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SurBACC 2010

A survey of the perspectives of climate scientists concerning climate change and climate science in the Baltic Sea basin

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International BALTEX Secretariat

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Foreword

An assessment report about the then available scientific knowledge of climate change and its impacts in the Baltic Sea basin (hydrologically defined as the catchment basin draining into the Baltic Sea) was published as a Springer book in January 2008 (BACC Author Team, 2008). The assessment is an example for a type of reports helping to put global climate change (as portrayed e.g. by the IPCC reports) into a regional perspective which local stakeholders and politicians can relate to. The so called BACC (BALTEX Assessment of Climate Change for the Baltic Sea Basin) report was compiled by a consortium of 84 scientists from 13 countries around the Baltic Sea and covers various disciplines related to climate research and ecological impacts. The book is divided in chapters on past and current climate change, on projected future anthropogenic climate change, and on observed and projected impacts on terrestrial and marine ecosystems of the Baltic Sea basin. It aims to bring together consolidated (published) knowledge which has broad consensus in the scientific community. Efforts were made to minimize the inclusion of claims by vested interests and authors' personal opinions. The way how this was attempted was by installing an author team rather than one guru writing the assessment, and secondly, to strictly keep to the rule not to ignore scientifically legitimate findings which are not mainstream.

The publication of the BACC report was taken as point of departure for a detailed survey on how climate scientists in the Baltic Sea region perceive the state of their own science, both on the global and on the regional scale. This kind of survey has been done with the global climate research community earlier (see page 78). The main difference of this survey to earlier similar surveys is the regional target group: climate scientists and scientists working in climate relevant research fields in the Baltic Sea basin. For this survey, the BALTEX community was used, and the reception of the BACC report was of particular interest in this report.

This survey was done in February and March 2010 after the so-called "climategate" incident, which had an impact on the global climate science community and its public perception. Whether the somewhat more critical perception on various aspects of climate research by the regional researchers is related to post-climategate irritation or just to a more self-critical attitude of Northern European researchers, cannot be determined at this time.

The survey showed that the vast majority of regional climate researchers in the Baltic Sea region consider the BACC report a worthwhile effort to be done. As climate science is a rapidly advancing research field, a new BACC report is currently in preparation and is expected to be available as a book in 2014.

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Abstract

The survey is an assessment of the perceptions of Baltic Sea region climate scientists. It was conducted with two goals in mind: the first, Baltic Sea region climate scientists' perceptions of the climate change issues in general, the second an assessment of the levels of satisfaction with the BACC Report 'Assessment of Climate Change for the Baltic Sea Basin' (BACC Author Team, 2008). On the issue of climate change in general, it is clear that a majority of the survey participants agree that climate change, be it of anthropogenic causes or otherwise, is occurring now. There is not so much certainty though as to attribution, i.e. natural versus anthropogenic causes. Many details were asked concerning aspects of climate modelling and responses are widely varied, both for climate models and for ocean models. The understanding of physical processes and the availability of data were assessed and, as would be expected in the course of any science, there is a reasonable level of agreement among the respondents that there is considerable room for improvement. There were mixed responses concerning the level of threat from both climate and sea level rise in the Baltic region, with climate change seen as a slightly higher threat, and no catastrophic scenarios were foreseen for the next 10 years at least.

The second section of the survey was for the purpose of the assessment of a comprehensive report on the state of climate change science as it pertains to the Baltic Region. Here, the level of satisfaction with production and content of the report are quite favourable with claims that the report is significant for the advancement of climate change assessments for the Baltic region but somewhat less significant for the advancements of regional sea level assessments. On nearly all accounts, the estimates of change (changes to surface air temperature, changes in extreme events, etc.) are claimed to be reflected fairly well in the report. A large majority of respondents concluded that a second BACC Report would be a worthy and significant contribution some time in the future.

Rationale for the survey

Scientific agreement (or consensus) is not usually as simple a single yes-no response. Surveys such as SurBACC 2010 attempt to look at the details of agreement and disagreement of scientists' perceptions, the details of agreement on the strengths and weaknesses in the science, of scientific needs, of scientific problem issues and of knowledge gaps in the science. As such, there is potential to provide insights for decision makers, funding allocation and even for the practice of scientists themselves.

Of course, it is not easy to design a perfect set of questions, and hindsight is a wonderful thing. For the most part, however, the questions employed in this survey have been tried, tested and improved over a number of years with a number of surveys (see p. 78) and have resulted in a number of peer reviewed publications. The questions are designed in an attempt to make them meaningful to the *entire* sample of scientists employed in the survey and as such might, at times, appear somewhat naive to within specialist debates. For example, questions concerning models need to be understandable by the users of the models, and the users might encompass scientists working on impact through to model developers.

Given the limitations of a single survey of a number of science specialties and a range of disciplinary interests, the survey attempted to address two research interests. The first interest was the perceptions of Baltic climate science related scientists concerning the issue of climate change. The second goal of the survey was to assess the acceptance of the BACC Report (Assessment of Climate Change for the Baltic Sea basin), which 'was created to assemble, integrate and assess available knowledge of past, current, and expected future climate change and its impacts on ecosystems in the Baltic Sea basin.' (BACC Author Team, 2008).

The survey sample

The survey sample consisted of the BALTEX mailing list, not a probability sample of *all* scientists focusing on the Baltic Sea Basin. The survey was conducted using e-mail invitations containing a brief explanation and a web link to the survey. The e-mail invitation was first distributed on 5 February 2010, and a reminder was distributed on 26 February 2010. The survey was closed on 31 March 2010.

In all, 706 valid e-mail addresses were sent to potential respondents. Six respondents replied that he or she felt unqualified to answer the survey (i.e. did not work in science). Consequently, the number of potential respondents receiving the invitation to participate in the survey was 700. The total number of responses was 134, a response rate of approximately 19%.

Concerning the response rate of 19%, Hamilton (web site accessed 12.02.2010) produced a white paper that analyzed 199 surveys. The total response rate of these surveys, calculated using the total number of surveys sent out and the total number of responses was 13.35%. He also noted that large invitations lists, i.e. >1000, tend to be associated with lower individual response rates.

However, Viser et al. (1996) showed that surveys with lower response rates (near 20%) tended to produce more accurate results than surveys with higher response rates, although, it is doubtful that this could be generalized to all surveys. In as much, Holbrook et al. (2007) concluded that a low response rate does not necessarily equate to a lower level of accuracy but simply indicates a risk of lower accuracy.

Harris Interactive, a well established organization specializing in web-based surveys, used a convenience sample of 70,932 California residents in a survey of attitudes towards healthcare. As with the survey of scientists (Bray and von Storch 2010) an e-mail was sent to potential respondents with a link to a web survey, and non-respondents received one reminder e-mail. The response rate for the Harris Interactive survey was 2% (Schonlau et al. 2002)

Consequently the sampling method and the response for the surveys of climate scientists do not appear distinct from other such undertakings.

Summary of results

The complete results are presented in Appendix A.

As distinguished by nationality, the two largest groups of participants came from Sweden (25%) and Germany (23%). Approximately 10% of the sample reported coming from 'other, non-Baltic' countries. As for the nature of the work undertaken by the respondents, 28.4% were involved with 'past and present climate change' 23.9% with 'projections of future anthropogenic climate change', 6% with 'sea level change', 17.9% with 'climate related marine ecosystem change', 11.9% with 'climate related change in terrestrial and/or freshwater ecosystems' (categories reflect the chapter structure in the BACC report), and 23.9% reported 'other' than the categories outlined in the BACC report.

The survey began with some simple questions about the perspective of climate change in general. Response options to questions were given as a range with 1 being 'no agreement at all' and 7 being 'agree very much'. Approximately 58% of the respondents agree 'very much' that climate change, be it caused by anthropogenic causes or natural variability, is indeed occurring now[1]. Some 19% agreed very much that climate change is, or will be, the result of anthropogenic causes[2]. Approximately 1% and 3%, respectively, expressed the opinion that climate change is not happening and should it happen, it will not be the result of anthropogenic causes. As to whether climate change poses a serious threat on global proportions, approximately 25% said 'very much' and 2% said 'not at all'[3]. The means for 'climate change occurring', (mean = 6.23 - on a 7 point scale) and 'climate change a result of anthropogenic causes' (mean = 4.73), seems to suggest that the majority of scientists in the survey would agree that climate change is occurring but there is much less confidence that it is the results of human behaviours. Whatever the perception of attribution, some 58% consider climate change to be a significant threat. However, when asked 'How much do you agree that climate science has remained objective science and uninfluenced by personal values or politics' only 4% answered 'very much' and with a mean value of 4, it seems that

[1] A broader global sample of climate scientists were surveyed in 2008 (CliSci 2008; Bray and von Storch 2010). In this survey, from 375 responses from 35 countries, 67% of the climate scientists who responded were 'very much' convinced that climate change, whether natural or anthropogenic, is occurring now. The number of BALTEX involved scientists appears to be slightly less than the responses from a larger global climate science community.

[2] Concerning attribution, 34.5% of a global sample of climate scientists in the CliSci 2008 survey was 'very much' convinced that most of recent and near future climate change is, or will be, a result of anthropogenic causes, a stark contrast to the 19% of the BALTEX sample.

[3] 34.6% of a global sample of scientists in the CliSci 2008 survey reported that climate change 'very much' poses a serious and dangerous threat to humanity, some 10% more than the reported by the BALTEX sample.

among the BALTEX scientists there is some concern about the infusion of values into science[4].

The perception of global climate models

SurBACC also attempted to assess the perceptions of Baltic climate scientists pertaining to the state of climate science in general. Abilities of global climate models were assessed according to the ability to deal with hydrodynamics, radiation, atmospheric vapour, clouds, precipitation, atmospheric convection and greenhouse gases. These results are presented in Figure 1.

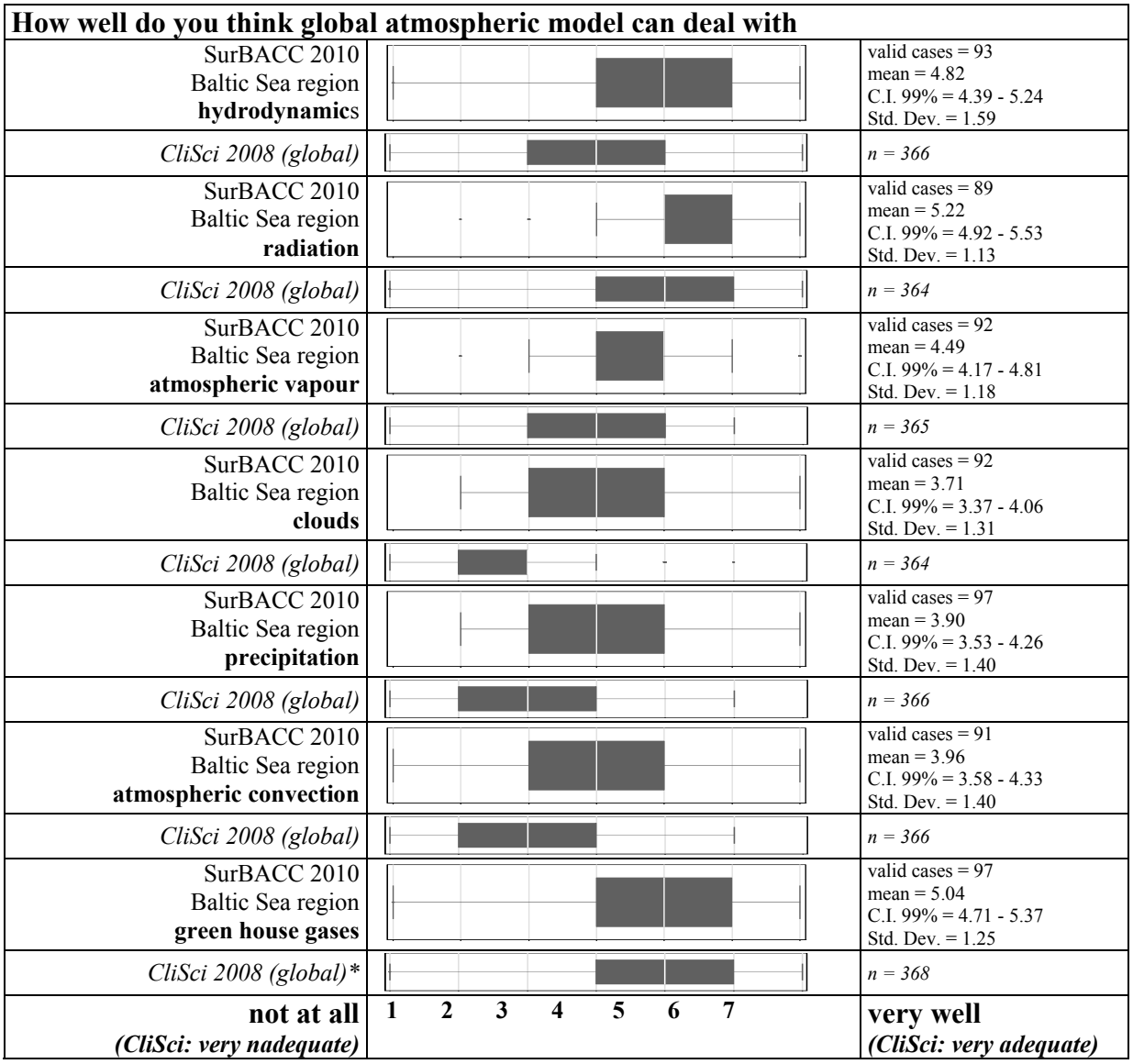


Figure 1. Global Atmospheric Models: State of climate science. * In the CliSci 2008 survey, scientists were asked to agree or disagree with the statement: "The current state of scientific knowledge is developed well enough to allow for a reasonable assessment of the effects of green house gases emitted from anthropogenic sources. 1= strongly disagree, 7 = strongly agree.

[4] This appears to be somewhat consistent with the sample of the larger global climate science community: In CliSci 2008, 2.6% of respondents reported 'not at all' as the response to being asked 'How much do you think the direction of research in the climate change sciences has been influenced by external politics in the last 10 years?' (mean 2.98: 1= very much; 7 = not at all). In response to a separate question 'To what degree do you think climate science has remained a value neutral science?', 4.3% responded 'a great deal' and 5.2% responded 'not at all' The mean of the responses we 3.96, very similar to the response from the BALTEX sample.

In all cases of assessing the abilities of global climate models, the scientists of the BALTEX community show somewhat more faith in the abilities of global models, with the exception of green house gases, which is the same in both cases. However, given that the global survey was conducted in 2008 and the BALTEX survey in 2010, the differences indicated in Figure 1 might simply reflect a perceived improvement of the abilities of global models over time. Figure 2 asks for the performance of global ocean models.

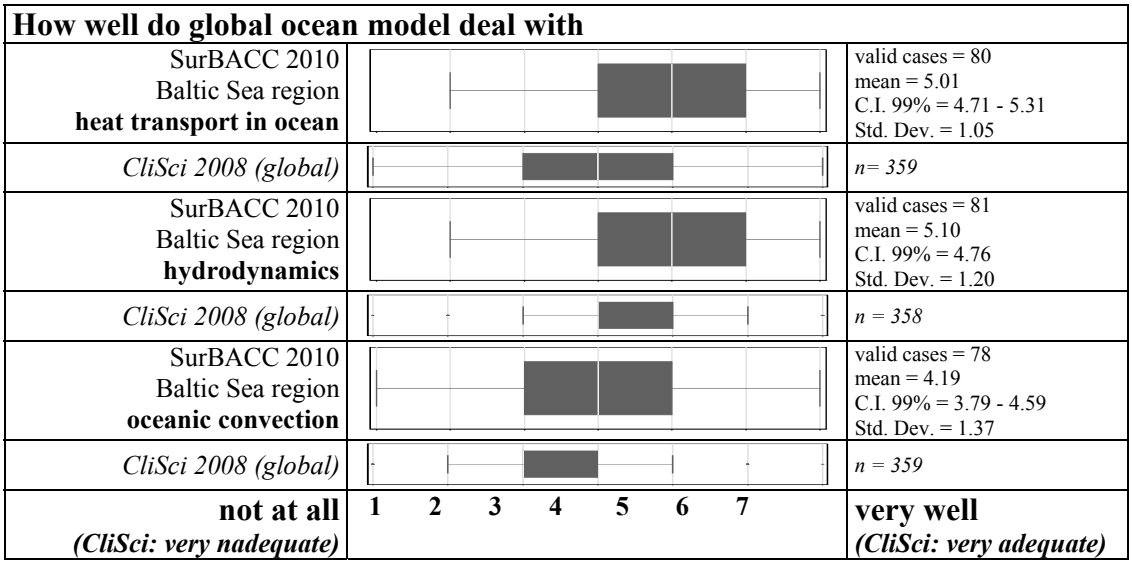


Figure 2. Global Ocean Models: State of climate science

Similar patterns of perceptions seem to persist when assessing ocean models; that is, the Baltic region sample of scientists tend to express more faith in the models than does the global sample of scientists.

The perception of regional climate models

The respondents were then asked how well they felt the science could address change at a regional level. These results are presented in Figure 3.

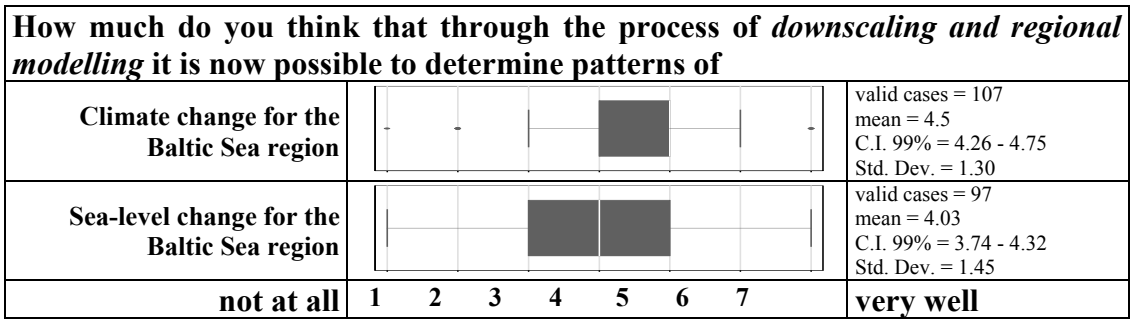


Figure 3. Regional climate modelling

As Figure 3 demonstrates, the responses from the BALTEX scientific community suggest that there is slightly more faith in determining patterns of climate change than there is in patterns of sea-level change for the Baltic region. More details of concerning theoretical understanding and data availability for regional climate change and sea level assessments are given in the Appendix.

The perception of climate change impacts

While the perceived state of the science is of some importance to decision makers, the scientific perceptions of how change might translate into impacts is of more significance to this group. To this end, the BALTEX climate scientists were asked explicitly about the threat of climate and sea-level change. These results are presented in Figures 4 to 6.

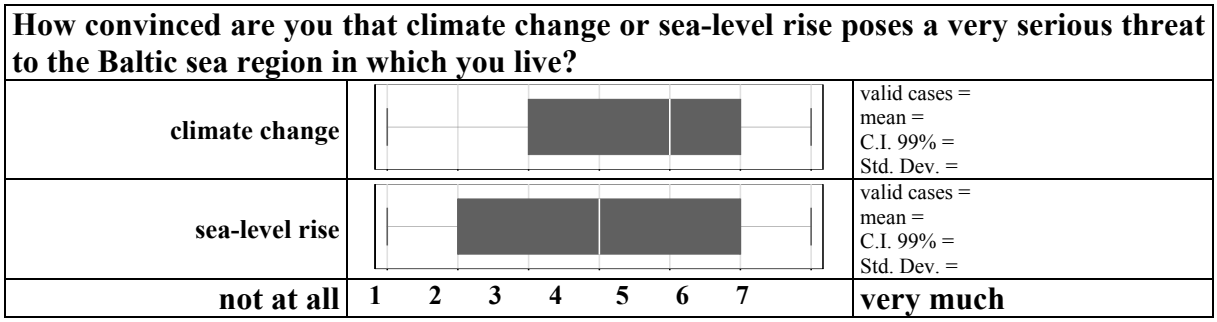


Figure 4. The potential threat: Climate change

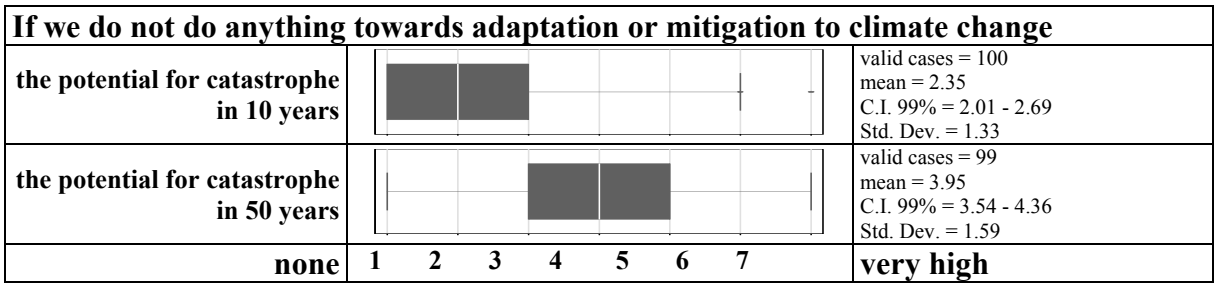


Figure 5. The potential for catastrophe: Climate change

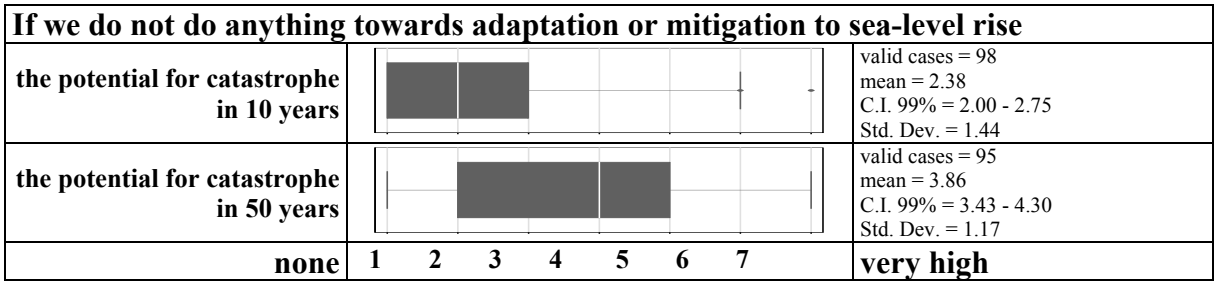


Figure 6. The potential for catastrophe: Sea level rise

While scientists perceived the threat level to be of some significance, it appears the threat could not be so easily translated as potential for catastrophe in the near future. The scientists foresaw very little chance of catastrophe within the next ten years and only a marginal potential for catastrophe resulting from climate change and/or sea level rise in the next 50 years.

