	29.4	2.8	n.a.
4	18.9	20.7	.3	n.a.
5	9.2	9.9	0	n.a.
6	1.8	4.4	0	n.a.
7	0.1	1.4	0	n.a.
8–	0.2	1.1	0	n.a.
Nobs	955		1000	

Source for population: Russian Longitudinal Monitoring Survey, 2008.

Table E.20. Household size (based on Q30) and number of household members younger than 18 years old (based on Q31), per cent of respondents in SE.

Number of persons	Household size Respondents	Population	Household members < 18 years old Respondents	Population
0			63.9	n.a.
1	26.4	44.2	17.1	n.a.
2	31.8	30.0	14.3	n.a.
3	17.0	10.6	4.0	n.a.
4	16.8	11.0	0.7	n.a.
5–	8.0	4.2	0.1	n.a.
Nobs	1016		1015	

Source for population: Hushållens ekonomi at Statistikdatabasen online (www.scb.se).

E.4 Income

In Q32 on income, respondents were asked to select the income category in which their monthly net income after tax of their household was found. The aim was to obtain information on disposable household income, i.e. the respondents were asked to include all sources of income, including salaries, pensions and allowances. Five income categories were used in all countries except PL, and there were efforts made to define these categories according to the 0–20, 21–40, 41–60, 61–80 and 81–100 percentiles. However, in the end this did not turn out to be possible in all countries due to the omnibus structure of the data collection in some countries. In PL, six income categories were used, and the two highest categories together correspond to the 81–100 percentile.

Table E.21. Monthly net (after tax) household income (based on Q32), per cent of respondents in DE.

EUR	Respondents	Population
1. 0–899	9.8	~20
2. 900–1 599	19.3	~20
3. 1 600–2 299	29.7	~20
4. 2 300–3 499	24.6	~20
5. 3 500–	16.5	~20
Nobs	783	

Table E.22. Monthly net (after tax) household income (based on Q32), per cent of respondents in DK.

DKK	Respondents	Population
1. Under 10 000 kr	12.0	16.2
2. 10 000–14 999 kr	13.3	19.1
3. 15 000–19 999 kr	13.8	14.3
4. 20 000–35 000 kr	29.1	24.0
5. Over 35 000 kr	31.8	26.4
Nobs	917	

Source for population: Statistics Denmark.

Table E.23. Monthly net (after tax) household income (based on Q32), per cent of respondents in EE.

EEK	Respondents	Population
1. 0–7 260	21.9	n.a.
2. 7 261–12 100	22.4	n.a.
3. 12 101–18 150	27.1	n.a.
4. 18 151–24 200	13.3	n.a.
5. 24 201–	15.3	n.a.
Nobs	873	

Table E.24. Monthly net (after tax) household income (based on Q32), per cent of respondents in FI.

EUR	Respondents	Population
1. 0–1 699	24.1	~20
2. 1 700–2 499	21.1	~20
3. 2 500–3 199	19.2	~20
4. 3 200–4 199	20.1	~20
5. 4 200–	15.5	~20
Nobs	854	

Table E.25. Monthly net (after tax) household income (based on Q32), per cent of respondents in LT.

LTL	Respondents	Population
1. 0–700	17.2	n.a.
2. 701–1 000	19.1	n.a.
3. 1 001–1 600	20.9	n.a.
4. 1 601–2 500	23.0	n.a.
5. 2 501–	19.9	n.a.
Nobs	882	

Table E.26. Monthly net (after tax) household income (based on Q32), per cent of respondents in LV.

LVL	Respondents	Population
1. 0–150	14.8	n.a.
2. 151–275	21.7	n.a.
3. 276–350	21.2	n.a.
4. 351–500	19.7	n.a.
5. 501–	22.6	n.a.
Nobs	811	

Table E.27. Monthly net (after tax) household income (based on Q32), per cent of respondents in PL.

PLN	Respondents	Population
1. 0–1 999	30.9	~20
2. 2 000–2 499	13.6	~20
3. 2 500–3 499	18.6	~20
4. 3 500–4 499	13.7	~20
5. 4 500–9 000	17.6	~20
6. 9 001–	5.6	
Nobs	1010	

Table E.28. Monthly net (after tax) household income (based on Q32), per cent of respondents in RU-c.