The perception of the BACC report

The second section of the survey was designed to assess Baltic scientists' satisfaction with the BACC report. 78 of 105 respondents claimed to be aware of the BACC report. Of those 78 scientists, 26 were contributing authors and an additional 21 claimed they were consulted for input (but were not authors). Respondents were reasonably satisfied with the process of the selection of authors for the BACC report and less satisfied concerning the representation of

differing areas of expertise, with some claims that the BACC report tended to favour certain areas of expertise.

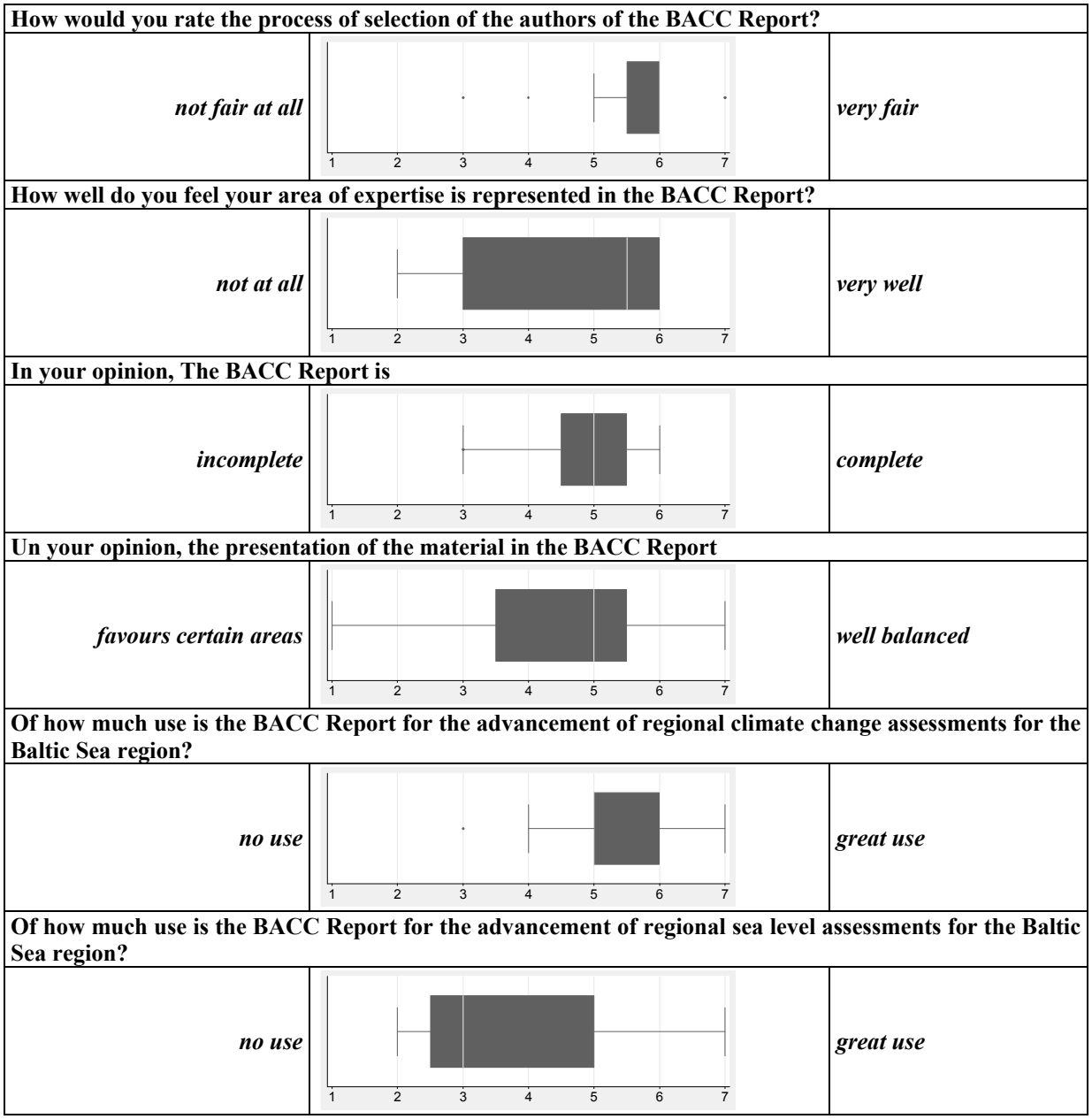


Figure 7. Satisfaction with BACC report

Nonetheless, there was a considerable level of agreement that the BACC report was of use for the advancement of regional climate change and sea level assessments. A majority of respondents claimed not to know if the BACC report accurately reflected a number of sub-specialties of climate change related issues. This of course could be expected as scientists are not experts in all scientific areas. Of those claiming knowledge of scientific specialties, in most cases there was a reasonable level of agreement that this or that sub-specialty was accurately reflected. One exception concerned future changes to marine ecosystems which felt the BACC report tended to somewhat underestimate projections of future changes. In summary, a large majority of the respondents felt that the BACC report was a significant contribution to the Baltic climate science community and thought the authoring of a second report would be a good idea. Overall indicators of satisfaction are shown in Figure 7. Detailed measures of satisfaction are presented in Appendix A.

Appendix A. Full descriptive results

Definitions

With the exception of the two demographic variables in section one that consist of pie-charts, all results are presented as:

Histograms: Histograms include the respondents who answered the question as 'don't know'. The histograms are presented as percentage of respondents.

Box plots: Box plots were chosen as a mode of presentations as they illustrate the median, spread and data values, providing a visual assessment of the degree of consensus. Lowest and highest values are indicated by 'whiskers' extending from the boxes. The boxes contain the 50% of total values falling between the 25^{th} and 75^{th} percentile, meaning that 50% of the cases have values within the box, 25% have values larger than the upper boundary and 25% have values less than the lower boundary. The length of the box indicates how much spread there is in the data values within the middle 50 percentile. If, for example, one box is much longer than another then the data values in the longer box have more variability. The length of the box is considered to suggest scientific consensus and the location of the box to represent scientific assessment. The median is in the middle of the box only if the distribution is symmetric. If the median line is closer to the left of the box than to the right of the box the data are skewed in that direction, meaning that there are more cases towards that end of the distribution. If the median is closer to the right of the box then tail of the distribution is towards those values.

Descriptive statistics: Number of statistical valid cases, mean values, standard deviations and other statistical information.

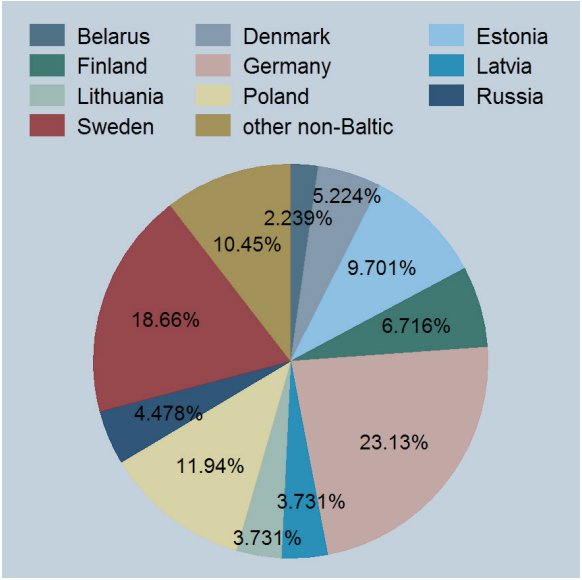
Section 1. Assessment of Baltic climate scientist´s perceptions on the general state of climate science

Section 1. a Demographics

Question 1. The institute in which you work is located in which country?

Country	Number	Percent
Belarus	3	2.2 %
Denmark	7	5.2 %
Estonia	13	9.7 %
Finland	9	6.7 %
Germany	31	23.1 %
Latvia	5	3.7 %
Lithuania	5	3.7 %
Poland	16	11.9 %
Russia	6	4.5 %
Sweden	25	18.7 %
other non-Baltic	14	10.4 %
Total	134	100.0 %

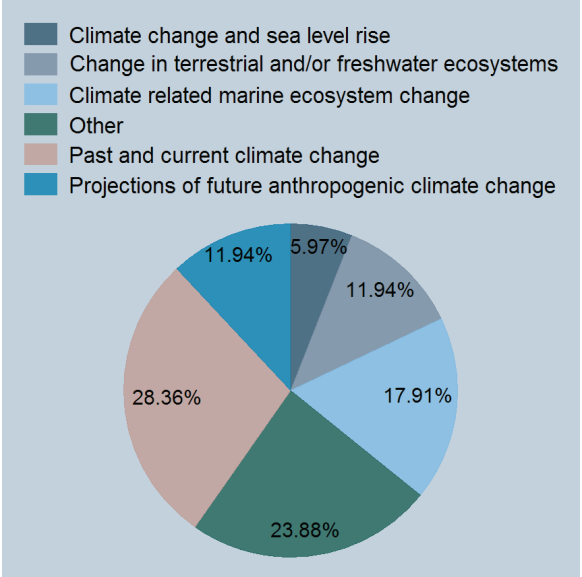
Missing Cases = 3
Response Percent = 97.8 %



Question 2. We would like to know which academic area best describes your work. The following headings are taken from the BACC 'Assessment of Climate Change for the Baltic Sea Basin' Report. Which of these headings best describes what you do?

	Number	Percent
Past and current climate change	38	28.4 %
Projections of future anthropogenic climate change	16	11.9 %
Climate related change in terrestrial and/or freshwater ecosystems	16	11.9 %
Climate related marine ecosystem change	24	17.9 %
Climate change and sea level rise	8	6.0 %
Other	32	23.9 %
Total	134	100.0 %

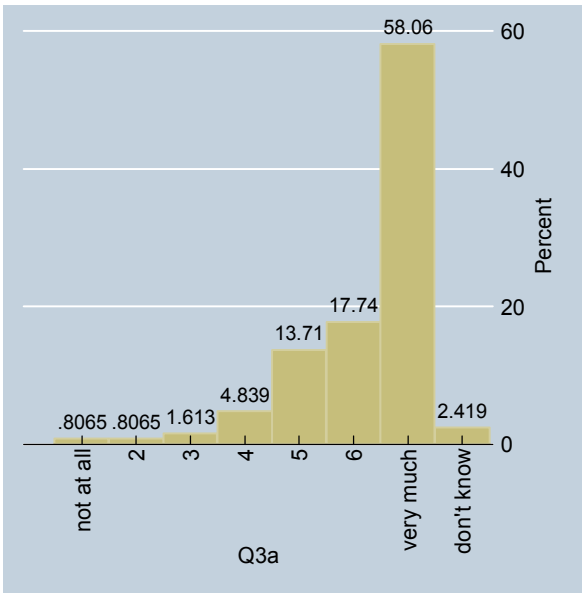
Missing Cases = 3
Response Percent = 97.8 %



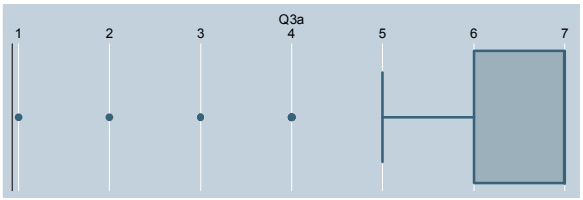
Section 1. b General aspects of the climate change issue

3a. How much do you agree that climate change, whether natural or anthropogenic, is occurring now?

Valid Cases = 124 Missing Cases = 13
Response Percent = 90.5%

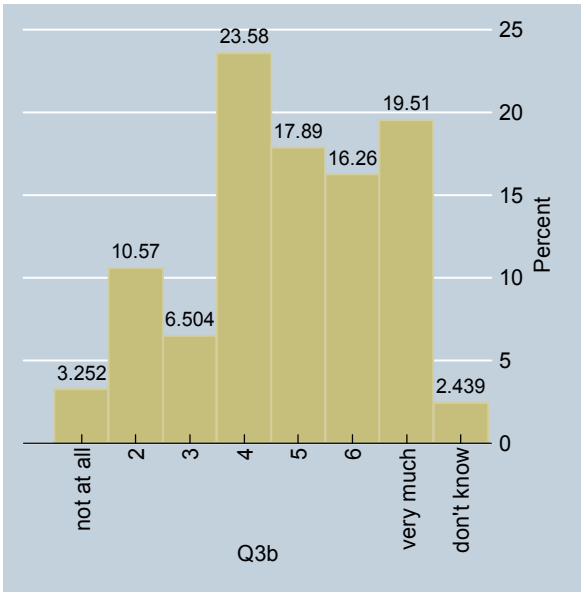


Valid Cases = 121
Minimum = 1
Maximum = 7
Mean = 6.23
Median = 7
Variance (Unbiased) = 1.38
Standard Deviation (Unbiased) = 1.17
Standard Error Of The Mean = 0.11
95 Percent Confidence Interval Around The Mean = 6.02 - 6.44
99 Percent Confidence Interval Around The Mean = 5.96 - 6.51

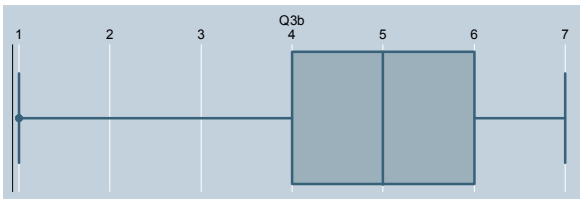


3b. How much do you agree that most of recent or near future climate change is, or will be, the result of anthropogenic causes?

Valid Cases = 123 Missing Cases = 14
Response Percent = 89.8%

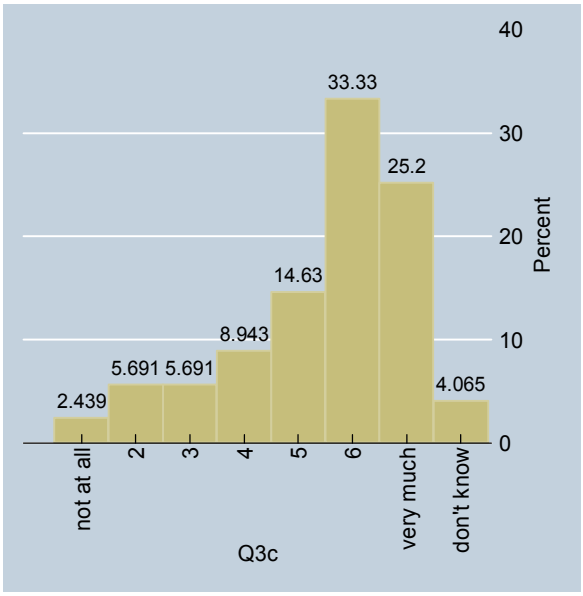


Valid Cases = 120
Minimum = 1
Maximum = 7
Mean = 4.73
Median = 5
Variance (Unbiased) = 2.94
Standard Deviation (Unbiased) = 1.71
Standard Error Of The Mean = 0.16
95 Percent Confidence Interval Around The Mean = 4.43 - 5.04
99 Percent Confidence Interval Around The Mean = 4.33 - 5.14

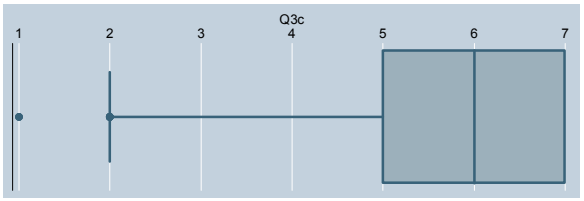


3c. How much do you agree that climate change poses a very serious threat on global proportions?

Valid Cases = 123 Missing Cases = 14
Response Percent = 89.8%

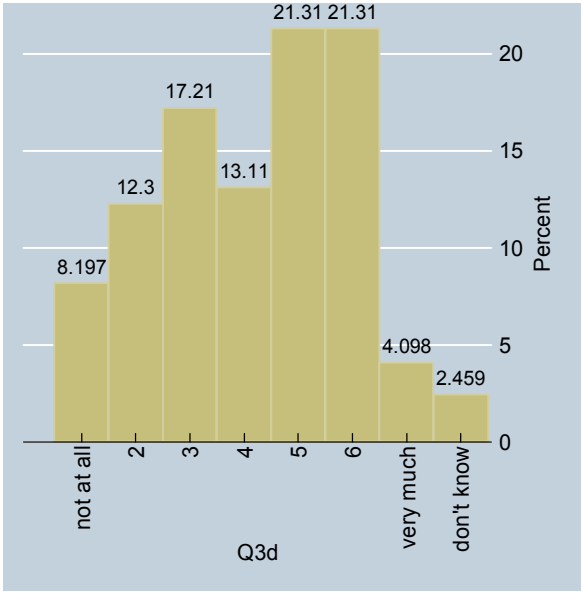


Valid Cases = 118
Minimum = 1
Maximum = 7
Mean = 5.38
Median = 6
Variance (Unbiased) = 2.55
Standard Deviation (Unbiased) = 1.60
Standard Error Of The Mean = 0.15
95 Percent Confidence Interval Around The Mean = 5.09 - 5.67
99 Percent Confidence Interval Around The Mean = 5.00 - 5.76

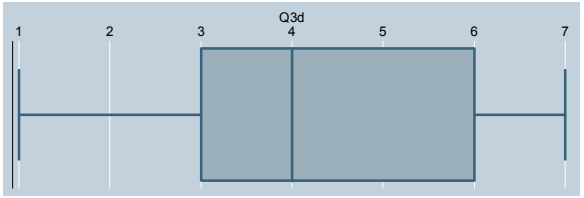


3d. How much do you agree that climate science has remained objective science and uninfluenced by personal values or politics?

Valid Cases = 122 Missing Cases = 15
Response Percent = 89.1%



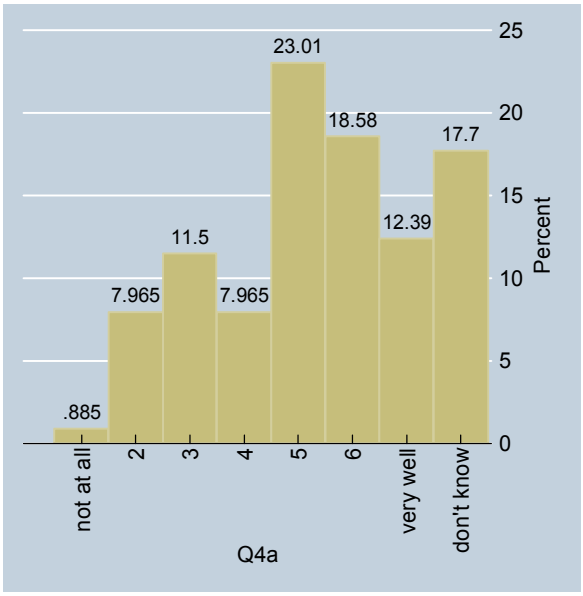
Valid Cases = 119
Minimum = 1
Maximum = 7
Mean = 4.10
Median = 4
Variance (Unbiased) = 2.92
Standard Deviation (Unbiased) = 1.71
Standard Error Of The Mean = 0.16
95 Percent Confidence Interval Around The Mean = 3.79 - 4.41
99 Percent Confidence Interval Around The Mean = 3.70 - 4.50



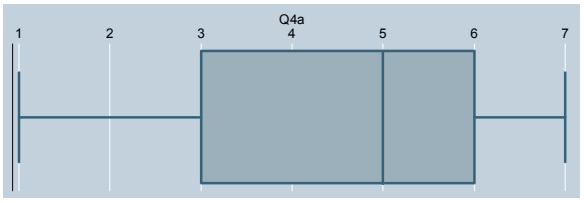
Section 1. c The abilities of models

4a. When talking about *GLOBAL CLIMATE MODELS*, how well do *you* think *ATMOSPHERIC* models can deal with hydrodynamics?

Valid Cases = 113 Missing Cases = 24
Response Percent = 82.5%

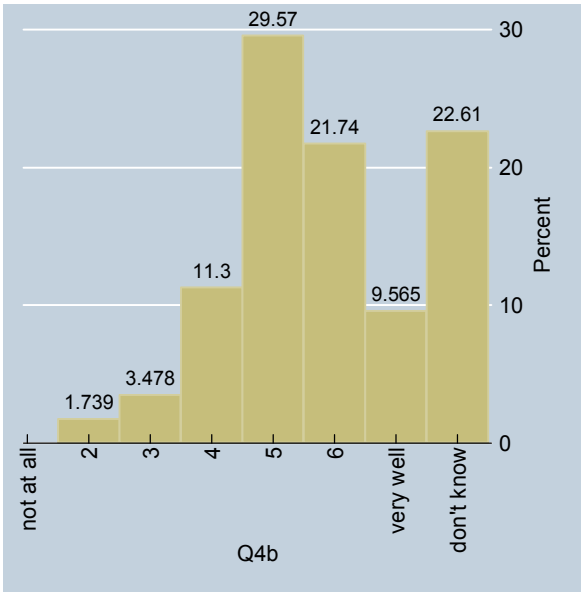


Valid Cases = 93
Minimum = 1
Maximum = 7
Mean = 4.82
Median = 5
Variance (Unbiased) = 2.52
Standard Deviation (Unbiased) = 1.59
Standard Error Of The Mean = 0.16
95 Percent Confidence Interval Around The Mean = 4.49 - 5.14
99 Percent Confidence Interval Around The Mean = 4.39 - 5.24

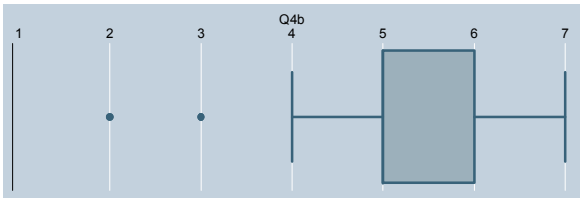


4b. When talking about *GLOBAL CLIMATE MODELS*, how well do *you* think *ATMOSPHERIC* models can deal with radiation?

Valid Cases = 115 Missing Cases = 22
Response Percent = 83.9%

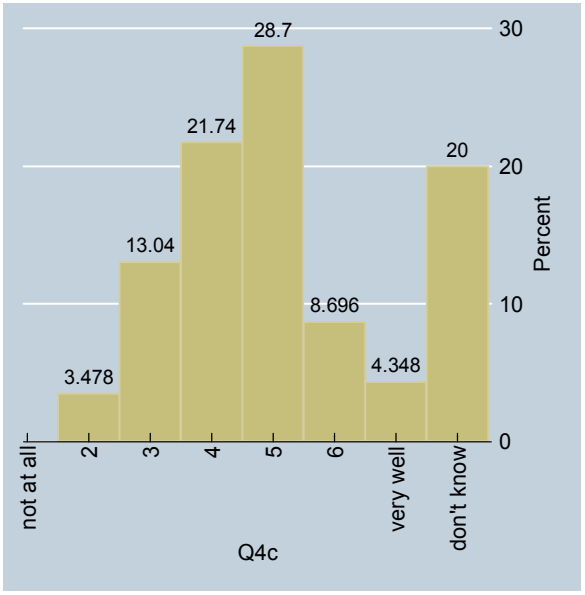


Valid Cases = 89
Minimum = 2
Maximum = 7
Mean = 5.22
Median = 5
Variance (Unbiased) = 1.27
Standard Deviation (Unbiased) = 1.13
Standard Error Of The Mean = 0.12
95 Percent Confidence Interval Around The Mean = 4.99 - 5.46
99 Percent Confidence Interval Around The Mean = 4.92 - 5.53

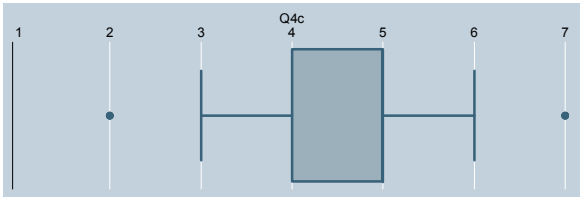


4c. When talking about *GLOBAL CLIMATE MODELS*, how well do *you* think *ATMOSPHERIC* models can deal with atmospheric vapour?

Valid Cases = 115 Missing Cases = 22
Response Percent = 83.9%

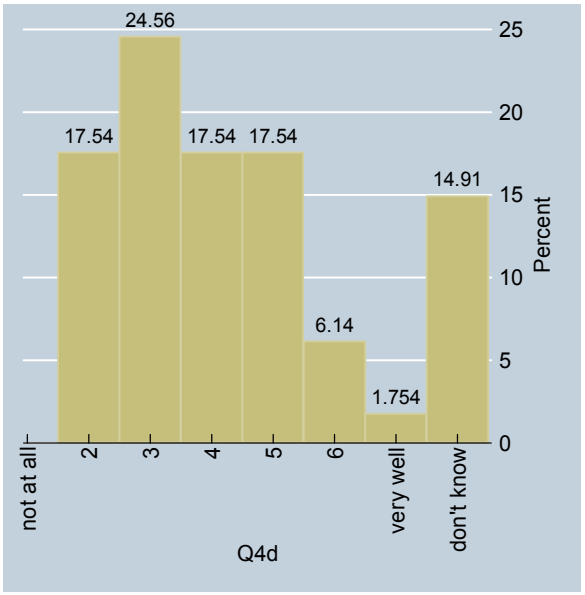


Valid Cases = 92
Minimum = 2
Maximum = 7
Mean = 4.49
Median = 5
Variance (Unbiased) = 1.40
Standard Deviation (Unbiased) = 1.18
Standard Error Of The Mean = 0.12
95 Percent Confidence Interval Around The Mean = 4.25 - 4.73
99 Percent Confidence Interval Around The Mean = 4.17 - 4.81

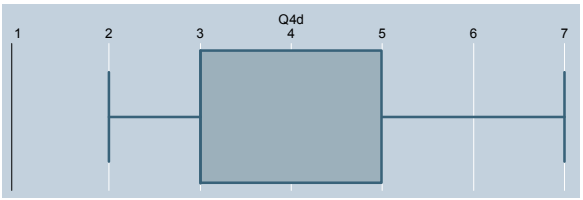


4d. When talking about *GLOBAL CLIMATE MODELS*, how well do *you* think *ATMOSPHERIC* models can deal with the influence of clouds?

Valid Cases = 114 Missing Cases = 23
Response Percent = 83.2%

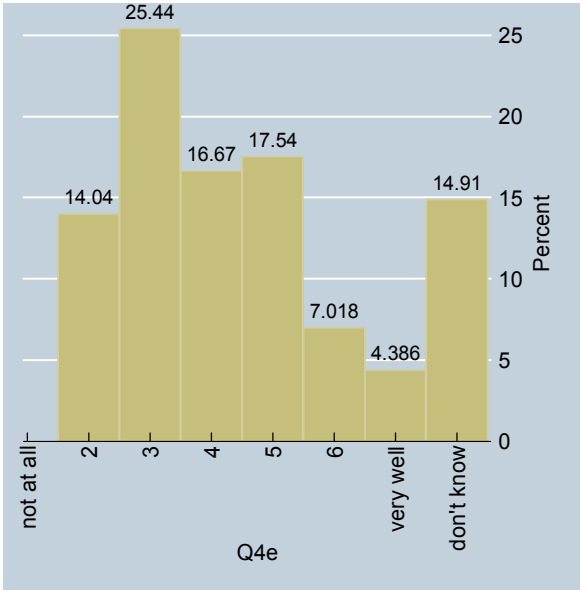


Valid Cases = 92
Minimum = 2
Maximum = 7
Mean = 3.71
Median = 4
Variance (Unbiased) = 1.73
Standard Deviation (Unbiased) = 1.31
Standard Error Of The Mean = 0.13
95 Percent Confidence Interval Around The Mean = 3.45 - 3.97
99 Percent Confidence Interval Around The Mean = 3.37 - 4.06

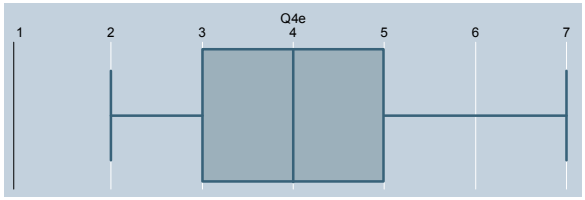


4e. When talking about *GLOBAL CLIMATE MODELS*, how well do *you* think *ATMOSPHERIC* models can deal with precipitation?

Valid Cases = 114 Missing Cases = 23
Response Percent = 83.2%

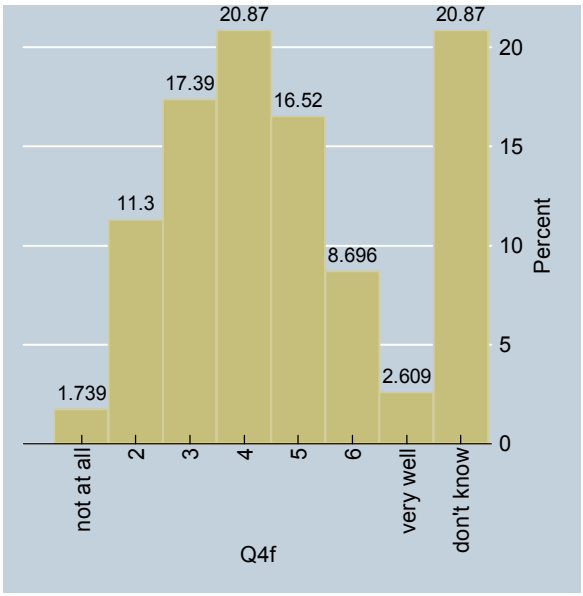


Valid Cases = 97
Minimum = 2
Maximum = 7
Mean = 3.90
Median = 4
Variance (Unbiased) = 1.97
Standard Deviation (Unbiased) = 1.40
Standard Error Of The Mean = 0.14
95 Percent Confidence Interval Around The Mean = 3.62 - 4.18
99 Percent Confidence Interval Around The Mean = 3.53 - 4.26

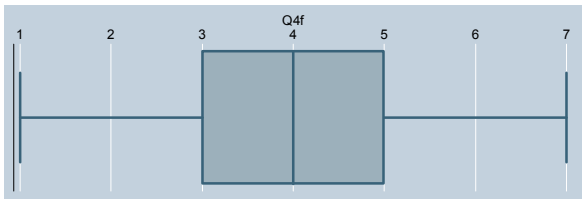


4f. When talking about *GLOBAL CLIMATE MODELS*, how well do *you* think *ATMOSPHERIC* models can deal with atmospheric convection?

Valid Cases = 115 Missing Cases = 22
Response Percent = 83.9%

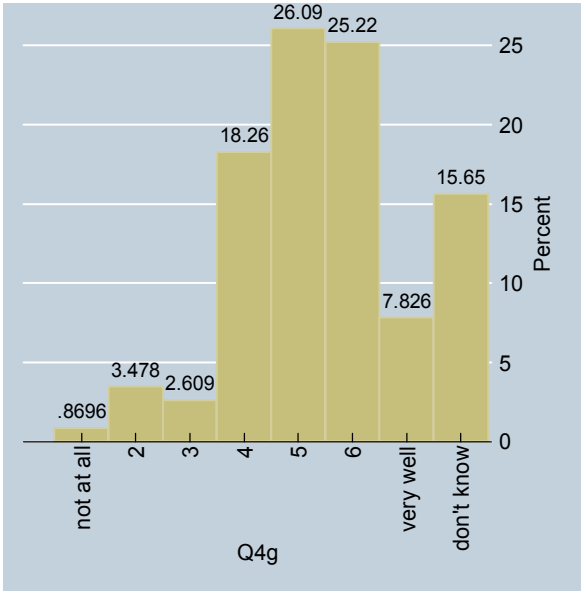


Valid Cases = 91
Minimum = 1
Maximum = 7
Mean = 3.96
Median = 4
Variance (Unbiased) = 1.95
Standard Deviation (Unbiased) = 1.40
Standard Error Of The Mean = 0.15
95 Percent Confidence Interval Around The Mean = 3.67 - 4.24
99 Percent Confidence Interval Around The Mean = 3.58 - 4.33

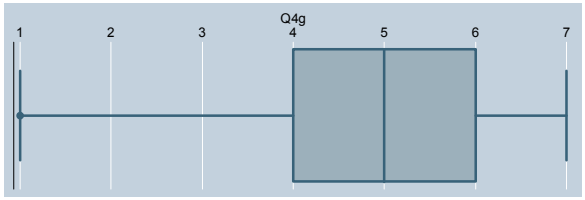


4g. When talking about *GLOBAL CLIMATE MODELS*, how well do *you* think *ATMOSPHERIC* models can deal with anthropogenic greenhouse gases?

Valid Cases = 115 Missing Cases = 22
Response Percent = 83.9%

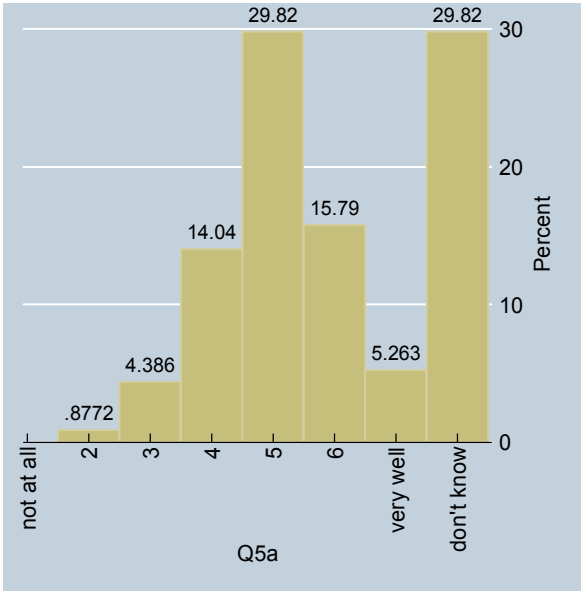


Valid Cases = 97
Minimum = 1
Maximum = 7
Mean = 5.04
Median = 5
Variance (Unbiased) = 1.56
Standard Deviation (Unbiased) = 1.25
Standard Error Of The Mean = 0.13
95 Percent Confidence Interval Around The Mean = 4.79 - 5.29
99 Percent Confidence Interval Around The Mean = 4.71 - 5.37

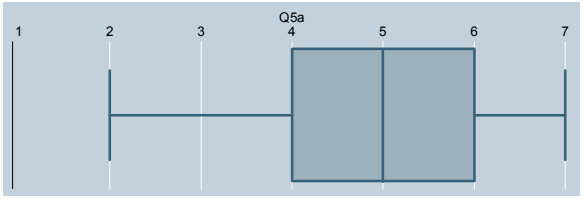


5a. When talking about *GLOBAL OCEAN MODELS*, how well do *you* think *OCEAN* models can deal with heat transport in the ocean?

Valid Cases = 114 Missing Cases = 23
Response Percent = 83.2%

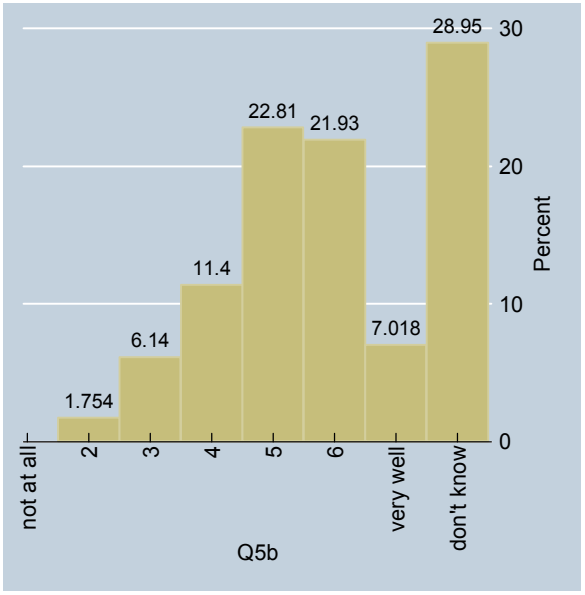


Valid Cases = 80
Minimum = 2
Maximum = 7
Mean = 5.01
Median = 5
Variance (Unbiased) = 1.10
Standard Deviation (Unbiased) = 1.05
Standard Error Of The Mean = 0.12
95 Percent Confidence Interval Around The Mean = 4.78 - 5.24
99 Percent Confidence Interval Around The Mean = 4.71 - 5.31

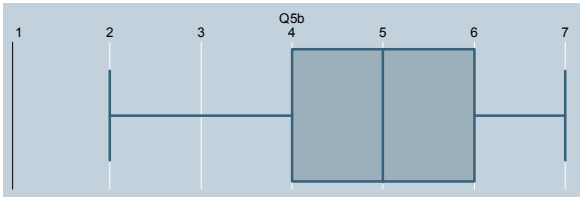


5b. When talking about *GLOBAL OCEAN MODELS*, how well do *you* think *OCEAN* models can deal with hydrodynamics?

Valid Cases = 114 Missing Cases = 23
Response Percent = 83.2%

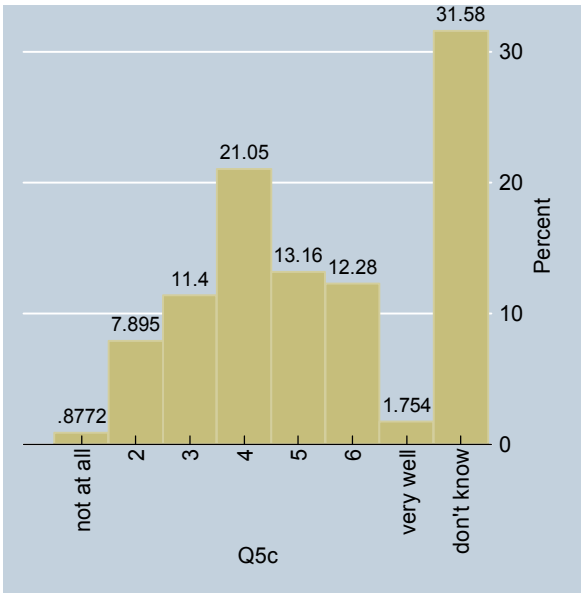


Valid Cases = 81
Minimum = 2
Maximum = 7
Mean = 5.10
Median = 5
Variance (Unbiased) = 1.44
Standard Deviation (Unbiased) = 1.20
Standard Error Of The Mean = 0.13
95 Percent Confidence Interval Around The Mean = 4.84 - 5.36
99 Percent Confidence Interval Around The Mean = 4.76 - 5.44

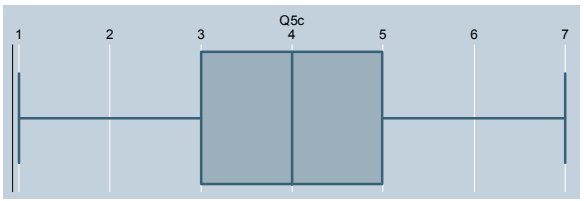


5c. When talking about *GLOBAL OCEAN MODELS*, how well do *you* think *OCEAN* models can deal with oceanic convection?

Valid Cases = 114 Missing Cases = 23
Response Percent = 83.2%

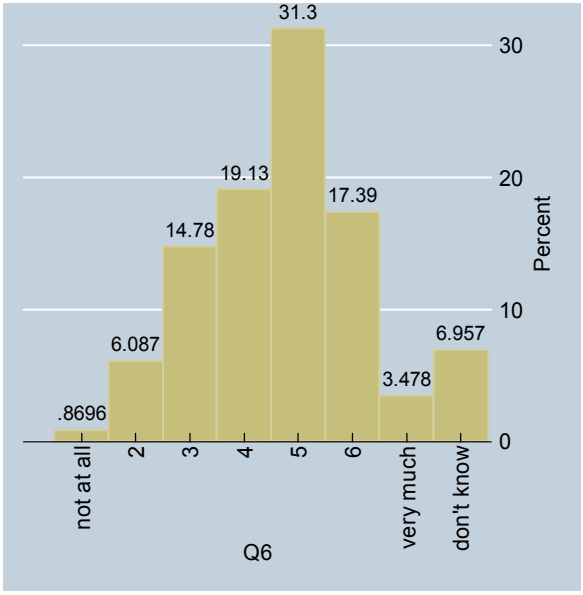


Valid Cases = 78
Minimum = 1
Maximum = 7
Mean = 4.19
Median = 4
Variance (Unbiased) = 1.87
Standard Deviation (Unbiased) = 1.37
Standard Error Of The Mean = 0.15
95 Percent Confidence Interval Around The Mean = 3.89 - 4.50
99 Percent Confidence Interval Around The Mean = 3.79 - 4.59

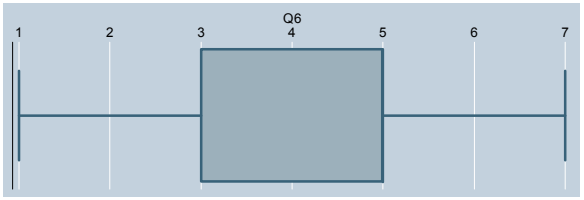


6. How much do you think that through the process of *downscaling and regional modeling* it is now possible to determine patterns of *climate change* for the Baltic Sea region?

Valid Cases = 115 Missing Cases = 22
Response Percent = 83.9%

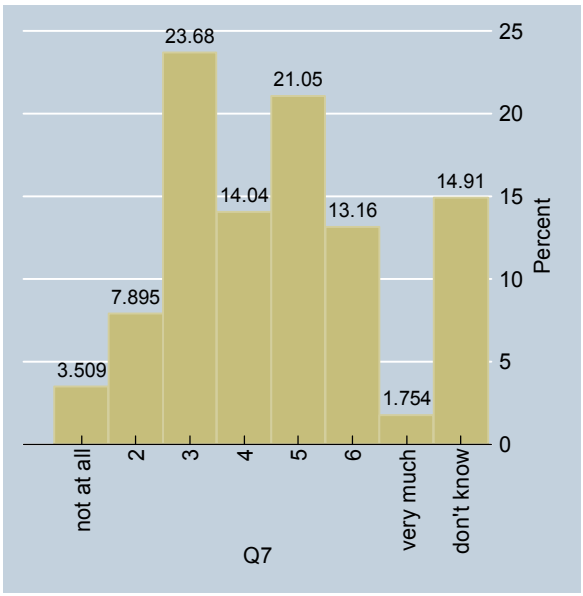


Valid Cases = 107
Minimum = 1
Maximum = 7
Mean = 4.50
Median = 5
Variance (Unbiased) = 1.69
Standard Deviation (Unbiased) = 1.30
Standard Error Of The Mean = 0.13
95 Percent Confidence Interval Around The Mean = 4.26 - 4.75
99 Percent Confidence Interval Around The Mean = 4.18 - 4.83

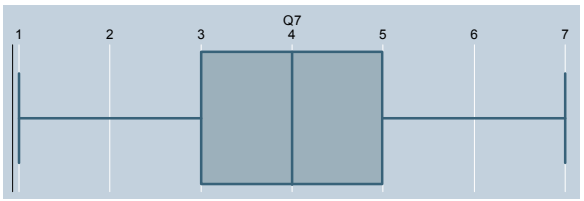


7. How much do you think that through the process of *downscaling and regional modeling* it is now possible to determine patterns of *sea level change* for the Baltic Sea region?