RUB	Respondents	Population
1. 0–13 000	21.1	~20
2. 13 001–23 000	29.5	~20
3. 23 001–35 000	31.9	~20
4. 35 001–55 000	13.3	~20
5. 55 001–	4.2	~20
Nobs	595	

Table E.29. Monthly net (after tax) household income (based on Q32), per cent of respondents in SE.

SEK	Respondents	Population
1. 0–11 999	5.1	~20
2. 12 000–19 999	12.1	~20
3. 20 000–29 999	23.0	~20
4. 30 000–44 999	23.2	~20
5. 45 000–	36.6	~20
Nobs	579	

Source for population: Statistics Sweden, Hushållens utgifter (HUT)/Disponibel inkomst.

Appendix F. Other marine issues being viewed as very big problems

In Q23a–Q23n, the respondents were asked to consider to what extent a number of marine issues are problems or not in the Baltic Sea. Q23a–Q23n were followed by an open-ended question about whether there are any other very big problems in the sea (Q23o). Those respondents who answered "yes" were subsequently asked to describe what these very big problems are. This appendix reports for each country a categorization of the issues that were brought up as very big problems. Percentages in the tables below are based on unweighted data. Note that some respondents mentioned more than one issue, which means that their answers might belong to more than one category. This explains why the number of observations (i.e. issues) sometimes exceeds the number of respondents.

Table F.1. Other issues regarded as very big problems in DE.

Overall, 195 respondents have stated other topics/problems important for the Baltic Sea. Among them the following categories were identified:

- Tourism (too much tourism, overuse of Baltic Sea, too many hotels)
- Sea transports
- Climate change (mainly rising sea level)
- Jellyfish (too much)
- Tanker and potential oil spills

Tourism and sea transports were the categories for which most answers were found to belong.

Table F.2. Other issues regarded as very big problems, per cent of all issues mentioned by those who answered "yes" to Q23o in DK.

Responses mentioning issues already brought up in Q23a–n	
a. Coastal water quality	0
b. Open sea water quality	0
c. Water turbidity	0
d. Algal blooms	0
e. Lack of oxygen in sea bottoms	0.5
f. Heavy metals and other hazardous substances	3.3
g. Small everyday oil leakages	4.7
h. Possibility of major oil spill	
i. Unexploded mines and chemical weapons lying at the sea bottom	2.4
j. Gas pipelines lying at the sea bottom	0.5
k. Offshore wind turbines	0.5
l. Overfishing	1.9
m. Litter	6.2
n. Damage to flora and fauna in the sea	4.3
Responses mentioning other issues	
Shipping, no licensed pilots (risk of oil spill among other things)	5.2
Shipping, other issues	13.3
Agriculture	10.0
Nuclear issues	3.8
Bridges	3.8
Pollution in general	3.8
Industry	3.3
Yachting	2.8
Proposals	0.9
Climatic changes	0.9
Restricted access	0.5
Noise	0.5
Tourism	0.5
Air pollution	0.5
CO_2	0.5
Power cables at the bottom of the sea	0.5
Erosion	0.5
Non-transparency	0.5
Other countries (many of these are in 1 or 2 other groups)	20.9
No group	3.3
Nobs	211
Number of respondents	178

Table F.3. Other issues regarded as very big problems, per cent of all issues mentioned by those who answered "yes" to Q23o in EE.

Responses mentioning issues already brought up in Q23a–n	
a. Coastal water quality	2.4
b. Open sea water quality	3.2
c. Water turbidity	1.6
d. Algal blooms	1.6
e. Lack of oxygen in sea bottoms	0
f. Heavy metals and other hazardous substances	4.8
g. Small everyday oil leakages	0
h. Possibility of major oil spill	0
i. Unexploded mines and chemical weapons lying at the sea bottom	1.6
j. Gas pipelines lying at the sea bottom	5.6
k. Offshore wind turbines	0
l. Overfishing	0
m. Litter	5.6
n. Damage to flora and fauna in the sea	0.8
Responses mentioning other issues	
Oil leakage of unspecified size	5.6
Problematic animals	2.4
Shipping	20.0
Cruise liners / Ferries	4.0
Wastewater	5.6
Lack of regulations / cooperation in Baltic Sea region	2.4
Shoreline pollution	6.4
Pollution, other	7.2
Fishing, other	2.4
Baltic Sea Qualities	4.0
People	2.4
Limited access to coastline	1.6
Miscellaneous	8.8
Nobs	125
Number of respondents	125

Table F.4. Other issues regarded as very big problems, per cent of all issues mentioned by those who answered "yes" to Q23o in FI.