Valid Cases = 114 Missing Cases = 23
Response Percent = 83.2%



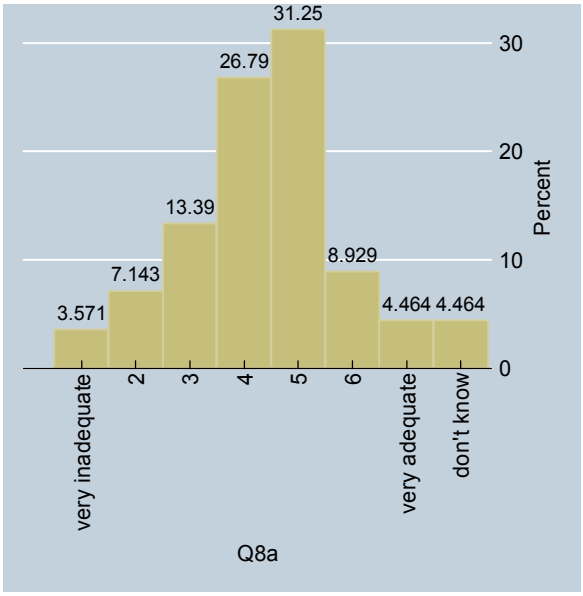
Valid Cases = 97
Minimum = 1
Maximum = 7
Mean = 4.03
Median = 4
Variance (Unbiased) = 2.09
Standard Deviation (Unbiased) = 1.45
Standard Error Of The Mean = 0.15
95 Percent Confidence Interval Around The Mean = 3.74 - 4.32
99 Percent Confidence Interval Around The Mean = 3.65 - 4.41



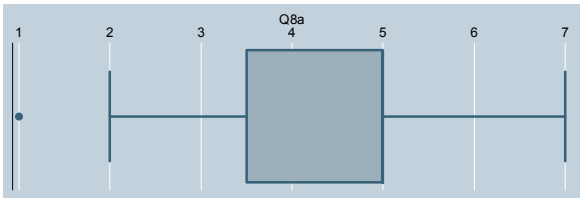
Section 1. d Assessment of the needs of the science

8a. Concerning the current state of climate science, data availability for climate change analysis is

Valid Cases = 112 Missing Cases = 25
Response Percent = 81.8%

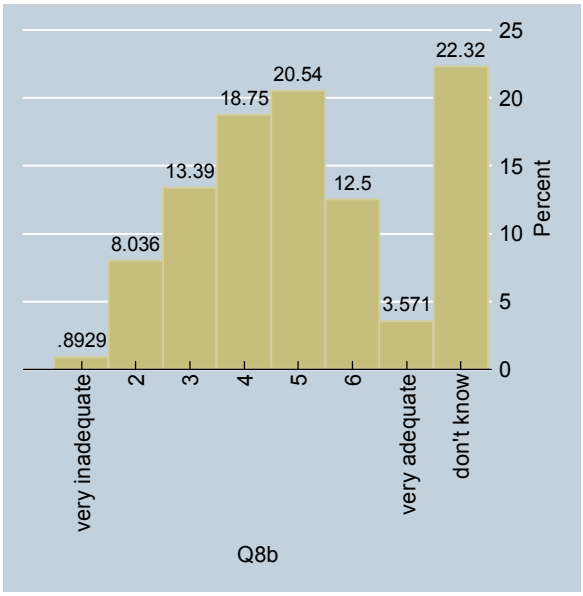


Valid Cases = 107
Minimum = 1
Maximum = 7
Mean = 4.25
Median = 4
Variance (Unbiased) = 1.85
Standard Deviation (Unbiased) = 1.36
Standard Error Of The Mean = 0.13
95 Percent Confidence Interval Around The Mean = 3.99 - 4.51
99 Percent Confidence Interval Around The Mean = 3.91 - 4.59

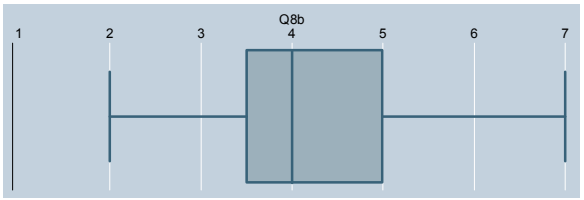


8b. Concerning the current state of climate science, data availability for sea level rise analysis is

Valid Cases = 112 Missing Cases = 25
Response Percent = 81.8%

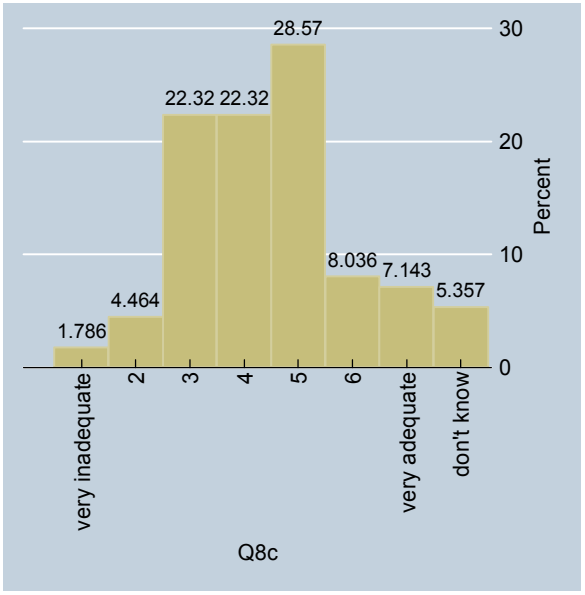


Valid Cases = 87
Minimum = 1
Maximum = 7
Mean = 4.31
Median = 4
Variance (Unbiased) = 1.94
Standard Deviation (Unbiased) = 1.39
Standard Error Of The Mean = 0.15
95 Percent Confidence Interval Around The Mean = 4.02 - 4.60
99 Percent Confidence Interval Around The Mean = 3.93 - 4.69

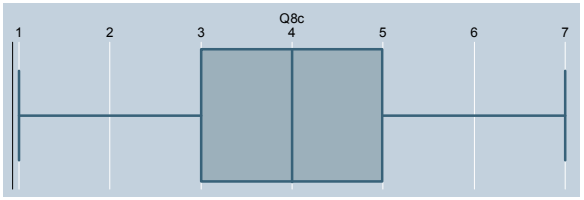


8c. Concerning the current state of climate science, the state of theoretical understanding of climate change phenomena is

Valid Cases = 112 Missing Cases = 25
Response Percent = 81.8%

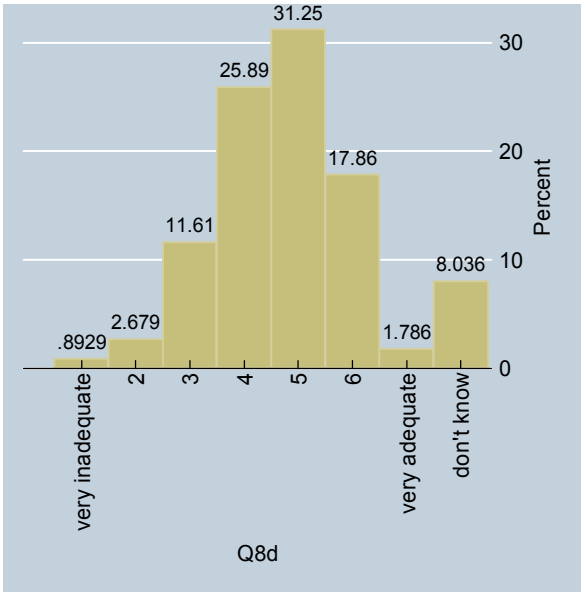


Valid Cases = 106
Minimum = 1
Maximum = 7
Mean = 4.31
Median = 4
Variance (Unbiased) = 1.84
Standard Deviation (Unbiased) = 1.35
Standard Error Of The Mean = 0.13
95 Percent Confidence Interval Around The Mean = 4.05 - 4.57
99 Percent Confidence Interval Around The Mean = 3.97 - 4.65

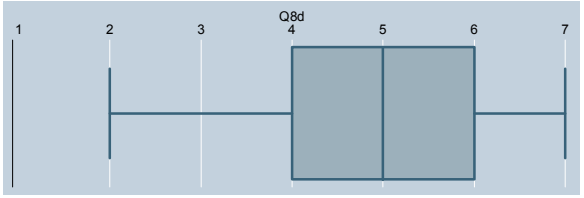


8d. Concerning the current state of climate science, current analytical methods are

Valid Cases = 112 Missing Cases = 25
Response Percent = 81.8%

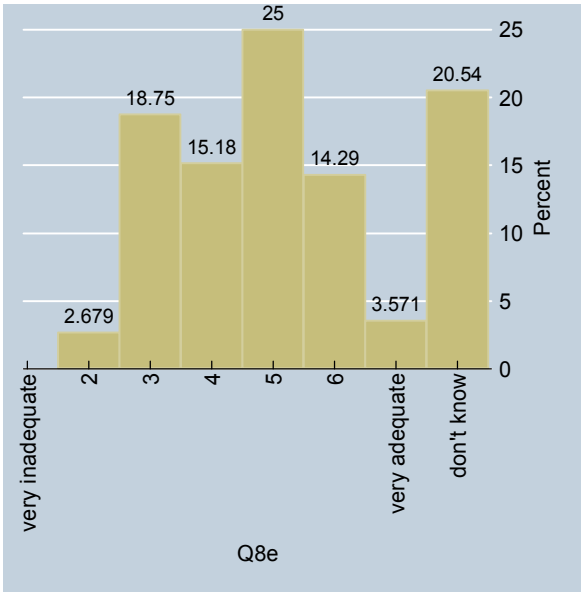


Valid Cases = 103
Minimum = 1
Maximum = 7
Mean = 4.57
Median = 5
Variance (Unbiased) = 1.31
Standard Deviation (Unbiased) = 1.14
Standard Error Of The Mean = 0.11
95 Percent Confidence Interval Around The Mean = 4.35 - 4.79
99 Percent Confidence Interval Around The Mean = 4.28 - 4.86

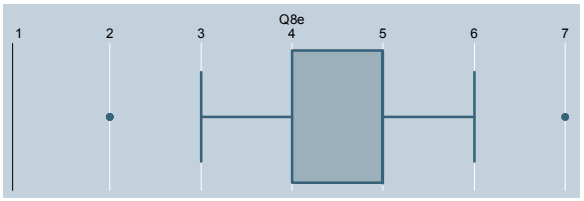


8e. concerning the current state of climate science, the state of theoretical understanding of sea level change is

Valid Cases = 112 Missing Cases = 25
Response Percent = 81.8%



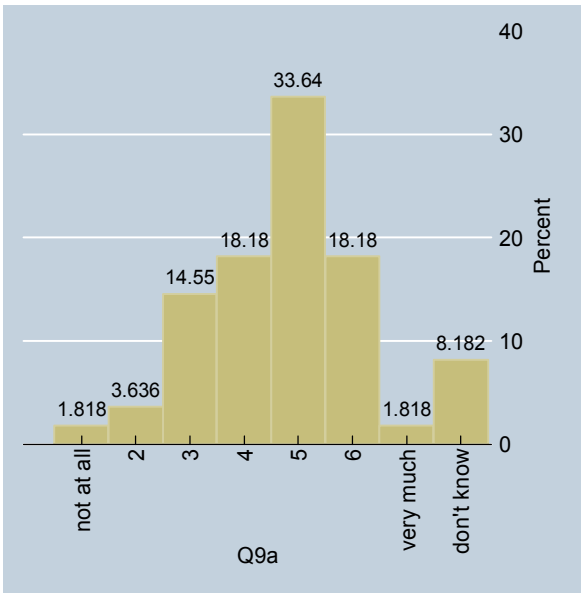
Valid Cases = 89
Minimum = 2
Maximum = 7
Mean = 4.51
Median = 5
Variance (Unbiased) = 1.57
Standard Deviation (Unbiased) = 1.25
Standard Error Of The Mean = 0.13
95 Percent Confidence Interval Around The Mean = 4.25 - 4.77
99 Percent Confidence Interval Around The Mean = 4.16 - 4.85



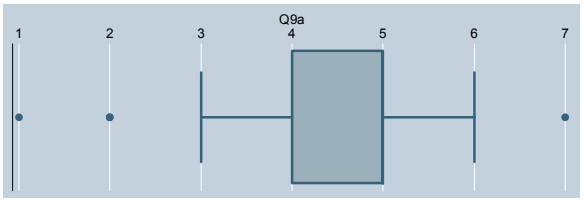
Section 1. e Changes and impacts in the Baltic Sea region

9a. To what degree is it possible to explicitly state patterns of change in the Baltic Sea region concerning regional climate change?

Valid Cases = 110 Missing Cases = 27
Response Percent = 80.3%

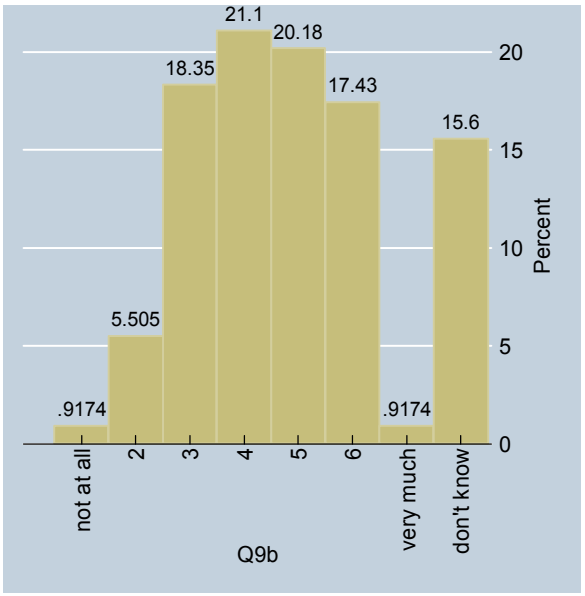


Valid Cases = 101
Minimum = 1
Maximum = 7
Mean = 4.52
Median = 5
Variance (Unbiased) = 1.57
Standard Deviation (Unbiased) = 1.25
Standard Error Of The Mean = 0.12
95 Percent Confidence Interval Around The Mean = 4.28 - 4.77
99 Percent Confidence Interval Around The Mean = 4.20 - 4.85

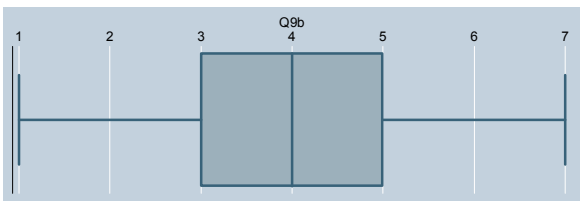


9b. To what degree is it possible to explicitly state patterns of change in the Baltic Sea region concerning regional sea level rise?

Valid Cases = 109 Missing Cases = 28
Response Percent = 79.6%

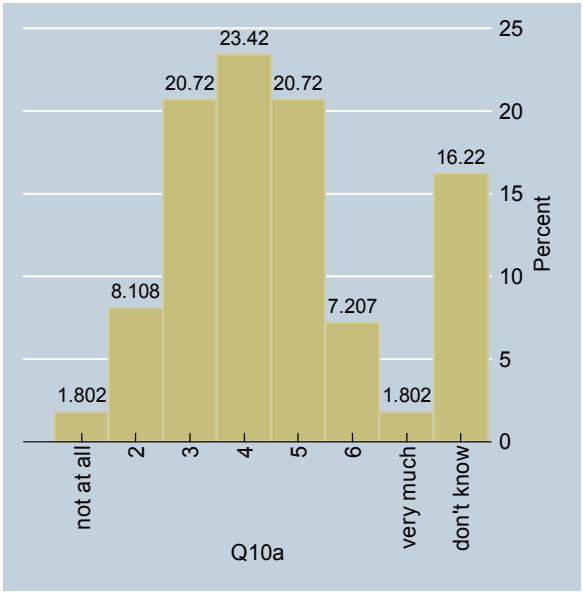


Valid Cases = 92
Minimum = 1
Maximum = 7
Mean = 4.30
Median = 4
Variance (Unbiased) = 1.66
Standard Deviation (Unbiased) = 1.29
Standard Error Of The Mean = 0.13
95 Percent Confidence Interval Around The Mean = 4.04 - 4.57
99 Percent Confidence Interval Around The Mean = 3.96 - 4.65

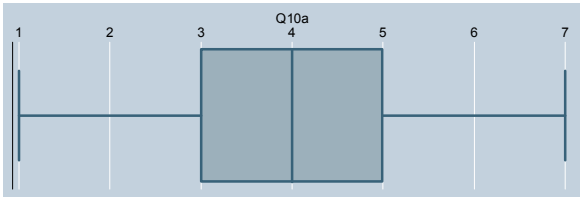


10a. To what degree is it possible to explicitly state regional *CLIMATE CHANGE IMPACTS* in the Baltic Sea region for terrestrial ecological systems?

Valid Cases = 111 Missing Cases = 26
Response Percent = 81.0%

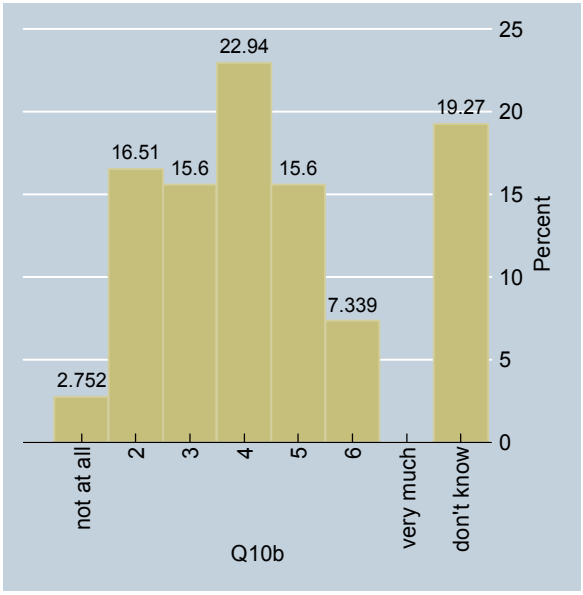


Valid Cases = 93
Minimum = 1
Maximum = 7
Mean = 3.98
Median = 4
Variance (Unbiased) = 1.63
Standard Deviation (Unbiased) = 1.28
Standard Error Of The Mean = 0.13
95 Percent Confidence Interval Around The Mean = 3.72 - 4.24
99 Percent Confidence Interval Around The Mean = 3.64 - 4.32

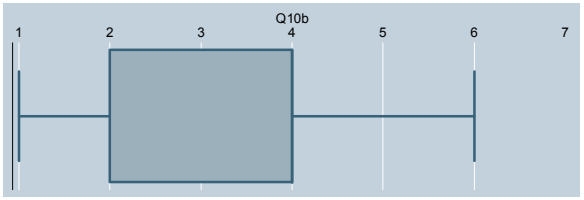


10b. To what degree is it possible to explicitly state regional *CLIMATE CHANGE IMPACTS* in the Baltic Sea region for marine ecological systems?

Valid Cases = 109 Missing Cases = 28
Response Percent = 79.6%

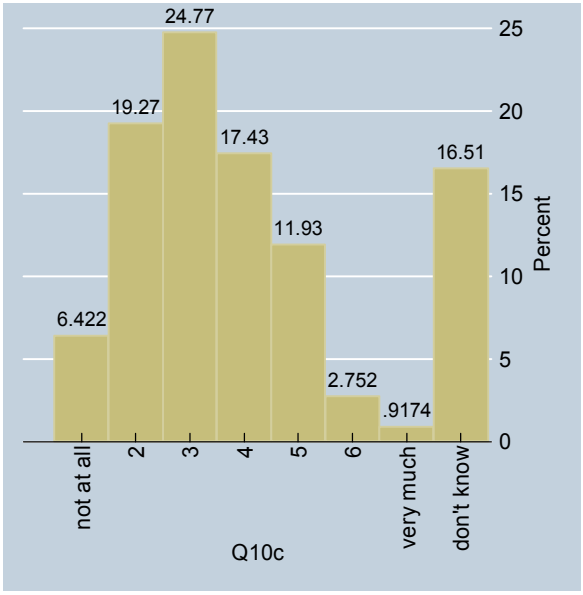


Valid Cases = 88
Minimum = 1
Maximum = 6
Mean = 3.67
Median = 4
Variance (Unbiased) = 1.79
Standard Deviation (Unbiased) = 1.34
Standard Error Of The Mean = 0.14
95 Percent Confidence Interval Around The Mean = 3.39 - 3.95
99 Percent Confidence Interval Around The Mean = 3.30 - 4.04

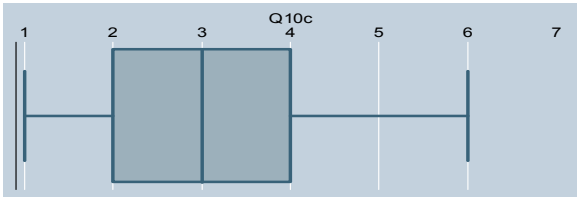


10c. To what degree is it possible to explicitly state regional *CLIMATE CHANGE IMPACTS* in the Baltic Sea region for socio-economic systems?

Valid Cases = 109 Missing Cases = 28
Response Percent = 79.6%

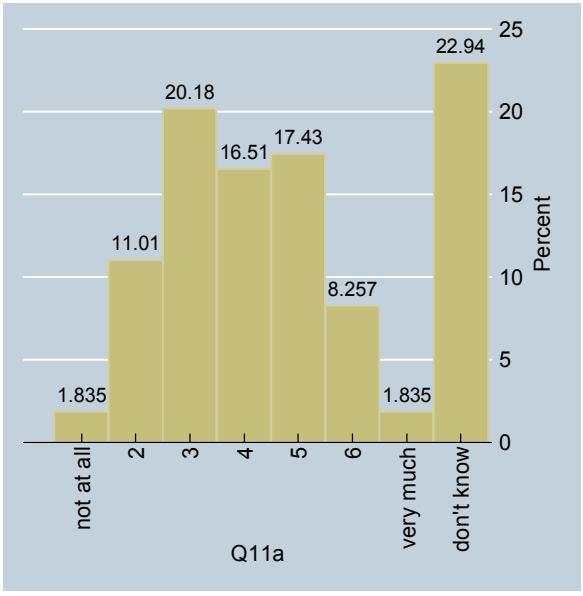


Valid Cases = 91
Minimum = 1
Maximum = 7
Mean = 3.25
Median = 3
Variance (Unbiased) = 1.75
Standard Deviation (Unbiased) = 1.32
Standard Error Of The Mean = 0.14
95 Percent Confidence Interval Around The Mean = 2.98 - 3.52
99 Percent Confidence Interval Around The Mean = 2.90 - 3.61

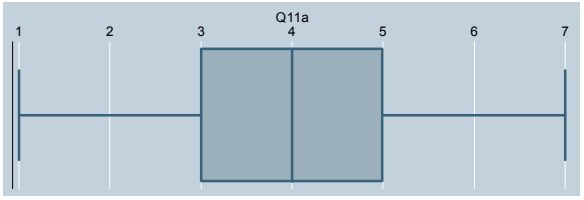


11a. To what degree is it possible to explicitly state regional *SEA LEVEL CHANGE IMPACTS* in the Baltic Sea region for marine ecological systems?

Valid Cases = 109 Missing Cases = 2
Response Percent = 79.6%

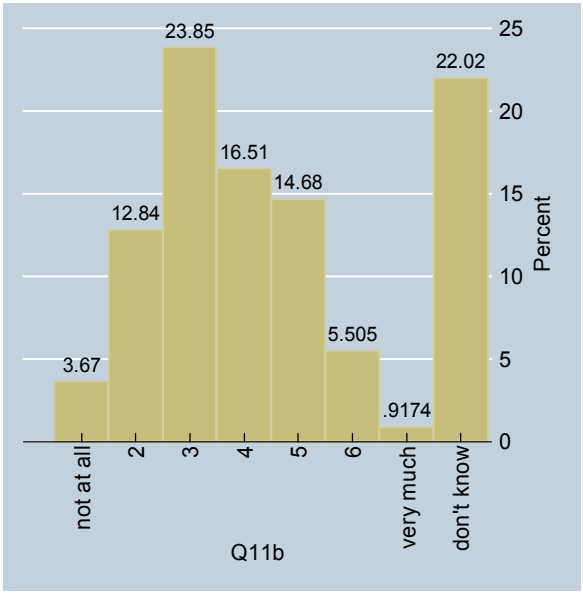


Valid Cases = 84
Minimum = 1
Maximum = 7
Mean = 3.89
Median = 4
Variance (Unbiased) = 1.93
Standard Deviation (Unbiased) = 1.39
Standard Error Of The Mean = 0.15
95 Percent Confidence Interval Around The Mean = 3.60 - 4.19
99 Percent Confidence Interval Around The Mean = 3.50 - 4.28

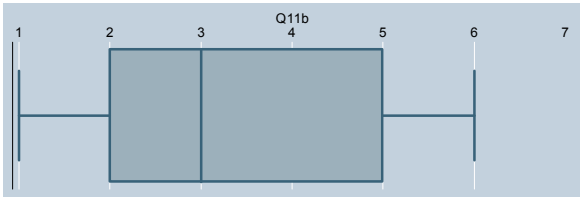


11b. To what degree is it possible to explicitly state regional *SEA LEVEL CHANGE IMPACTS* in the Baltic Sea region for socio-economic systems?

Valid Cases = 109 Missing Cases = 28
Response Percent = 79.6%



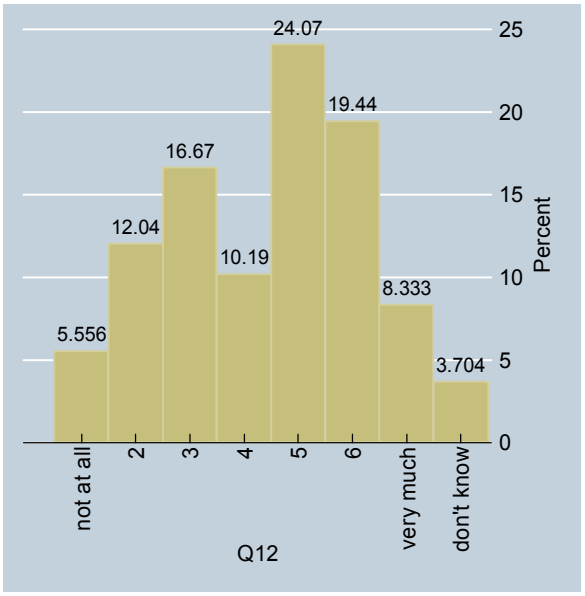
Valid Cases = 85
Minimum = 1
Maximum = 7
Mean = 3.59
Median = 3
Variance (Unbiased) = 1.82
Standard Deviation (Unbiased) = 1.35
Standard Error Of The Mean = 0.15
95 Percent Confidence Interval Around The Mean = 3.30 - 3.87
99 Percent Confidence Interval Around The Mean = 3.21 - 3.96



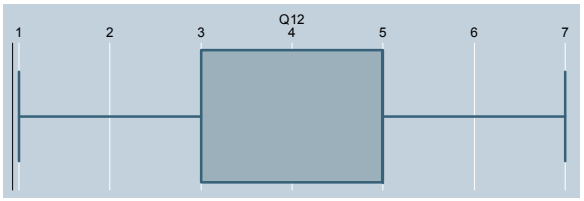
Section 1. f Climate change and sea level rise

12. How convinced are you that climate change poses a very serious threat to the Baltic Sea region in which you live?

Valid Cases = 108 Missing Cases = 29
Response Percent = 78.8%

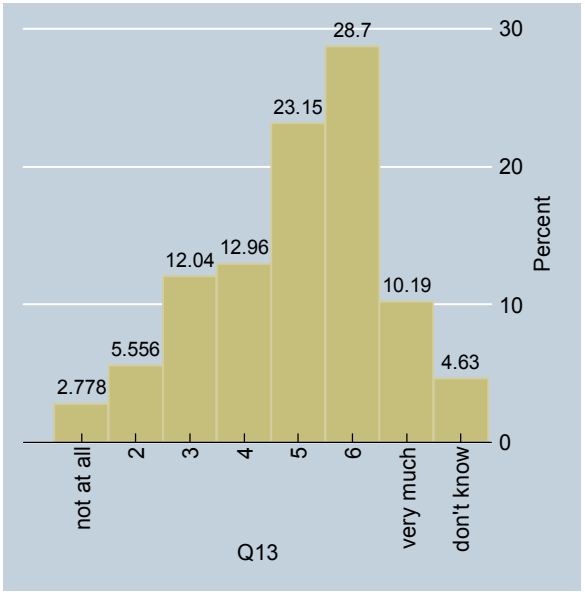


Valid Cases = 104
Minimum = 1
Maximum = 7
Mean = 4.32
Median = 5
Variance (Unbiased) = 2.96
Standard Deviation (Unbiased) = 1.72
Standard Error Of The Mean = 0.17
95 Percent Confidence Interval Around The Mean = 3.99 - 4.65
99 Percent Confidence Interval Around The Mean = 3.88 - 4.75

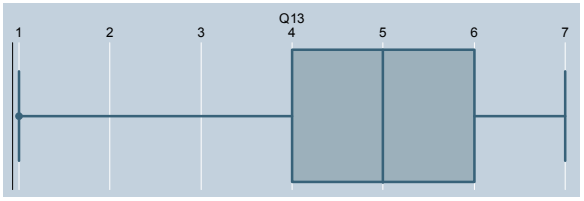


13. How convinced are you that the Baltic Sea region in which you live is beginning to experience the more gradual impacts of climate change, anthropogenic or otherwise

Valid Cases = 108 Missing Cases = 29
Response Percent = 78.8%

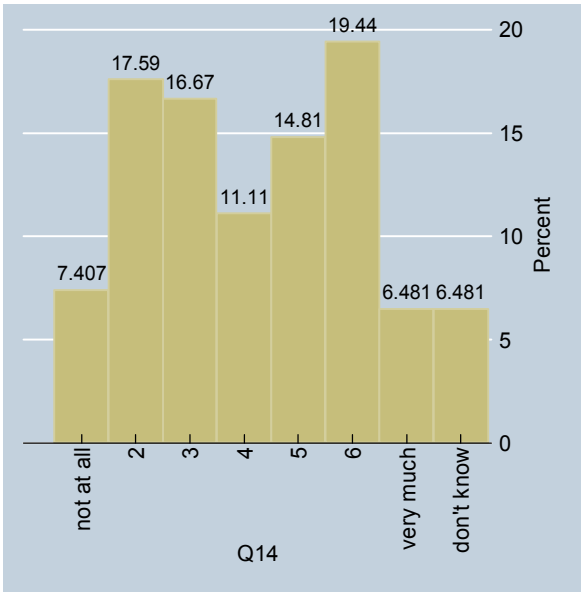


Valid Cases = 103
Minimum = 1
Maximum = 7
Mean = 4.83
Median = 5
Variance (Unbiased) = 2.35
Standard Deviation (Unbiased) = 1.53
Standard Error Of The Mean = 0.15
95 Percent Confidence Interval Around The Mean = 4.54 - 5.13
99 Percent Confidence Interval Around The Mean = 4.45 - 5.22

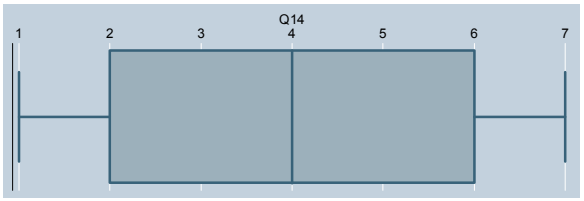


14. How convinced are you that sea level rise poses a very serious threat to the Baltic Sea region in which you live?

Valid Cases = 108 Missing Cases = 29
Response Percent = 78.8%

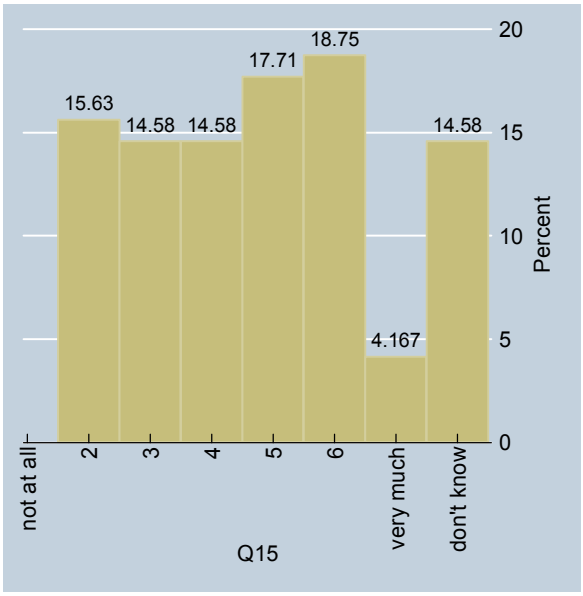


Valid Cases = 101
Minimum = 1
Maximum = 7
Mean = 3.99
Median = 4
Variance (Unbiased) = 3.29
Standard Deviation (Unbiased) = 1.81
Standard Error Of The Mean = 0.18
95 Percent Confidence Interval Around The Mean = 3.64 - 4.34
99 Percent Confidence Interval Around The Mean = 3.53 - 4.45

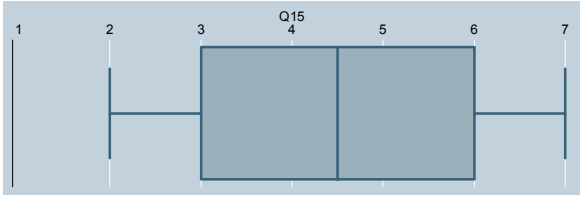


15. .How convinced are you that the Baltic region in which you live is beginning to experience the more general impacts of sea level rise?

Valid Cases = 96 Missing Cases = 41
Response Percent = 70.1%

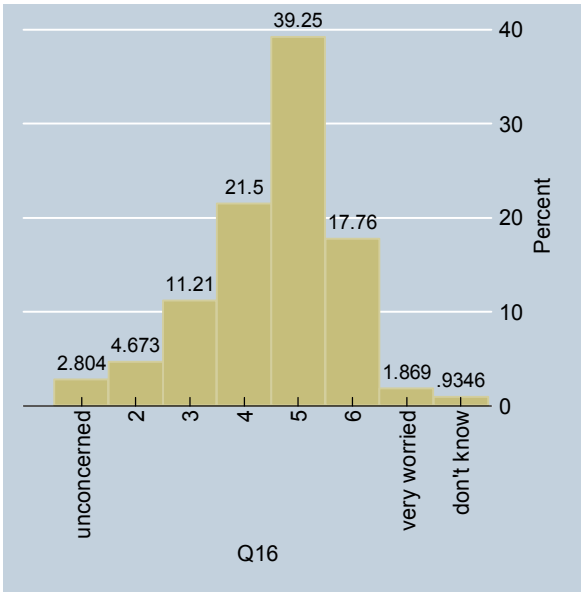


Valid Cases = 82
Minimum = 2
Maximum = 7
Mean = 4.26
Median = 4
Variance (Unbiased) = 2.39
Standard Deviation (Unbiased) = 1.55
Standard Error Of The Mean = 0.17
95 Percent Confidence Interval Around The Mean = 3.92 - 4.59
99 Percent Confidence Interval Around The Mean = 3.82 - 4.70

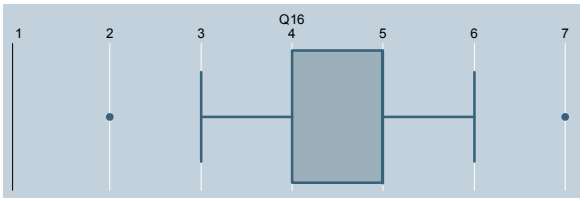


16. Over the issue of Baltic regional climate change, the general public should be told to be

Valid Cases = 107 Missing Cases = 30
Response Percent = 78.1%

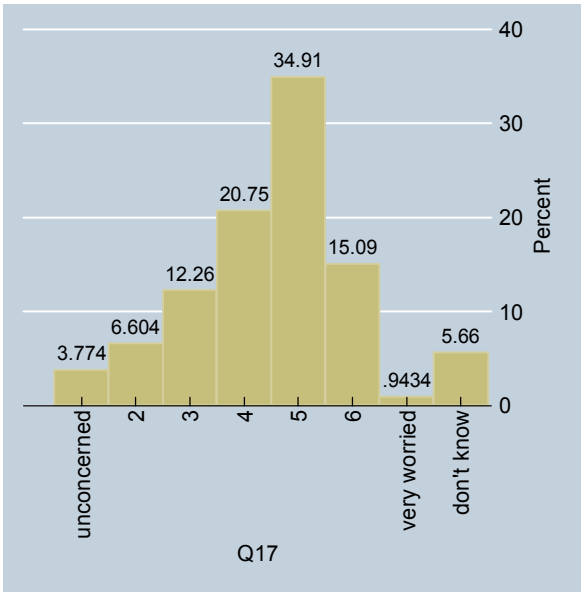


Valid Cases = 106
Minimum = 1
Maximum = 7
Mean = 4.52
Median = 5
Variance (Unbiased) = 1.59
Standard Deviation (Unbiased) = 1.26
Standard Error Of The Mean = 0.12
95 Percent Confidence Interval Around The Mean = 4.28 - 4.76
99 Percent Confidence Interval Around The Mean = 4.20 - 4.83

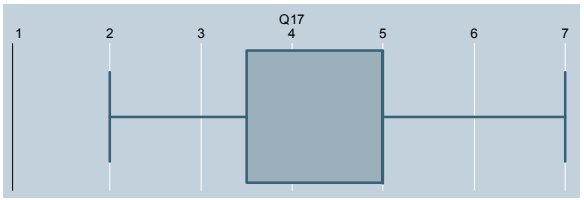


17. Over the issue of Baltic regional sea level rise, the general public should be told to be

Valid Cases = 106 Missing Cases = 31
Response Percent = 77.4%

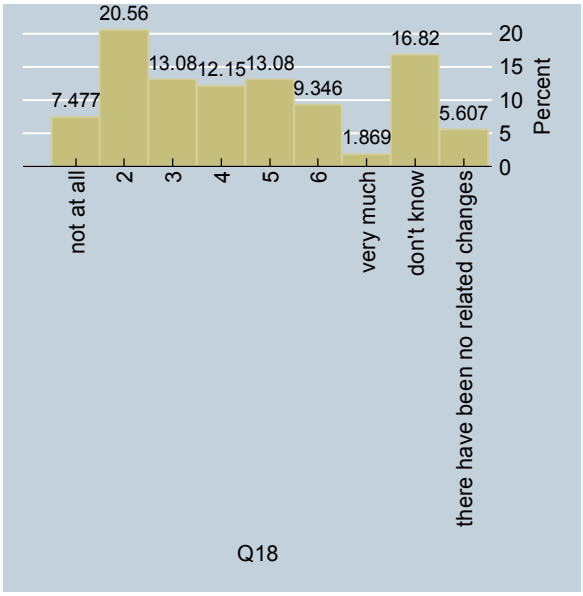


Valid Cases = 100
Minimum = 1
Maximum = 7
Mean = 4.33
Median = 5
Variance (Unbiased) = 1.78
Standard Deviation (Unbiased) = 1.33
Standard Error Of The Mean = 0.13
95 Percent Confidence Interval Around The Mean = 4.07 - 4.59
99 Percent Confidence Interval Around The Mean = 3.99 - 4.67

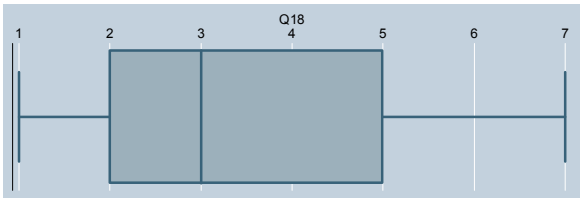


18. How much can we attribute climate related damages in the last 20 years in the Baltic region to climate change?

Valid Cases = 107 Missing Cases = 30
Response Percent = 78.1%

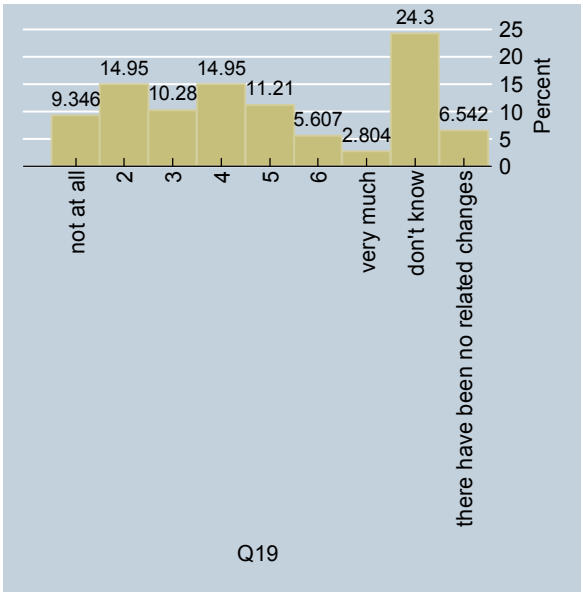


Valid Cases = 83
Minimum = 1
Maximum = 7
Mean = 3.49
Median = 3
Variance (Unbiased) = 2.74
Standard Deviation (Unbiased) = 1.66
Standard Error Of The Mean = 0.18
95 Percent Confidence Interval Around The Mean = 3.14 - 3.85
99 Percent Confidence Interval Around The Mean = 3.03 - 3.96

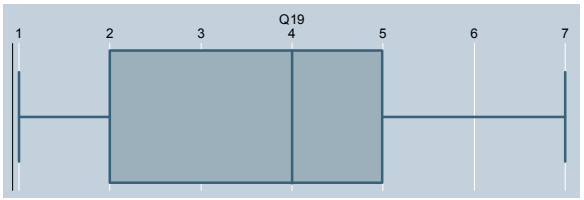


19. How much can we attribute coastal related damages in the last 20 years in the Baltic region to sea level rise?

Valid Cases = 107 Missing Cases = 30
Response Percent = 78.1%



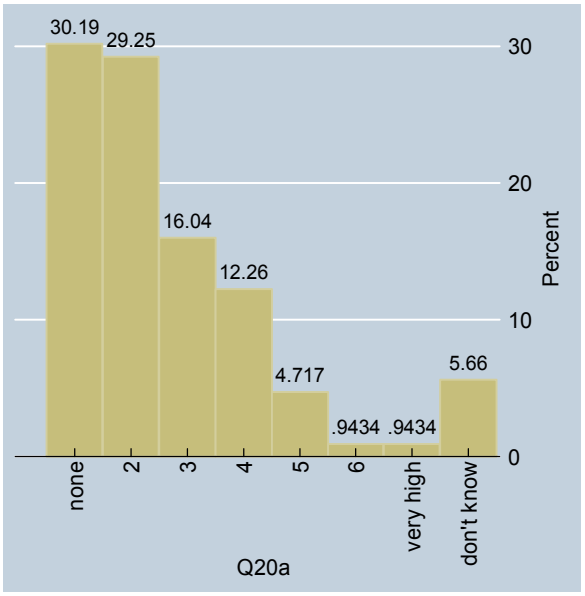
Valid Cases = 74
Minimum = 1
Maximum = 7
Mean = 3.46
Median = 3.50
Variance (Unbiased) = 2.83
Standard Deviation (Unbiased) = 1.68
Standard Error Of The Mean = 0.20
95 Percent Confidence Interval Around The Mean = 3.08 - 3.84
99 Percent Confidence Interval Around The Mean = 2.96 - 3.96



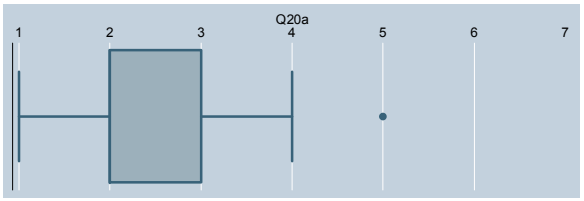
Section 1. g The future

20a. If we do not do anything towards adaptation or mitigation to *climate change*, the potential for catastrophe in the Baltic Sea region for the next 10 years is

Valid Cases = 106 Missing Cases = 31
Response Percent = 77.4%

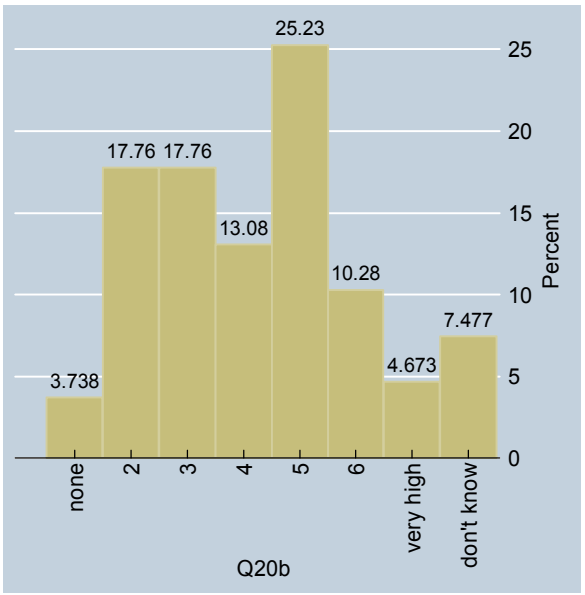


Valid Cases = 100
Minimum = 1
Maximum = 7
Mean = 2.35
Median = 2
Variance (Unbiased) = 1.77
Standard Deviation (Unbiased) = 1.33
Standard Error Of The Mean = 0.13
95 Percent Confidence Interval Around The Mean = 2.09 - 2.61
99 Percent Confidence Interval Around The Mean = 2.01 - 2.69

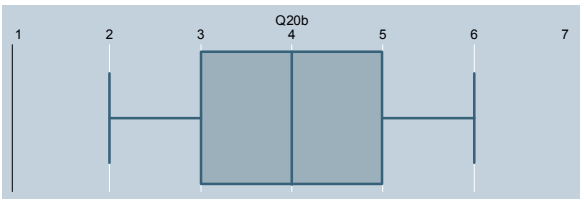


20b. If we do not do anything towards adaptation or mitigation to *climate change*, the potential for catastrophe in the Baltic Sea region for the next 50 years is

Valid Cases = 107 Missing Cases = 30
Response Percent = 78.1%

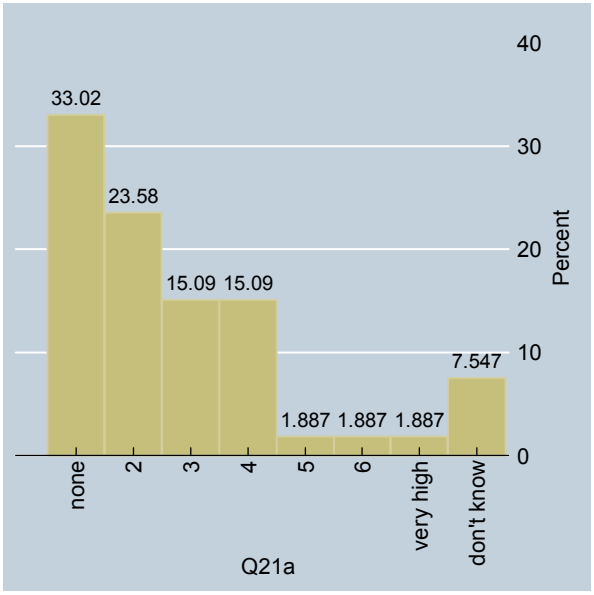


Valid Cases = 99
Minimum = 1
Maximum = 7
Mean = 3.95
Median = 4
Variance (Unbiased) = 2.52
Standard Deviation (Unbiased) = 1.59
Standard Error Of The Mean = 0.16
95 Percent Confidence Interval Around The Mean = 3.64 - 4.26
99 Percent Confidence Interval Around The Mean = 3.54 - 4.36

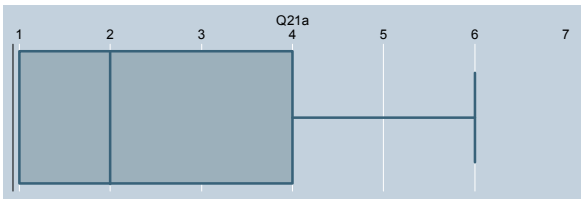


21a. If we do not do anything towards adaptation or mitigation to *sea level change*, the potential for catastrophe in the Baltic Sea region for the next 10 years is