Responses mentioning issues already brought up in Q23a–n	
a. Coastal water quality	0
b. Open sea water quality	0
c. Water turbidity	0
d. Algal blooms	0.8
e. Lack of oxygen in sea bottoms	0
f. Heavy metals and other hazardous substances	0.2
g. Small everyday oil leakages	2.0
h. Possibility of major oil spill	0.8
i. Unexploded mines and chemical weapons lying at the sea bottom	0.6
j. Gas pipelines lying at the sea bottom	1.4
k. Offshore wind turbines	0
l. Overfishing	0
m. Litter	1.0
n. Damage to flora and fauna in the sea	1.0
Responses mentioning other issues	
Pollution from other countries	18.6
Ship traffic	12.7
Pollution from agriculture	11.3
Pollution in general	8.7
Oil tankers and transport	5.9
Pollution from ships	5.1
International co-operation	4.8
Cruises/passenger ships	4.2
Pollution from cities/towns	2.0
Too many cormorants	2.0
Ignorance	2.0
Pollution from industry	1.4
Too many seals	1.4
Fish farming	1.2
Forest industry	1.0
Tourism	0.8
Coastal settlements/construction	0.8
Invasive species	0.6
Junk in the sea and the sea bottom	0.6
Nuclear power plants, condensation water	0.6
Not enough surveillance	0.4
Chemical transports	0.4
Other	5.5
Nobs	495
Number of respondents	390

Table F.5. Other issues regarded as very big problems, per cent of all issues mentioned by those who answered "yes" to Q23o in LT.

Responses mentioning issues already brought up in Q23a–n	
a. Coastal water quality	5.9
b. Open sea water quality	4.6
c. Water turbidity	0.0
d. Algal blooms	0.0
e. Lack of oxygen in sea bottoms	0.0
f. Heavy metals and other hazardous substances	0.7
g. Small everyday oil leakages	5.2
h. Possibility of major oil spill	5.2
i. Unexploded mines and chemical weapons lying at the sea bottom	0.0
j. Gas pipelines lying at the sea bottom	5.9
k. Offshore wind turbines	0.0
l. Overfishing	0.0
m. Litter	9.8
n. Damage to flora and fauna in the sea	0.0
Responses mentioning other issues	
Lack of infrastructure (no toilets, no trash beans)	6.5
Irresponsible/untidy holidaymakers	12.4
Ships, motorboats and water motorbikes	4.6
Sea coast erosion	9.8
Illegal constructions	5.9
Don't know	11.8
Other answers	11.8
Nobs	153
Number of respondents	126

Table F.6. Other issues regarded as very big problems, per cent of all issues mentioned by those who answered "yes" to Q23o in LV.

Responses mentioning issues already brought up in Q23a–n	
a. Coastal water quality	0
b. Open sea water quality	0
c. Water turbidity	0
d. Algal blooms	0
e. Lack of oxygen in sea bottoms	0
f. Heavy metals and other hazardous substances	0
g. Small everyday oil leakages	11.8
h. Possibility of major oil spill	2.4
i. Unexploded mines and chemical weapons lying at the sea bottom	2.4
j. Gas pipelines lying at the sea bottom	2.4
k. Offshore wind turbines	0
l. Overfishing	3.5
m. Litter	0
n. Damage to flora and fauna in the sea	3.5
Responses mentioning other issues	
Various pollution	17.6
Pollution by people and people's attitudes	15.3
Shipping	12.9
Construction in the dune area and cutting trees	7.1
Lack of appropriate action of responsible authorities	5.9
Pollution of rivers	4.7
Changing coastline and shallow waters	3.5
Natural disasters	3.5
Other non-classified	3.5
Nobs	85
Number of respondents	85

Table F.7. Other issues regarded as very big problems, per cent of all issues mentioned by those who answered "yes" to Q23o in PL.