Valid Cases = 106 Missing Cases = 31
Response Percent = 77.4%

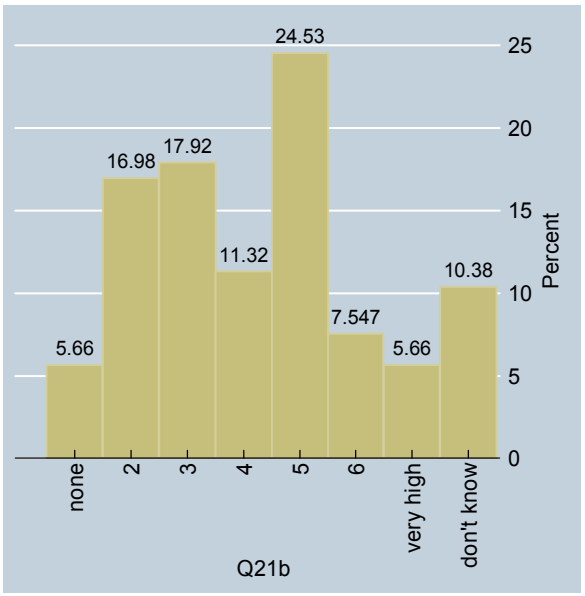


Valid Cases = 98
Minimum = 1
Maximum = 7
Mean = 2.38
Median = 2
Variance (Unbiased) = 2.07
Standard Deviation (Unbiased) = 1.44
Standard Error Of The Mean = 0.15
95 Percent Confidence Interval Around The Mean = 2.09 - 2.66
99 Percent Confidence Interval Around The Mean = 2.00 - 2.75

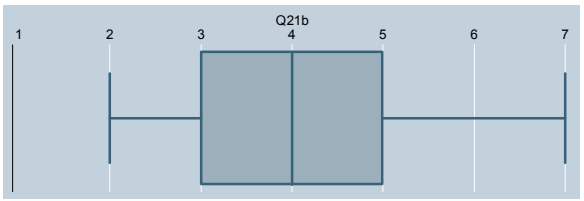


21b. If we do not do anything towards adaptation or mitigation to *sea level change*, the potential for catastrophe in the Baltic Sea region for the next 50 years is

Valid Cases = 106 Missing Cases = 31
Response Percent = 77.4%

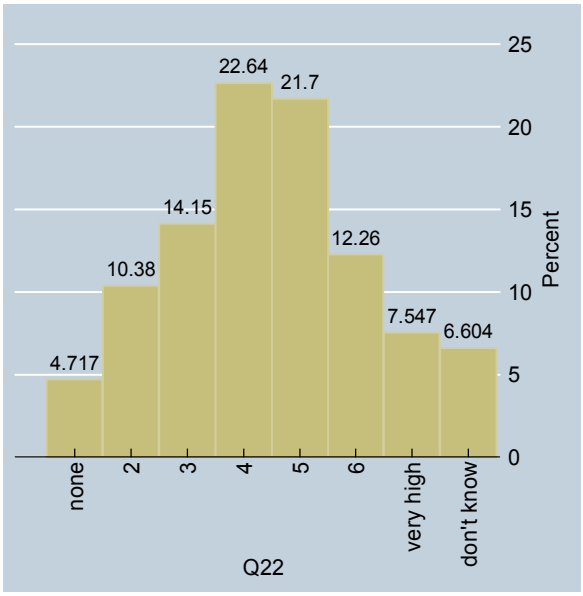


Valid Cases = 95
Minimum = 1
Maximum = 7
Mean = 3.86
Median = 4
Variance (Unbiased) = 2.72
Standard Deviation (Unbiased) = 1.65
Standard Error Of The Mean = 0.17
95 Percent Confidence Interval Around The Mean = 3.53 - 4.19
99 Percent Confidence Interval Around The Mean = 3.43 - 4.30

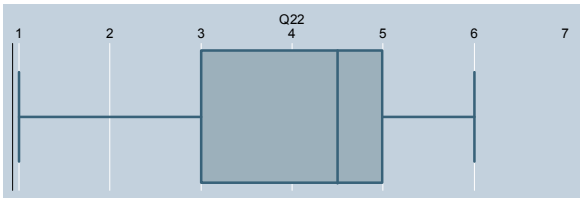


22. The potential that climate change might have some positive effects for the Baltic region is

Valid Cases = 106 Missing Cases = 31
Response Percent = 77.4%



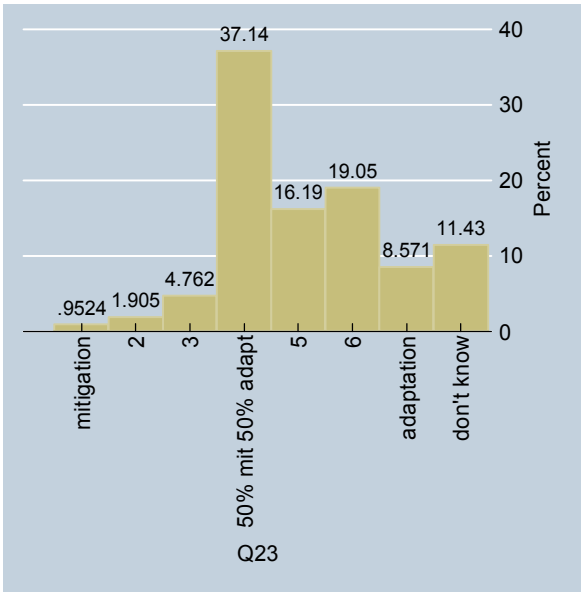
Valid Cases = 99
Minimum = 1
Maximum = 7
Mean = 4.21
Median = 4
Variance (Unbiased) = 2.52
Standard Deviation (Unbiased) = 1.59
Standard Error Of The Mean = 0.16
95 Percent Confidence Interval Around The Mean = 3.90 - 4.52
99 Percent Confidence Interval Around The Mean = 3.80 - 4.62



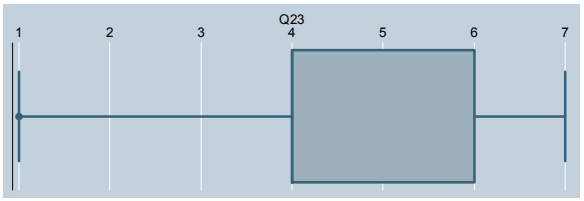
Section 1. h Mitigation and adaptation

23. For the Baltic Sea region, the best approach to resolving the problems related to climate change is

Valid Cases = 105 Missing Cases = 32
Response Percent = 76.6%

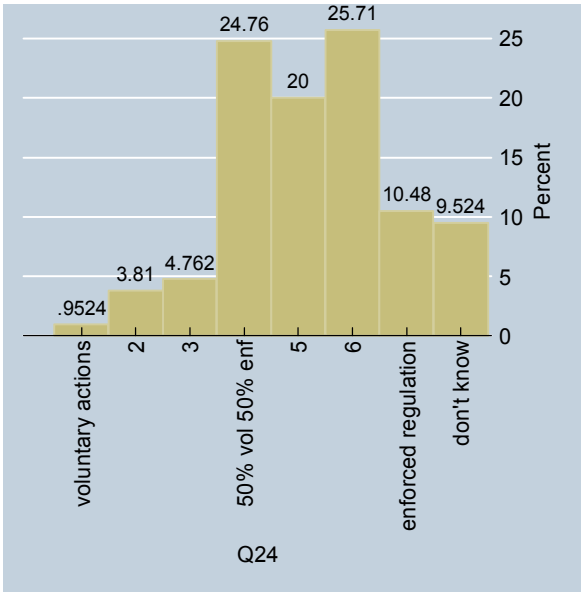


Valid Cases = 93
Minimum = 1
Maximum = 7
Mean = 4.77
Median = 4
Variance (Unbiased) = 1.57
Standard Deviation (Unbiased) = 1.25
Standard Error Of The Mean = 0.13
95 Percent Confidence Interval Around The Mean = 4.52 - 5.03
99 Percent Confidence Interval Around The Mean = 4.44 - 5.11

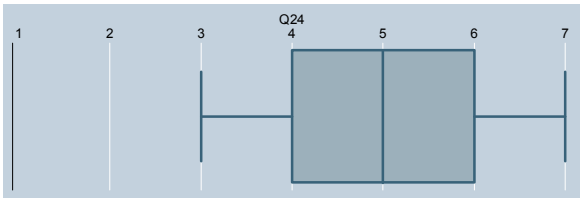


24. The best approach to *adaptation* to anthropogenic climate change should be based on

Valid Cases = 105 Missing Cases = 32
Response Percent = 76.6%

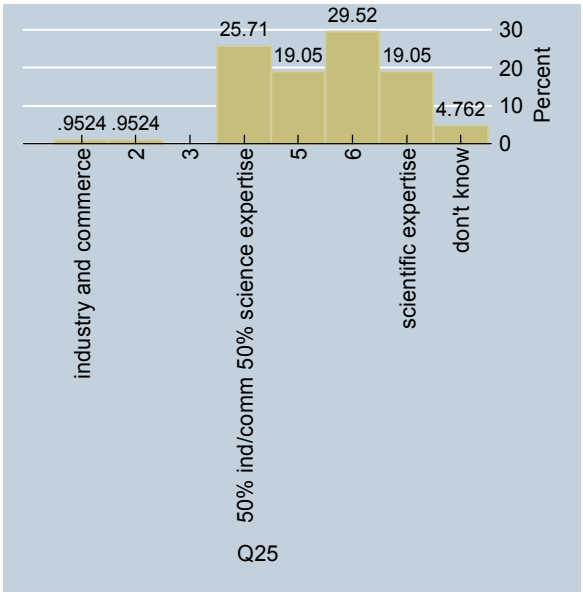


Valid Cases = 95
Minimum = 1
Maximum = 7
Mean = 4.97
Median = 5
Variance (Unbiased) = 1.80
Standard Deviation (Unbiased) = 1.34
Standard Error Of The Mean = 0.14
95 Percent Confidence Interval Around The Mean = 4.70 - 5.24
99 Percent Confidence Interval Around The Mean = 4.61 - 5.32

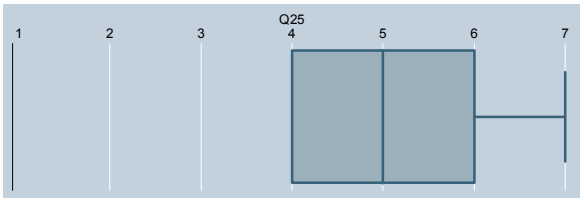


25. In making policy decisions about *adaptation* to climate change, priority should be given to

Valid Cases = 105 Missing Cases = 32
Response Percent = 76.6%

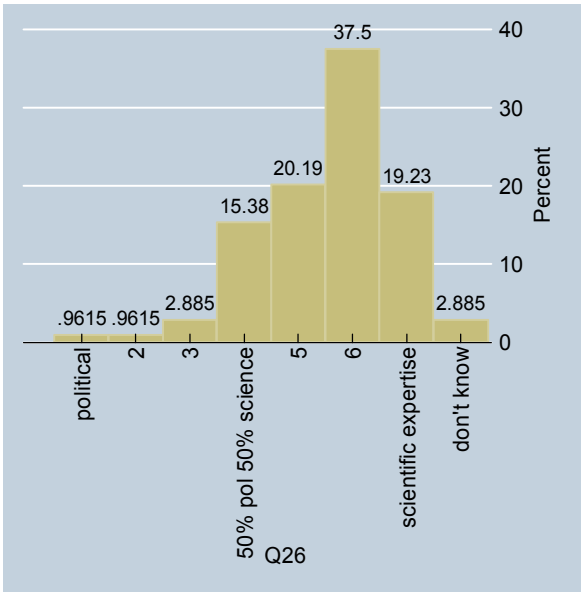


Valid Cases = 100
Minimum = 1
Maximum = 7
Mean = 5.37
Median = 6
Variance (Unbiased) = 1.51
Standard Deviation (Unbiased) = 1.23
Standard Error Of The Mean = 0.12
95 Percent Confidence Interval Around The Mean = 5.13 - 5.61
99 Percent Confidence Interval Around The Mean = 5.05 - 5.69

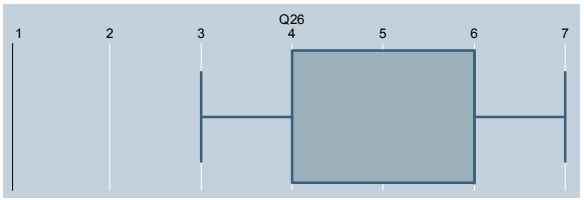


26. In making policy decisions about *adaptation* to climate change, priority should be given to

Valid Cases = 104 Missing Cases = 33
Response Percent = 75.9%

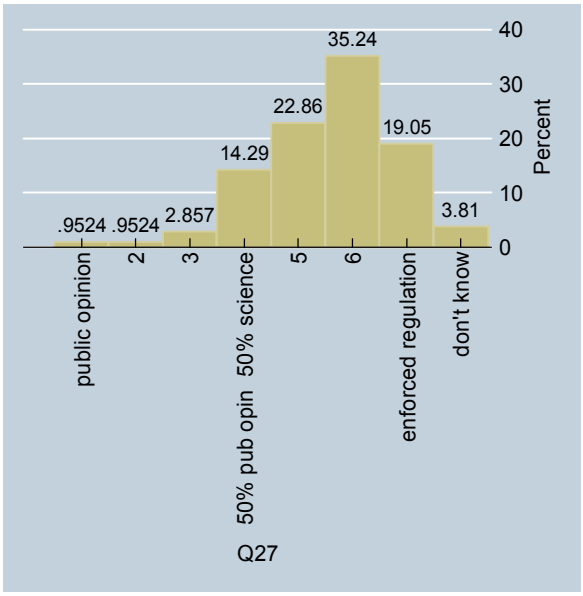


Valid Cases = 101
Minimum = 1
Maximum = 7
Mean = 5.50
Median = 6
Variance (Unbiased) = 1.47
Standard Deviation (Unbiased) = 1.21
Standard Error Of The Mean = 0.12
95 Percent Confidence Interval Around The Mean = 5.26 - 5.73
99 Percent Confidence Interval Around The Mean = 5.18 - 5.81

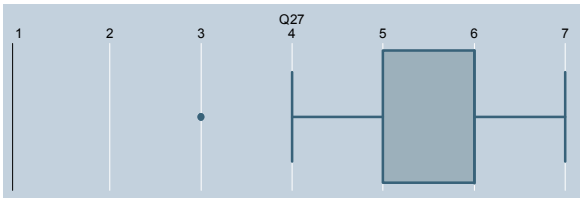


27. In making policy decisions about *adaptation* to climate change, priority should be given to

Valid Cases = 105 Missing Cases = 32
Response Percent = 76.6%

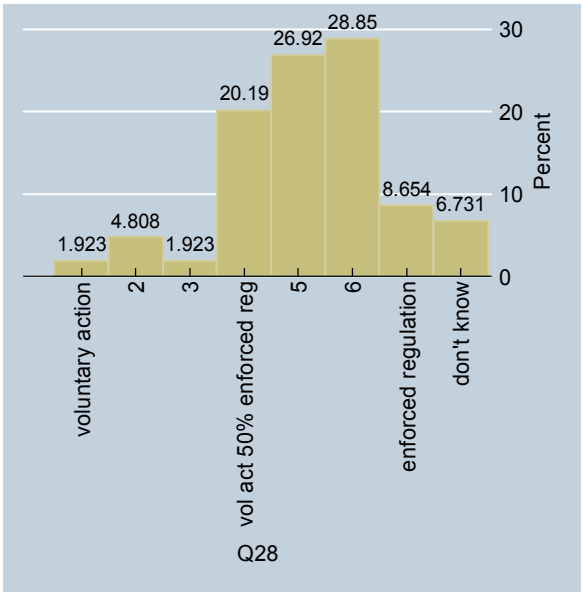


Valid Cases = 101
Minimum = 1
Maximum = 7
Mean = 5.49
Median = 6
Variance (Unbiased) = 1.45
Standard Deviation (Unbiased) = 1.21
Standard Error Of The Mean = 0.12
95 Percent Confidence Interval Around The Mean = 5.25 - 5.72
99 Percent Confidence Interval Around The Mean = 5.18 - 5.79

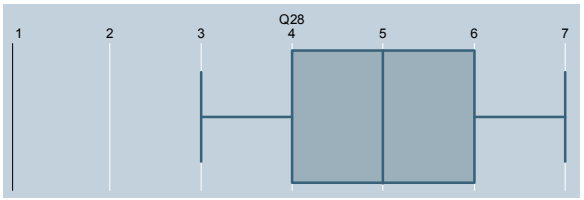


28. The best approach to *mitigation* of anthropogenic climate change would be based on

Valid Cases = 104 Missing Cases = 33
Response Percent = 75.9%

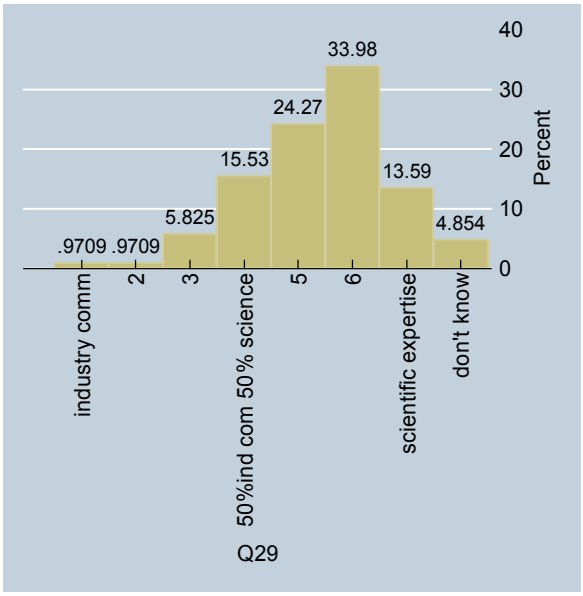


Valid Cases = 97
Minimum = 1
Maximum = 7
Mean = 5.00
Median = 5
Variance (Unbiased) = 1.79
Standard Deviation (Unbiased) = 1.34
Standard Error Of The Mean = 0.14
95 Percent Confidence Interval Around The Mean = 4.73 - 5.27
99 Percent Confidence Interval Around The Mean = 4.65 - 5.35

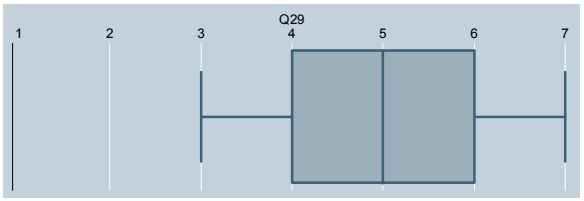


29. In making policy decisions about *mitigation* of climate change, priority should be given to

Valid Cases = 103 Missing Cases = 34
Response Percent = 75.2%

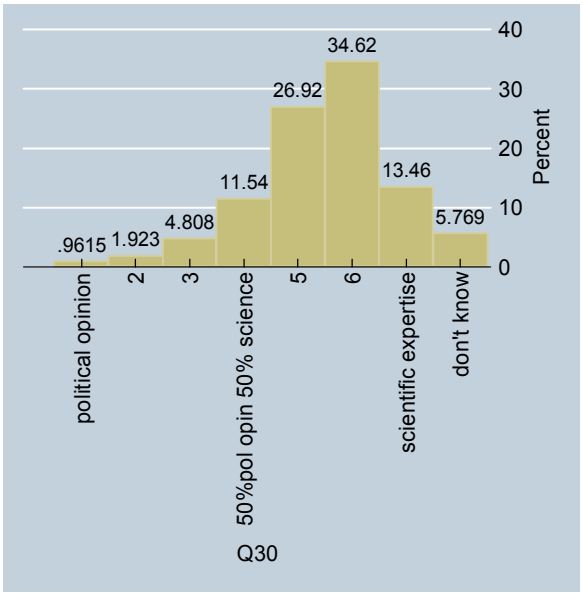


Valid Cases = 98
Minimum = 1
Maximum = 7
Mean = 5.29
Median = 5.50
Variance (Unbiased) = 1.53
Standard Deviation (Unbiased) = 1.24
Standard Error Of The Mean = 0.12
95 Percent Confidence Interval Around The Mean = 5.04 - 5.53
99 Percent Confidence Interval Around The Mean = 4.96 - 5.61

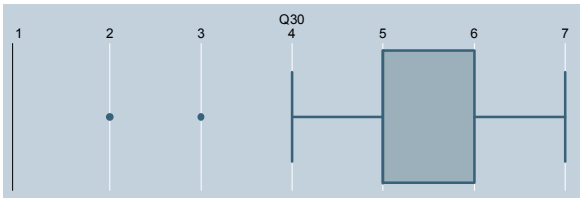


30. In making policy decisions about *mitigation* of climate change, priority should be given to

Valid Cases = 104 Missing Cases = 33
Response Percent = 75.9%

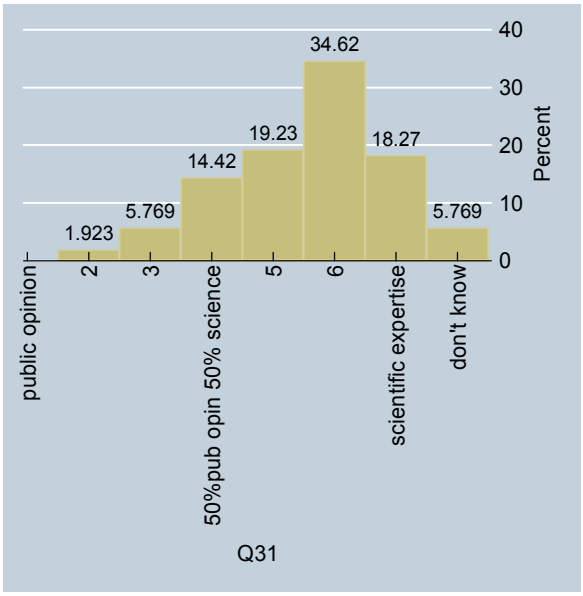


Valid Cases = 98
Minimum = 1
Maximum = 7
Mean = 5.33
Median = 6
Variance (Unbiased) = 1.52
Standard Deviation (Unbiased) = 1.23
Standard Error Of The Mean = 0.12
95 Percent Confidence Interval Around The Mean = 5.08 - 5.57
99 Percent Confidence Interval Around The Mean = 5.01 - 5.65