Responses mentioning issues already brought up in Q23a–n	
a. Coastal water quality	2.0
b. Open sea water quality	0.0
c. Water turbidity	0.3
d. Algal blooms	0.0
e. Lack of oxygen in sea bottoms	0.3
f. Heavy metals and other hazardous substances	1.3
g. Small everyday oil leakages	1.7
h. Possibility of major oil spill	0.7
i. Unexploded mines and chemical weapons lying at the sea bottom	1.0
j. Gas pipelines lying at the sea bottom	6.0
k. Offshore wind turbines	0.0
l. Overfishing	3.7
m. Litter	10.0
n. Damage to flora and fauna in the sea	2.7
Responses mentioning other issues	
Non-sense, not relevant, not clear answers	24.0
Sea traffic (too many ships, litter, pollution, noise)	6.3
River water quality (mostly wastewater treatment plants and other pollution (from agriculture, industry) that gets to the Baltic Sea with rivers. (Many respondents mentioned increased pollution this year due to the flood in June.)	14.0
Beaches and cliffs erosion, storms (infrastructure and protection of shores and beaches needed)	7.7
Tourism and infrastructure (both views – too many tourists and their ecological pressure on the Baltic Sea as well as too little possibilities and too little infrastructure available for tourists)	15.0
Climate change	1.0
Other countries (other countries as polluters, lack of international cooperation, military)	2.3
Nobs	300
Number of respondents	280

Table F.8. Other issues regarded as very big problems, per cent of all issues mentioned by those who answered "yes" to Q23o in RU-c.

Responses mentioning issues already brought up in Q23a–n	12.8
Human factor	36.0
Infrastructure construction	11.6
Pollution	7.0
Water transport	5.8
Other	26.7
Nobs	86
Number of respondents	86

Table F.9. Other issues regarded as very big problems, per cent of all issues mentioned by those who answered "yes" to Q23o in SE.

Responses mentioning issues already brought up in Q23a–n	
a. Coastal water quality	0.3
b. Open sea water quality	0.3
c. Water turbidity	0.3
d. Algal blooms	0.7
e. Lack of oxygen in sea bottoms	0.7
f. Heavy metals and other hazardous substances	3.7
g. Small everyday oil leakages	3.4
h. Possibility of major oil spill	3.1
i. Unexploded mines and chemical weapons lying at the sea bottom	0
j. Gas pipelines lying at the sea bottom	1.0
k. Offshore wind turbines	0
l. Overfishing	4.8
m. Litter	6.5
n. Damage to flora and fauna in the sea	2.0
Responses mentioning other issues	
Eutrophication	6.5
Sewage in general	3.7
Other emissions in general	5.1
Emissions from agriculture	3.1
Emissions from industries	3.1
Emissions from nuclear power plants	1.0
Emissions from other countries	2.7
Sewage from boats and ships	4.1
Other emissions (incl. litter) from boats and ships	12.2
Physical disturbance (e.g. noise, waves) from boating and shipping	4.4
Boat bottom paints	2.0
Boats and ships in general	6.5
Jellyfish	1.4
Physical exploitation of the coast (buildings etc.), weaker shore protection	1.4
Dredging	0.3
Rising sea level	0.3
People's attitudes and lifestyle/lack of action and responsibility	3.7
Less fish than before	2.0
Seals and cormorants	0.7
New species	0.7
Acidification	1.7
Global warming/CO_2	1.7
Shore erosion	0.3
Other	4.4
Nobs	294
Number of respondents	230

Appendix G. Findings from national perspectives

Below, the general findings in Sections 4 and 5 are complemented by adopting a national perspective on the BalticSurvey results for seven selected Baltic Sea countries.

G.1 Denmark

Based on a quite broad definition of the Baltic Sea, where it is defined to include Kattegat, Skagerrak, the Danish straits, the eastern coast and fjords as well as the Smålandsfarvand south of Sealand and Funen, the results of the conducted survey show that around 90 % of the Danish population at some point in time has visited the Baltic Sea with the purpose of spending leisure time there, and that almost 70 % has in fact done so within the last year (April 2009 to March 2010). Comparing results across the different countries in which the survey was conducted it appears that Danes, together with the Swedes and the Finns, are the most frequent users of the Baltic Sea for recreational purposes. This goes for winter as well as summer although the frequency of visits are markedly higher during the summer half of the year than during the winter half. In terms of activities, the survey clearly shows that the most popular activity related to use of the Baltic Sea is walking along the coast/beach.

Respondents' answers to questions related to their perception of the environmental quality of the Baltic Sea reveal that Danes generally perceive the environmental quality to be significantly better in the Danish part of the Baltic Sea than in the Baltic Sea in general. The results also show that while about half of respondents state to be concerned about the environmental status of the Baltic Sea, it is only around 11 % that perceive the quality to be so bad that it restricts their possibilities for using the Baltic Sea for recreation purposes.

In terms of factors threatening the environmental quality of the Baltic Sea more than half of the respondents perceives algal blooms, lack of oxygen in sea bottoms, heavy metals and other hazardous substances, small everyday oil leakages, the possibility of major oil spills, overfishing and litter to be problematic. Coastal water quality, open sea water quality, water turbidity, unexploded mines and chemical weapons lying at the sea bottom, gas lines and off-shore wind turbines are generally considered less problematic.

While only around 35 % of Danes believes that they themselves can contribute to improving the environmental quality of the Baltic Sea, there seems to be a general consensus that initiatives need to be implemented by municipal wastewater treatment plants, farmers, professional fishermen, industry as well

as ports and the sea transport sector. For comparative purposes, it may be noted that weekly journal Monday Morning on Sep. 13th reports that Danes generally feel that they personally can play a role in relation to reducing CO_2 emissions, which are considered to represent an important environmental threat. Finally, in terms of financing initiatives aimed at improving the environmental quality of the Baltic Sea, 27 % of respondents state that they are willing to contribute financially, and increased charges on pollution emissions are shown to be the preferred way of funding initiatives; hence, around 80 % of respondents finds this source of funding to be acceptable.

G.2 Finland

Most Finns have enjoyed leisure time in the Baltic Sea. Based on the survey findings, nearly 85 % of the population has been to the Baltic Sea for recreational purposes, and over one half of these people have visited the sea within the last year. The most popular activities include activities on shore like sunbathing and walking along the coastline (over 90 %), going on a cruise (close to 70 %), and swimming and boating (both almost 50 %). While Finns visit the Baltic Sea more often in the summer than winter, they are not afraid to take advantage of ice cover if it exists. Ice-fishing, skiing and skating are enjoyed by around 10 % of the population similar to Russians and Swedes. Interestingly, in addition to spending leisure time in the Baltic Sea, about 8 % of the Finnish respondents stated that they have or have had an occupation that is somehow dependent on the Baltic Sea.

Based on the responses, Finns find the state of the Baltic Sea environment rather bad on average, in fact more so than people from other Baltic Sea countries. Further, most feel that the environmental state of the sea has deteriorated during the past ten years. Three out of four respondents worry over the state of the Baltic Sea, and also think that it is one of the three most important environmental problems in Finland. Most Finns do not, however, feel that they could themselves affect the sea environment. The state of the Baltic Sea does not seem to restrict people's current recreation opportunities; only one in ten respondents feel that the sea water quality has seriously restricted their recreation opportunities. As an interesting comparison, the Swedes consider water quality even less restricting factor for recreation, while over a quarter of the Russians think water quality to restrict water activities heavily. This is not too surprising as the Russians' access to the sea is only via the Gulf of Finland which has rather poor water quality.

From the Finnish point of view, the most important problems in the Baltic Sea include the possibility of a major oil spill, algal blooms, lack of oxygen in sea bottoms, and hazardous substances like heavy metals. On the other hand, Finns are less concerned about off-shore wind mills and over-fishing compared to other countries.

About 40 % of the Finnish respondents consider themselves already contributing to fund actions to improve the Baltic Sea environment, and nearly

a third is prepared to contribute financially more than they currently do for improvement actions. The most accepted ways to fund Baltic Sea environment improvement actions are increased charges on pollution emissions and action-earmarked payments paid by everyone.