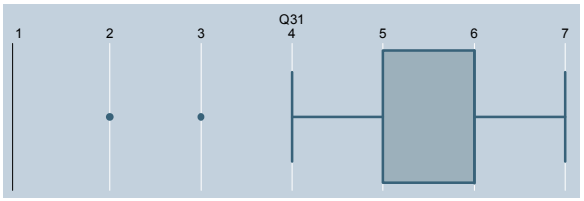


31. In making policy decisions about *mitigation* of climate change, priority should be given to

Valid Cases = 104 Missing Cases = 33
Response Percent = 75.9%

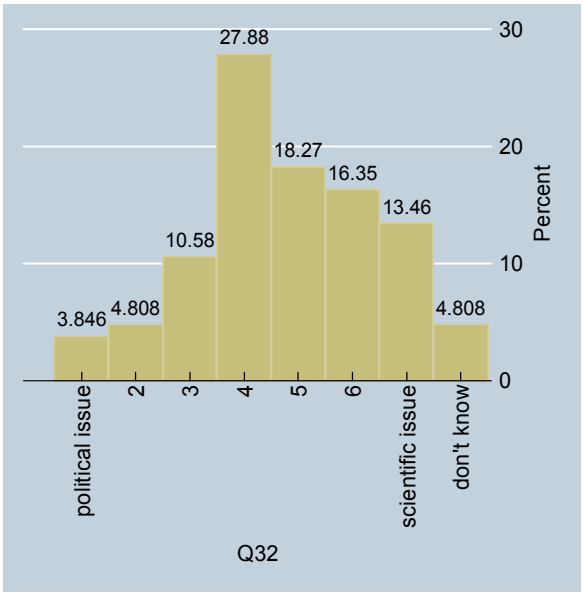


Valid Cases = 98
Minimum = 2
Maximum = 7
Mean = 5.42
Median = 6
Variance (Unbiased) = 1.57
Standard Deviation (Unbiased) = 1.25
Standard Error Of The Mean = 0.13
95 Percent Confidence Interval Around The Mean = 5.17 - 5.67
99 Percent Confidence Interval Around The Mean = 5.09 - 5.74

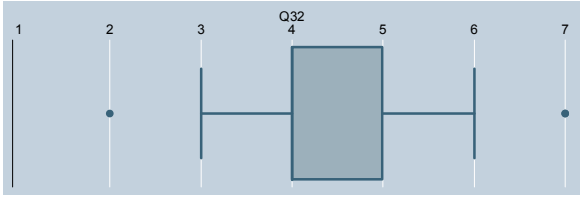


32. Given our current state of knowledge, regional climate change should be considered a

Valid Cases = 104
Missing Cases = 33
Response Percent = 75.9%



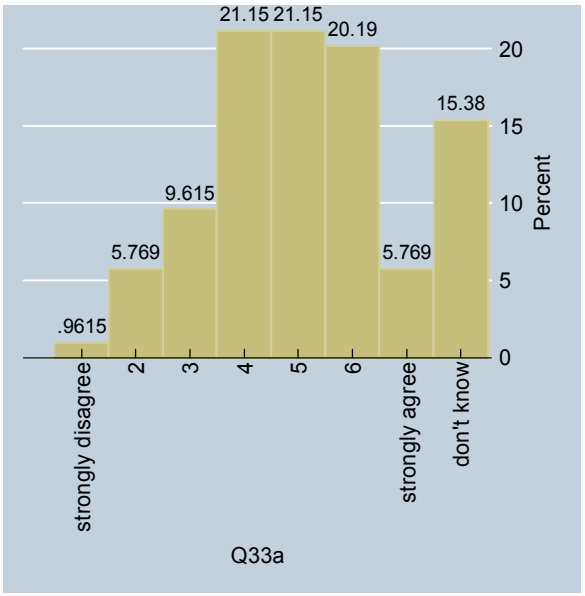
Valid Cases = 99
Minimum = 1
Maximum = 7
Mean = 4.63
Median = 5
Variance (Unbiased) = 2.46
Standard Deviation (Unbiased) = 1.57
Standard Error Of The Mean = 0.16
95 Percent Confidence Interval Around The Mean = 4.32 - 4.94
99 Percent Confidence Interval Around The Mean = 4.22 - 5.03



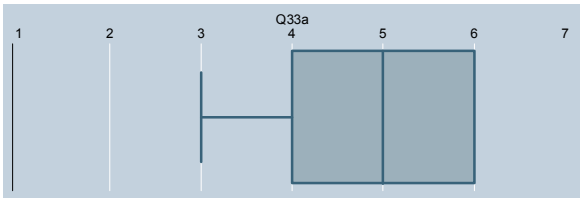
Section 1. i The state of the science

33a. The current state of knowledge of climate in the Baltic Sea region is developed well enough to allow for a reasonable *assessment of the changes* resulting from regional atmospheric circulation

Valid Cases = 104 Missing Cases = 33
Response Percent = 75.9%

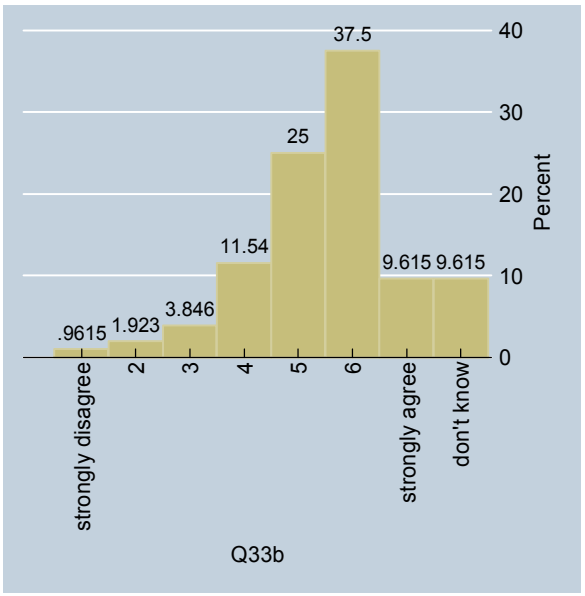


Valid Cases = 88
Minimum = 1
Maximum = 7
Mean = 4.65
Median = 5
Variance (Unbiased) = 1.91
Standard Deviation (Unbiased) = 1.38
Standard Error Of The Mean = 0.15
95 Percent Confidence Interval Around The Mean = 4.36 - 4.94
99 Percent Confidence Interval Around The Mean = 4.27 - 5.03

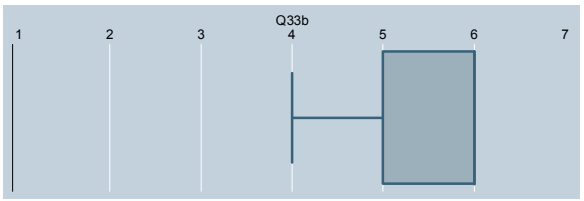


33b. The current state of knowledge of climate in the Baltic Sea region is developed well enough to allow for a reasonable *assessment of the changes* resulting from surface air temperature

Valid Cases = 104 Missing Cases = 33
Response Percent = 75.9%

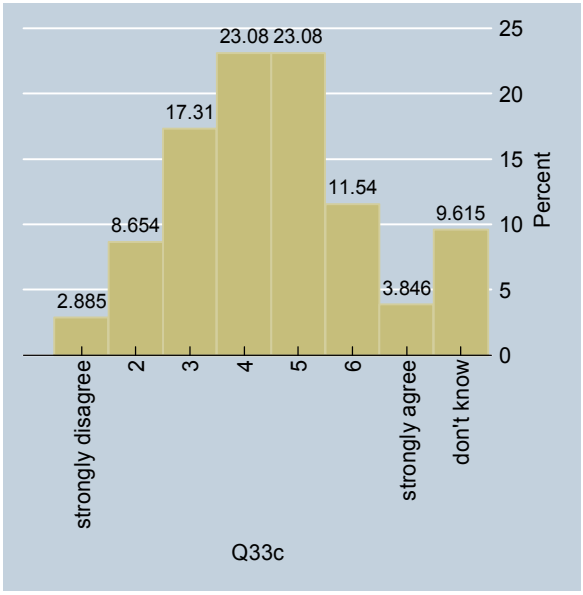


Valid Cases = 94
Minimum = 1
Maximum = 7
Mean = 5.31
Median = 6
Variance (Unbiased) = 1.42
Standard Deviation (Unbiased) = 1.19
Standard Error Of The Mean = 0.12
95 Percent Confidence Interval Around The Mean = 5.07 - 5.55
99 Percent Confidence Interval Around The Mean = 4.99 - 5.62

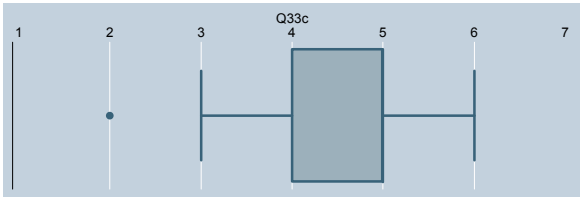


33c. The current state of knowledge of climate in the Baltic Sea region is developed well enough to allow for a reasonable *assessment of the changes* resulting from precipitation

Valid Cases = 104 Missing Cases = 33
Response Percent = 75.9%

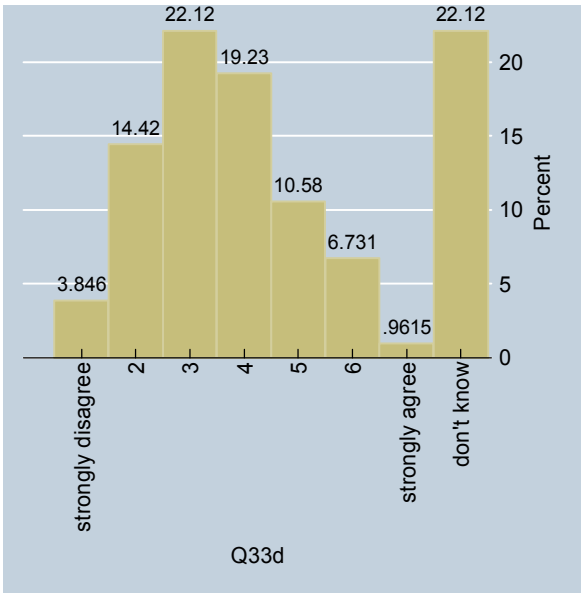


Valid Cases = 94
Minimum = 1
Maximum = 7
Mean = 4.16
Median = 4
Variance (Unbiased) = 2.01
Standard Deviation (Unbiased) = 1.42
Standard Error Of The Mean = 0.15
95 Percent Confidence Interval Around The Mean = 3.87 - 4.45
99 Percent Confidence Interval Around The Mean = 3.78 - 4.54

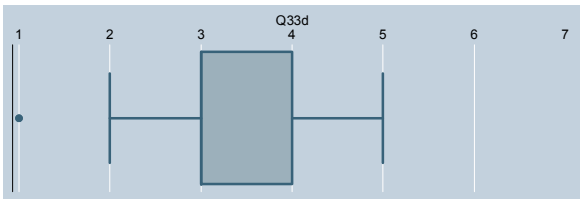


33d. The current state of knowledge of climate in the Baltic Sea region is developed well enough to allow for a reasonable *assessment of the changes* resulting from cloud meteorology

Valid Cases = 104 Missing Cases = 33
Response Percent = 75.9%

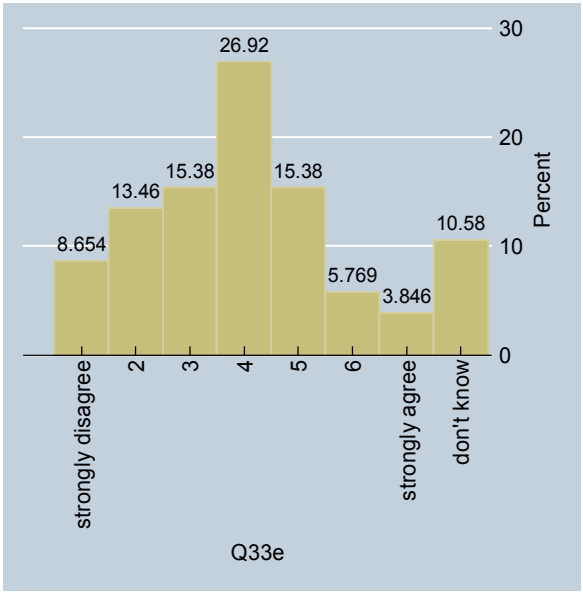


Valid Cases = 81
Minimum = 1
Maximum = 7
Mean = 3.54
Median = 3
Variance (Unbiased) = 1.88
Standard Deviation (Unbiased) = 1.37
Standard Error Of The Mean = 0.15
95 Percent Confidence Interval Around The Mean = 3.24 - 3.84
99 Percent Confidence Interval Around The Mean = 3.15 - 3.94

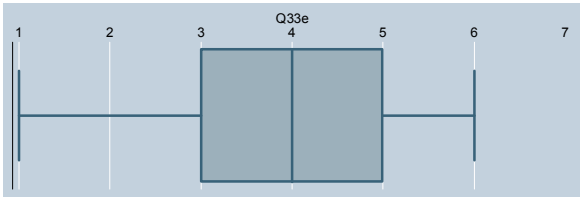


33e. The current state of knowledge of climate in the Baltic Sea region is developed well enough to allow for a reasonable *assessment of the changes* resulting from extreme events

Valid Cases = 104 Missing Cases = 33
Response Percent = 75.9%

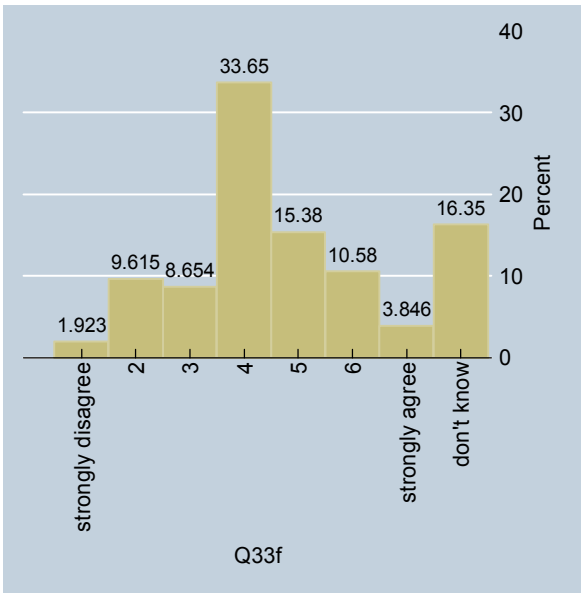


Valid Cases = 93
Minimum = 1
Maximum = 7
Mean = 3.67
Median = 4
Variance (Unbiased) = 2.38
Standard Deviation (Unbiased) = 1.54
Standard Error Of The Mean = 0.16
95 Percent Confidence Interval Around The Mean = 3.35 - 3.98
99 Percent Confidence Interval Around The Mean = 3.26 - 4.08

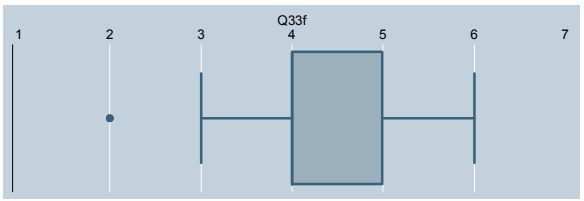


33f. The current state of knowledge of climate in the Baltic Sea region is developed well enough to allow for a reasonable *assessment of the changes* resulting from water regimes

Valid Cases = 104 Missing Cases = 33
Response Percent = 75.9%

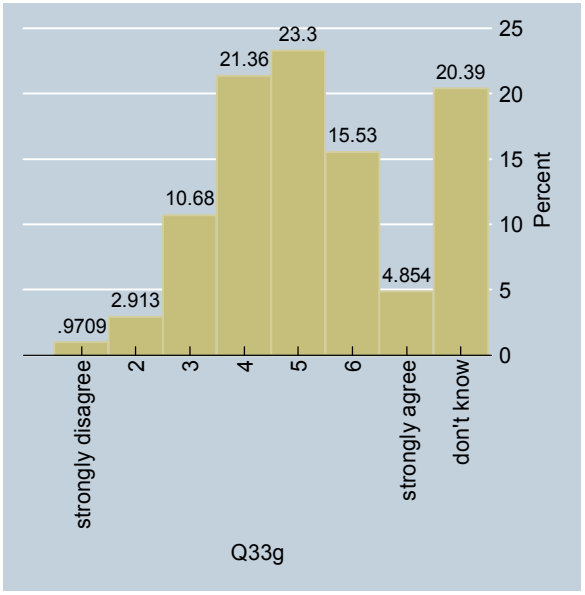


Valid Cases = 87
Minimum = 1
Maximum = 7
Mean = 4.17
Median = 4
Variance (Unbiased) = 1.87
Standard Deviation (Unbiased) = 1.37
Standard Error Of The Mean = 0.15
95 Percent Confidence Interval Around The Mean = 3.89 - 4.46
99 Percent Confidence Interval Around The Mean = 3.80 - 4.55

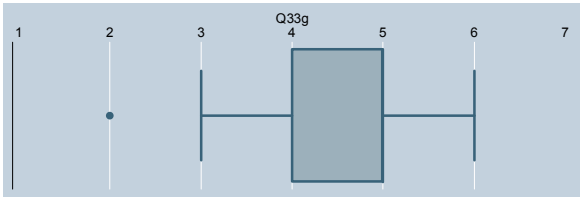


33g. The current state of knowledge of climate in the Baltic Sea region is developed well enough to allow for a reasonable *assessment of the changes* resulting from ice regimes

Valid Cases = 103 Missing Cases = 34
Response Percent = 75.2%

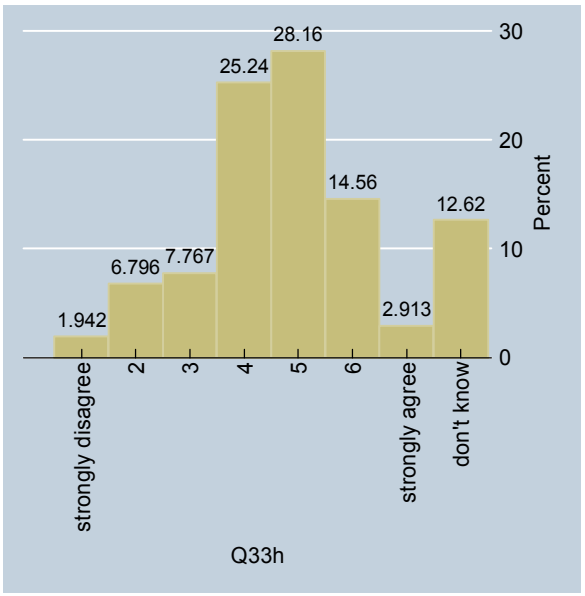


Valid Cases = 82
Minimum = 1
Maximum = 7
Mean = 4.62
Median = 5
Variance (Unbiased) = 1.65
Standard Deviation (Unbiased) = 1.28
Standard Error Of The Mean = 0.14
95 Percent Confidence Interval Around The Mean = 4.34 - 4.90
99 Percent Confidence Interval Around The Mean = 4.26 - 4.99

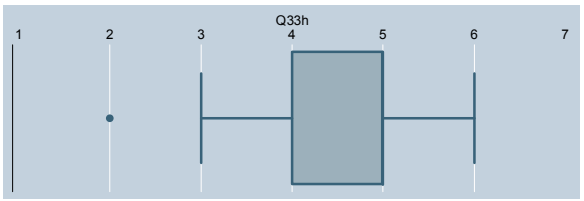


33h. The current state of knowledge of climate in the Baltic Sea region is developed well enough to allow for a reasonable *assessment of the changes* resulting from snow cover

Valid Cases = 103 Missing Cases = 34
Response Percent = 75.2%

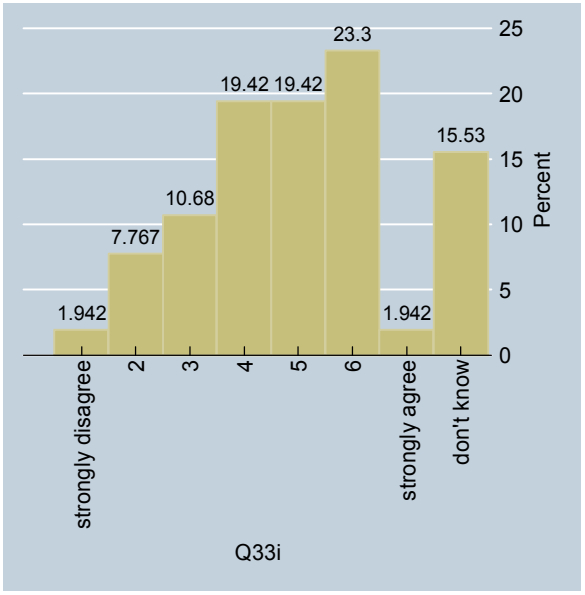


Valid Cases = 90
Minimum = 1
Maximum = 7
Mean = 4.44
Median = 5
Variance (Unbiased) = 1.71
Standard Deviation (Unbiased) = 1.31
Standard Error Of The Mean = 0.14
95 Percent Confidence Interval Around The Mean = 4.17 - 4.71
99 Percent Confidence Interval Around The Mean = 4.09 - 4.80

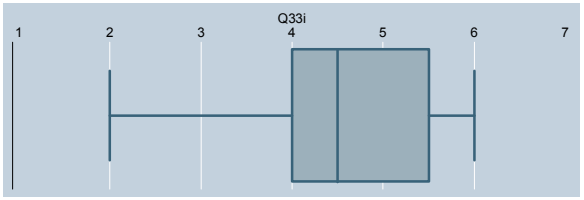


33i. The current state of knowledge of climate in the Baltic Sea region is developed well enough to allow for a reasonable *assessment of the changes* resulting from sea level

Valid Cases = 103 Missing Cases = 34
Response Percent = 75.2%

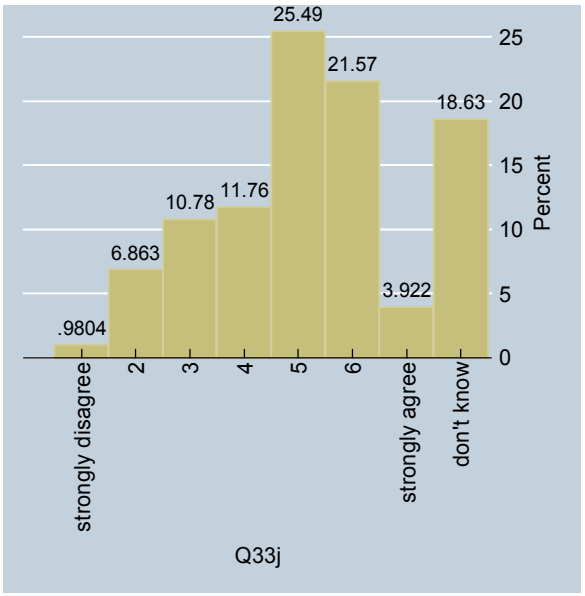


Valid Cases = 87
Minimum = 1
Maximum = 7
Mean = 4.47
Median = 5
Variance (Unbiased) = 2.04
Standard Deviation (Unbiased) = 1.43
Standard Error Of The Mean = 0.15
95 Percent Confidence Interval Around The Mean = 4.17 - 4.77
99 Percent Confidence Interval Around The Mean = 4.08 - 4.87