G.3 Latvia

According to the survey, about 87 % of the adult population of Latvia have visited the Baltic Sea for recreational purposes at least once. About half of these people have visited the sea during the last year. A similar situation is observed in Estonia and Lithuania, while in Sweden and Denmark being at the Baltic Sea is slightly more popular.

Those Latvians, who visited the Baltic Sea during the last year, on average, spend about 14 days at the sea during the summer season, and only about 3 days in the winter time. The most popular activities of Latvians are being at the beach for walking, sunbathing, and swimming. Boating, windsurfing, diving, and fishing are much more rare.

The residents of Latvia evaluate the status of the Baltic Sea environment as average. They also have not noticed any particular improvement or deterioration in the marine environment during the last 10 years. Based on respondents' opinions, the most important problems of the Baltic Sea are litter, damage to marine flora and fauna, possibility of oil spill, heavy metals and other hazardous substances.

However, when it comes to actions aimed at improvement of the Baltic Sea environment, the residents of Latvia are very passive. Only 17 % of respondents feel that they can play a role in improving the marine environment, and slightly more than 20 % presently contribute financially to such actions. In contrast, in Sweden more than half of the population do so.

Out of all surveyed countries, Latvians together with Lithuanians were the most negative about increasing personal financial contributions to improve the Baltic Sea environment. The only type of contributions that turned out to be acceptable for a majority of the Latvian population is increasing charges on pollution emissions.

G.4 Lithuania

Although similarly to the respondents in other countries 90 % of Lithuanian respondents have been to the Baltic Sea at least once to spend their leisure time and 45 % of them did that in the last 12 months, the average number of days spent at the sea is the smallest around the countries. This is just nine days in the warm season, and less than two in the cold one. The most popular activities when staying at the sea side are swimming and being at the seashore for walking, picnicking, sunbathing and visiting touristic or cultural sites.

Least fraction of respondents in Lithuania, in comparison to other countries, stated that their occupations were somehow related to the sea.

Lithuanians think that water quality both at Lithuanian shore and the Baltic Sea in general are neither bad nor good – similarly to what was the opinion of respondents in other countries. A majority of Lithuanians agree that the quality does not restrict their recreation opportunities, and the same was true for respondents in all other countries.

The respondents evaluated their worry about the Baltic Sea by a mean value of 3.3 (when 3 stands for neither bad nor good) for a 1–5 scale. A majority of Lithuanian respondents think that the Baltic Sea environment is slightly poorer than it was 10 years ago.

The threats that Lithuanian respondents indicate as more important than others are related to a possibility of a major oil spill, small everyday oil leakages, litter, damages to flora and fauna in the sea, unexploded mines and chemical weapons lying at the sea bottom. Following that, majority agreed that somewhat more action should be taken by wastewater treatment plants, industry, fishermen and sea transports and ports though. Still, Lithuanians seemed to have less strong opinion about who should take an action compared to the respondents from other countries.

It could be that the respondents in Lithuania do not sufficiently understand the connection between their lifestyles (e.g. agriculture) and quality of the Baltic Sea. This might also partially contribute to the findings that Lithuanians less than respondents in other countries think they affect the Baltic Sea environment and do not agree with the idea that they can play a role in improving it. The latter is consistent with the findings that Lithuanian respondents are not prepared to contribute financially more than they do now (although according to them they hardly contribute financially for funding actions even now) and that they do not think any payment mechanism, where money has to be paid directly by people, is acceptable. Increased charges on pollution emissions were the only payment mode that a majority of respondents found to be acceptable.

In general, when the question comes to the responsibility for taking actions, Lithuanians usually stay in the group of countries, where the feeling of responsibility is at the lowest level.

To conclude, Lithuanians are quite similar to the respondents from other countries in terms of how they use the sea and what problems related to its quality they think are important. When the responsibility of taking actions is concerned, Lithuanians stay somewhat behind others. They do not think they are contributing to environmental problems in the Baltic Sea and do not feel responsible for taking any action. They would not accept increased taxes or any similar payment vehicle for which they would have to contribute directly.

G.5 Poland

Is the Baltic Sea visited by the Poles? As much as 90 % of Poles have ever visited the Baltic Sea. 31 % claims to have visited the Baltic Sea in the last 12 months, while additional 58 % have visited the Baltic Sea in the last 5 years. This illustrates, that even though a large part of the territory of Poland is relatively far from the sea, Poles enjoy visiting it for recreation and do so quite often.

When is the Baltic Sea visited most often? If we distinguish between summer (April–September) and winter (October–March) periods, it is clearly visible that of the Poles who visited the Baltic Sea last year most of them did so 1–3 times, and most often in the summer. In winter, 1 trip was the most often. Not surprisingly, the Baltic Sea is visited most often in July and August (almost equally about 29 % of all the visits). Other popular months for visiting the Baltic Sea are May, June and September. In the other months the sea is much less often visited.

What do Poles do at the seaside? By far the most frequent activity at the seaside is walking and sunbathing at beaches (98 %) – it seems almost every visit to the seaside involves being at a beach for some sort of recreation. In addition, Poles often go swimming – in over half of the trips (54 %) people go swimming. Other popular activities include going on a sea cruise (43 %), sailing, boating or kayaking (22 %) and, to lesser extent, fishing (6 %). Only a small part of all the visits (2 %) is related to watersports, such as windsurfing, waterskiing and so on.

How do Poles perceive the Baltic Sea in general? Irrespective of whether they visit the seaside or not, respondents were asked a series of attitude questions, to see how their perception differs from the perception of respondents from the other Baltic Sea countries. The main findings of this exercise are:

- Poles perceive the quality of the Baltic Sea, and the Polish part of it, slightly better than respondents of most other countries. In particular, Polish respondents tend more to believe that the Baltic Sea environment has improved in the last 10 years than respondents in the other countries.
- At the same time, Poles are much more convinced, that the quality of the Baltic Sea water restricts their recreation opportunities at present, than respondents from all other countries except the coastal regions of Russia.
- The most significant environmental problems of the Baltic Sea are thought to be (in descending order): heavy metals and other hazardous substances, everyday small oil leakages, litter, overfishing and damage to flora and fauna in the sea. To a lesser extent Poles are worried about gas pipelines at the sea bottom, water quality, water turbidity, offshore wind turbines and unexploded mines and chemical weapons in the sea. The least serious problems were thought to be the possibility of a major oil spill, lack of oxygen at sea bottoms and finally algal

blooms. Interestingly, open sea water quality is considered a more serious environmental problem than the coastal water quality. Table G.1 below presents a comparison of Polish respondents' attitudes with the attitudes of respondents from the other Baltic Sea countries. The index presented in the table is based on the 1–5 scale of Q23, where 1 stands for "not at all a problem in the Baltic Sea" and 5 stands for "a very big problem in the Baltic Sea".

Table G.1. Comparison of attitudes about environmental problems of the Baltic Sea.

Issue	Seriousness index – Poland	Seriousness index – other Baltic Sea countries
Heavy metals and other hazardous substances	4.32	4.01
Small everyday oil leakages	4.09	3.93
Litter	4.08	4.05
Overfishing	4.03	3.54
Damage to fauna and flora in the sea	4.00	3.96
Gas pipelines lying at the sea bottom	3.76	3.30
Water turbidity	3.68	3.43
Open sea water quality	3.63	3.43
Offshore wind turbines	3.62	2.44
Unexploded mines and chemical weapons lying at the sea bottom	3.53	3.73
Coastal water quality	3.48	3.57
Possibility of major oil spill	3.43	4.14
Lack of oxygen at sea bottoms	3.26	3.70
Algal blooms	2.86	3.69

- The most serious differences seem to be the Poles are more concerned than the citizens of other countries with offshore wind turbines, overfishing, and gas pipelines. On the contrary, they are much less concerned about algal blooms and the possibility of a major oil spill. The seriousness of other problems is similar.
- Poles are more inclined to believe, that they personally affect the quality of the Baltic Sea. In addition they are, in comparison with respondents from the other countries, more often agreeing with the statement claiming that each individual can play a role in improving the Baltic Sea environment and are prepared to contribute more, for funding actions aiming at improving the environment of the Baltic Sea. Together with Swedes, they also tend to agree relatively strongly with the statement that they already contribute financially for funding actions.

G.6 Russia

For the comparison with other Baltic Sea countries we consider only those Russian regions close to the Baltic Sea, the results for the rest of Russia can be found in Appendix C. Respondents from Russia tend to answer similarly to the respondents from other countries in many cases, however there are some questions to which their answers tend to be different.

Russia is the only country where less than 50 % of the population of the coastal regions has been at the sea to spend leisure time there. In all other countries this figure is higher than 80 %. The distribution of the respondents by the period of their last visit to the sea is biased towards the past, as compared to the other countries: only 25 % of the respondents that have visited the sea at least once had their last visit within 12 months prior to the interview (a minimum over all the countries), and around 40 % had their last visit more than 5 years prior to the interview (a maximum over all the countries).

Swimming and being at the beach or seashore for walking, sunbathing etc. are the most common activities at the sea in Russia just as it is in other countries, however nearly half of the respondents in Russia do not swim when they visit the sea (in all other countries, except for Finland and Denmark, this number is smaller).

In Russia people are more worried about the Baltic Sea environment and there we see the strongest tendency over all the Baltic countries to agree that the Baltic Sea environment is poorer today than 10 years ago. More than one third of the respondents "totally agree" or "agree rather than disagree" that the Baltic Sea water quality restricts their recreation opportunities, which is the highest share over all the countries.

For the most part of the issues mentioned in Q23 the majority of the respondents in Russia "totally agree" that each particular issue is "a very big problem" for the Baltic Sea. And for all the issues the share of those who "totally agree" that the issue is a "very big problem" is in Russia the highest compared to the other countries, while the share of those who mentioned other big problems in the sea is the lowest in Russia.

Russia is among the countries where respondents do not think that they themselves could do much to improve the marine environment. However the share of the respondents thinking that it is "very necessary" that each of the other actors mentioned in Q25 take actions for improving the Baltic Sea environment, is not only overwhelming in Russia (exceeding 50%), but is also the highest over all countries.

G.7 Sweden

The results presented in this report allow a description of what relation an average BalticSurvey respondent in Sweden tends to have to the Baltic Sea. An "average Swede" is often referred to as the common surname of Svensson, so this is done here as well.

Svensson is a person who has spent leisure time at the sea in the last year and Svensson does so in particular in the period of April–September. This period consists of 180 days, and based on average values, Svensson spends some leisure time at the sea at about 35 of these 180 days, mostly for being at the beach or seashore for walking, picnicking, sunbathing, etc. or for swimming. Svensson visits the sea considerably more seldom in the period of October–March, at about 17 of 180 days.

In Svensson's opinion, the status of the marine environment is neither bad nor good, but Svensson is still worried about the marine environment and views marine environmental problems as one of the three most important environmental problems in Sweden. Svensson also tends to think that the marine environment has deteriorated during the last 10 years. However, Svensson does not feel that the sea water quality restricts his/her recreation opportunities. Svensson definitely regards algal blooms, lack of oxygen in sea bottoms, heavy metals and other hazardous substances, small everyday oil leakages, the possibility of major oil spill, overfishing, litter and damage to flora and fauna in the sea as big problems in the sea, but he/she does not feel that offshore wind turbines constitute a problem.

While Svensson thinks that he/she can play a role in improving the marine environment and that he/she currently makes financial contributions for funding actions, Svensson is not very willing to make additional financial contributions. If it becomes necessary to pay anything, Svensson would regard the payment mode of earmarked payments paid by everyone (so far seldom used in practice) as more acceptable than increased taxes or increased water bills. However, Svensson finds it totally acceptable that charges on pollution emissions are increased and in his/her opinion, it is very necessary that actions are taken by wastewater treatment plants, industry and sea transports and ports. Finally, Svensson thinks it is rather necessary that farmers and professional fishermen take action for improving the Baltic Sea environment.

BalticSurvey –
a study in the Baltic Sea
countries of public attitudes
and use of the sea

Report on basic findings

The report contains the basic results of BalticSurvey, a unique opinion poll conducted in all nine countries around the Baltic Sea. It has identified how people around the Baltic Sea and parts of Skagerrak use the sea and what attitudes they have towards the marine environment and towards various measures for improving the environment. It includes about 9,000 interviews carried out in April-June 2010. BalticSurvey is a subproject within the BalticSTERN research network.

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