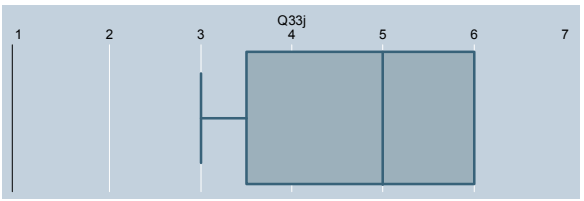


33j. The current state of knowledge of climate in the Baltic Sea region is developed well enough to allow for a reasonable *assessment of the changes* resulting from sea ice

Valid Cases = 102 Missing Cases = 35
Response Percent = 74.5%

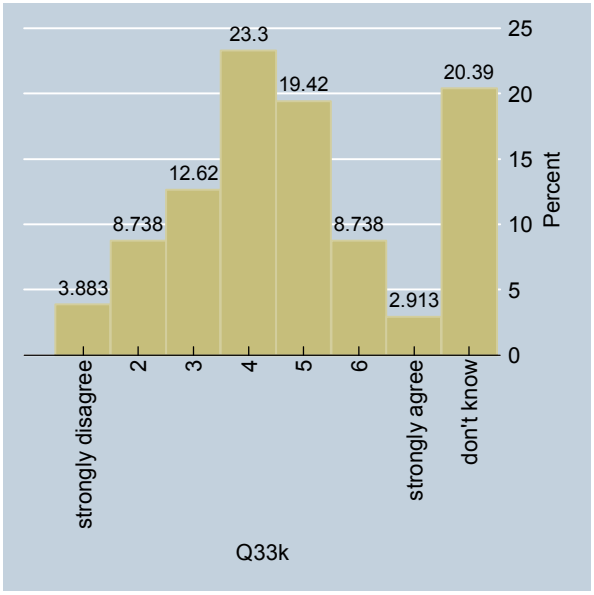


Valid Cases = 83
Minimum = 1
Maximum = 7
Mean = 4.65
Median = 5
Variance (Unbiased) = 1.99
Standard Deviation (Unbiased) = 1.41
Standard Error Of The Mean = 0.15
95 Percent Confidence Interval Around The Mean = 4.35 - 4.95
99 Percent Confidence Interval Around The Mean = 4.25 - 5.05

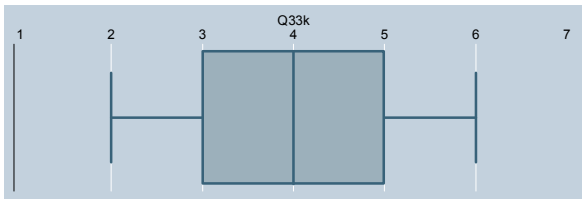


33k. The current state of knowledge of climate in the Baltic Sea region is developed well enough to allow for a reasonable *assessment of the changes* resulting from coastal erosion

Valid Cases = 103 Missing Cases = 34
Response Percent = 75.2%

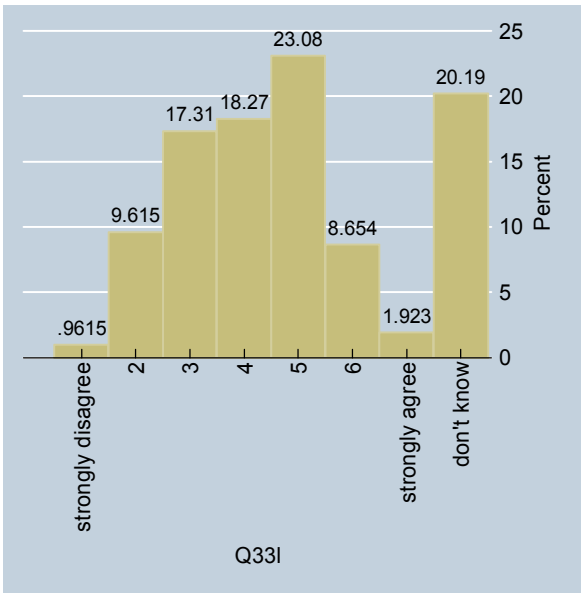


Valid Cases = 82
Minimum = 1
Maximum = 7
Mean = 4.05
Median = 4
Variance (Unbiased) = 2.07
Standard Deviation (Unbiased) = 1.44
Standard Error Of The Mean = 0.16
95 Percent Confidence Interval Around The Mean = 3.74 - 4.36
99 Percent Confidence Interval Around The Mean = 3.64 - 4.46

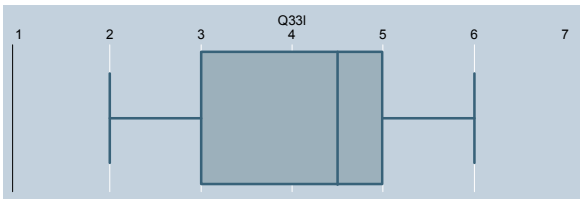


33l. The current state of knowledge of climate in the Baltic Sea region is developed well enough to allow for a reasonable *assessment of the changes* resulting from wind waves

Valid Cases = 104 Missing Cases = 3
Response Percent = 75.9%

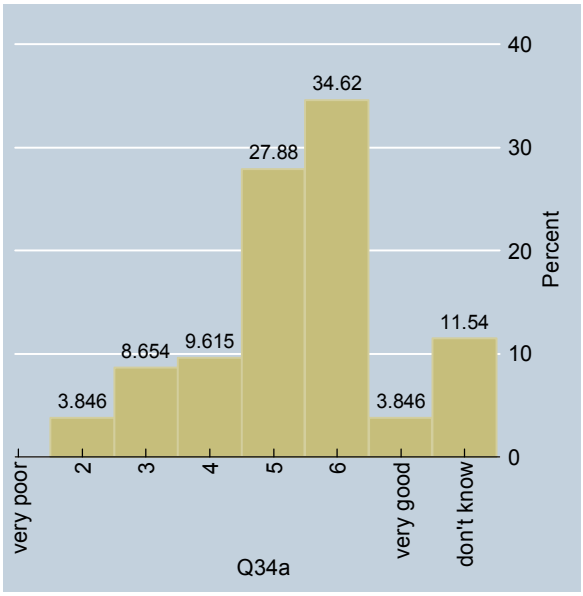


Valid Cases = 83
Minimum = 1
Maximum = 7
Mean = 4.08
Median = 4
Variance (Unbiased) = 1.76
Standard Deviation (Unbiased) = 1.33
Standard Error Of The Mean = 0.15
95 Percent Confidence Interval Around The Mean = 3.80 - 4.37
99 Percent Confidence Interval Around The Mean = 3.71 - 4.46

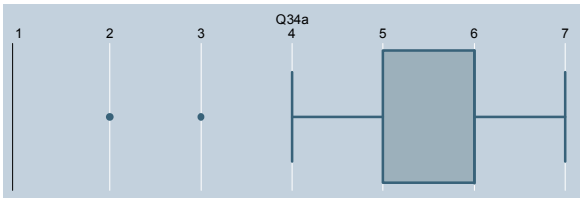


34a. How would YOU rate the ability of Baltic regional climate models to reproduce temperature observation?

Valid Cases = 104 Missing Cases = 33
Response Percent = 75.9%

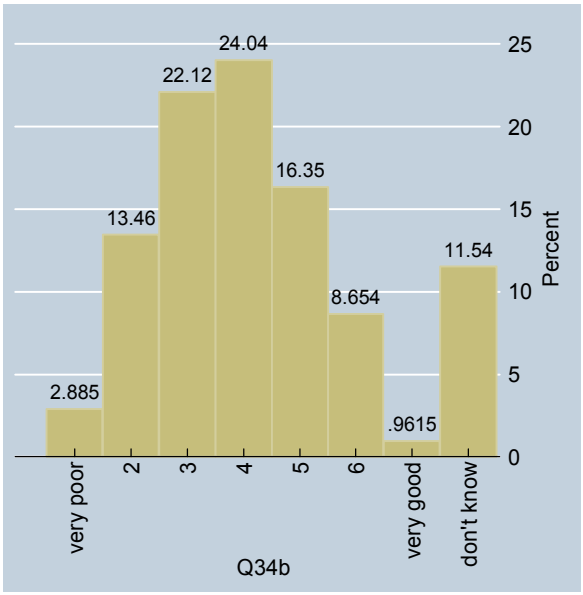


Valid Cases = 92
Minimum = 2
Maximum = 7
Mean = 5.04
Median = 5
Variance (Unbiased) = 1.47
Standard Deviation (Unbiased) = 1.21
Standard Error Of The Mean = 0.13
95 Percent Confidence Interval Around The Mean = 4.80 - 5.29
99 Percent Confidence Interval Around The Mean = 4.72 - 5.37

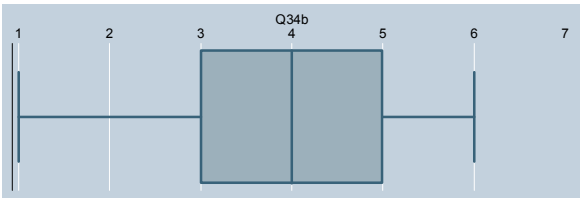


34b. How would YOU rate the ability of Baltic regional climate models to reproduce precipitation observation?

Valid Cases = 104 Missing Cases = 33
Response Percent = 75.9%

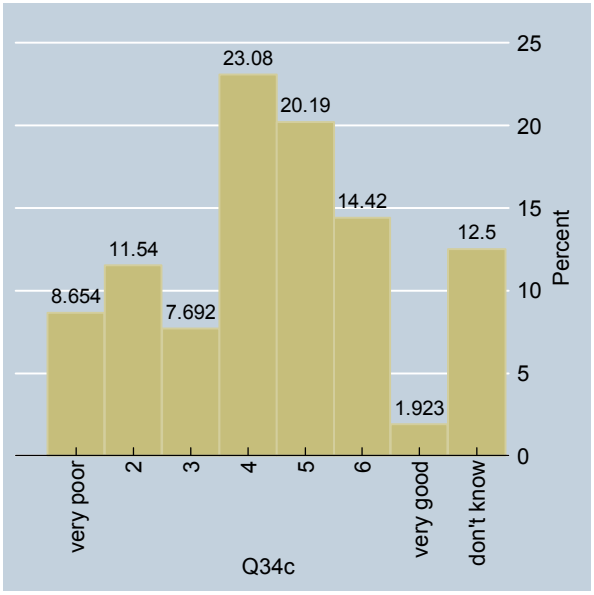


Valid Cases = 92
Minimum = 1
Maximum = 7
Mean = 3.76
Median = 4
Variance (Unbiased) = 1.79
Standard Deviation (Unbiased) = 1.34
Standard Error Of The Mean = 0.14
95 Percent Confidence Interval Around The Mean = 3.49 - 4.03
99 Percent Confidence Interval Around The Mean = 3.40 - 4.12

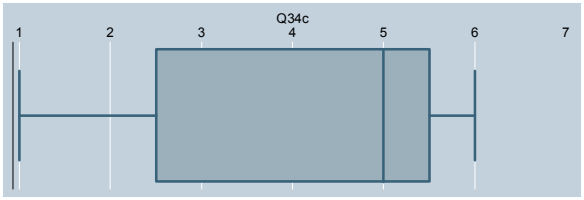


34c. How would YOU rate the ability of Baltic regional climate models to reproduce temperature values for the next ten years?

Valid Cases = 104 Missing Cases = 33
Response Percent = 75.9

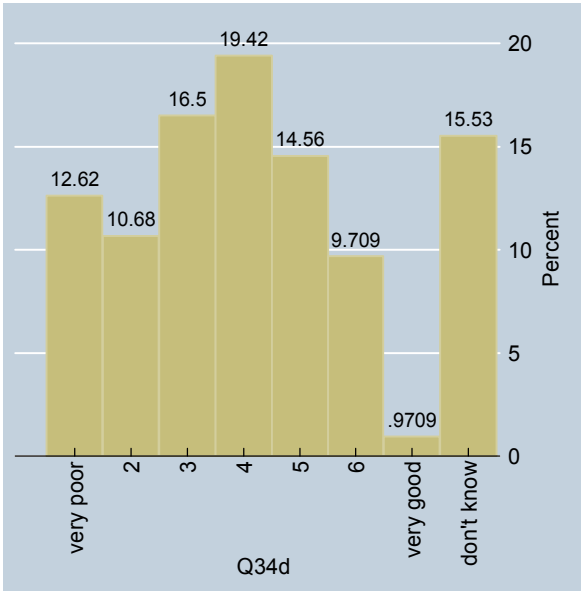


Valid Cases = 91
Minimum = 1
Maximum = 7
Mean = 3.98
Median = 4
Variance (Unbiased) = 2.62
Standard Deviation (Unbiased) = 1.62
Standard Error Of The Mean = 0.17
95 Percent Confidence Interval Around The Mean = 3.65 - 4.31
99 Percent Confidence Interval Around The Mean = 3.54 - 4.42

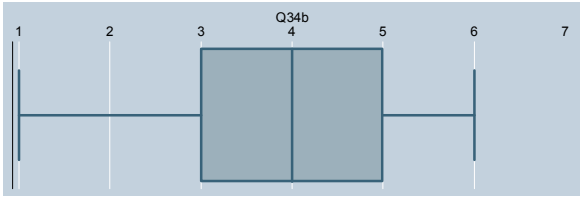


34d. How would YOU rate the ability of Baltic regional climate models to reproduce temperature values for the next 50 years?

Valid Cases = 103 Missing Cases = 34
Response Percent = 75.2%

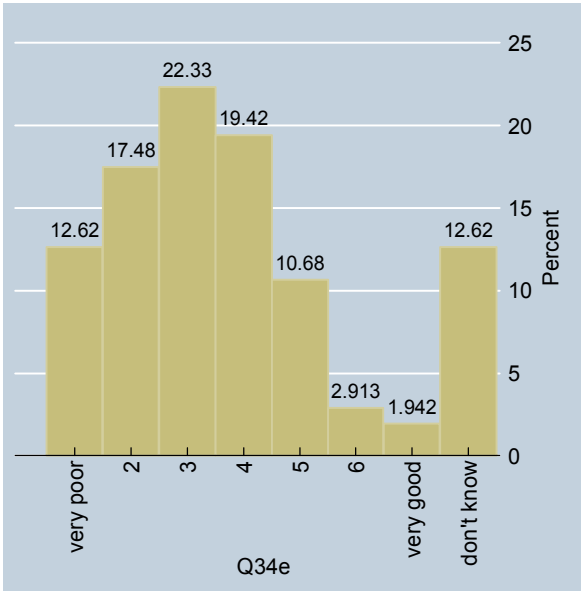


Valid Cases = 87
Minimum = 1
Maximum = 7
Mean = 3.54
Median = 4
Variance (Unbiased) = 2.60
Standard Deviation (Unbiased) = 1.61
Standard Error Of The Mean = 0.17
95 Percent Confidence Interval Around The Mean = 3.20 - 3.88
99 Percent Confidence Interval Around The Mean = 3.10 - 3.99

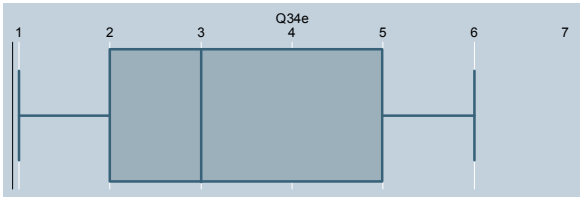


34e. How would YOU rate the ability of Baltic regional climate models to reproduce precipitation for the next 10 years?

Valid Cases = 103 Missing Cases = 34
Response Percent = 75.2%

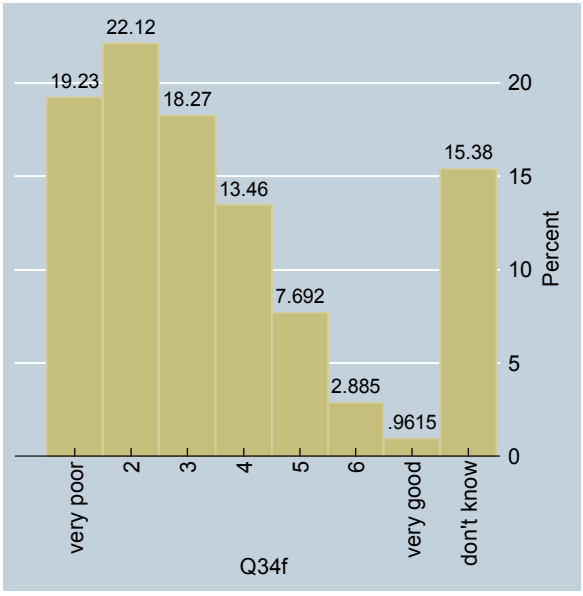


Valid Cases = 90
Minimum = 1
Maximum = 7
Mean = 3.17
Median = 3
Variance (Unbiased) = 2.14
Standard Deviation (Unbiased) = 1.46
Standard Error Of The Mean = 0.15
95 Percent Confidence Interval Around The Mean = 2.86 - 3.47
99 Percent Confidence Interval Around The Mean = 2.77 - 3.56

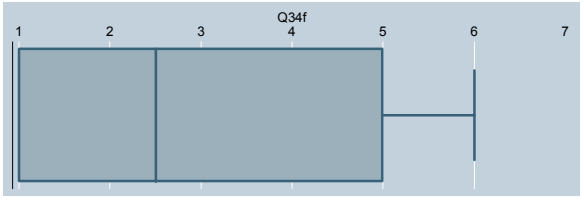


34f. How would YOU rate the ability of Baltic regional climate models to reproduce precipitation for the next 50 years?

Valid Cases = 104 Missing Cases = 33
Response Percent = 75.9%

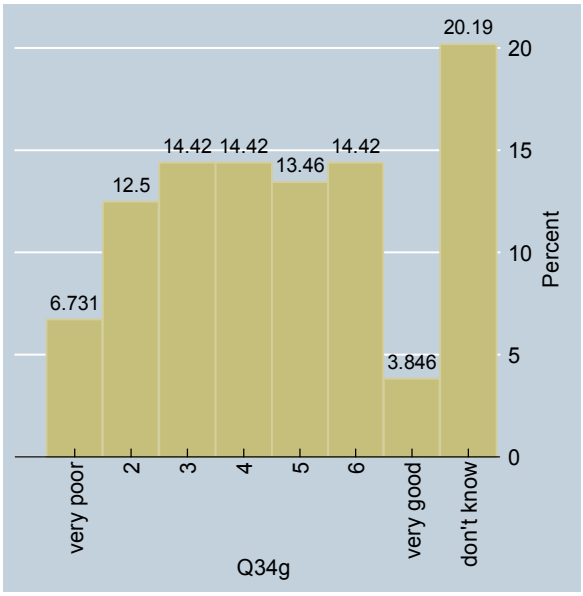


Valid Cases = 88
Minimum = 1
Maximum = 7
Mean = 2.77
Median = 3
Variance (Unbiased) = 2.15
Standard Deviation (Unbiased) = 1.47
Standard Error Of The Mean = 0.16
95 Percent Confidence Interval Around The Mean = 2.47 - 3.08
99 Percent Confidence Interval Around The Mean = 2.37 - 3.18

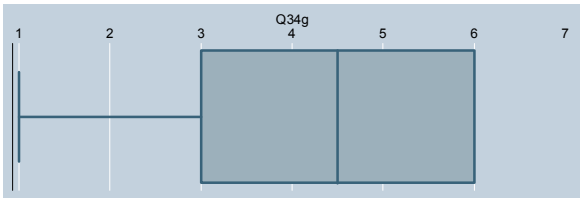


34g. How would YOU rate the ability of Baltic regional climate models to reproduce sea level for the next 10 years?

Valid Cases = 104 Missing Cases = 33
Response Percent = 75.9%

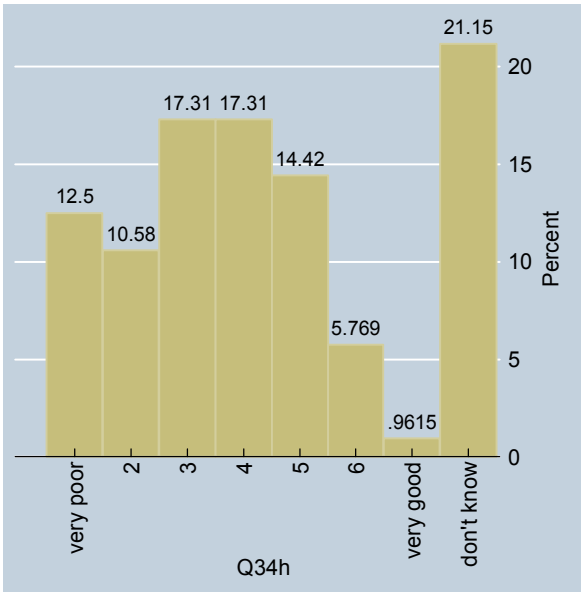


Valid Cases = 83
Minimum = 1
Maximum = 7
Mean = 3.93
Median = 4
Variance (Unbiased) = 2.92
Standard Deviation (Unbiased) = 1.71
Standard Error Of The Mean = 0.19
95 Percent Confidence Interval Around The Mean = 3.56 - 4.30
99 Percent Confidence Interval Around The Mean = 3.44 - 4.41

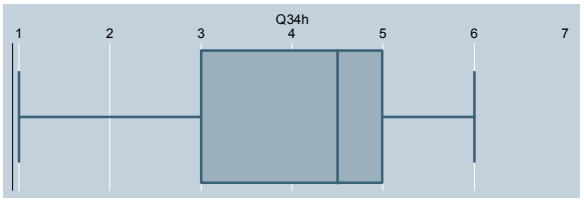


34h. How would YOU rate the ability of Baltic regional climate models to reproduce sea level for the next 50 years?

Valid Cases = 104 Missing Cases = 33
Response Percent = 75.9%

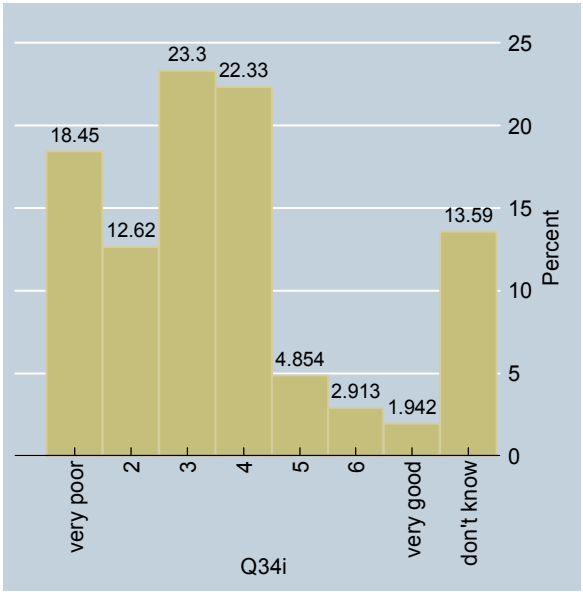


Valid Cases = 82
Minimum = 1
Maximum = 7
Mean = 3.40
Median = 3
Variance (Unbiased) = 2.44
Standard Deviation (Unbiased) = 1.56
Standard Error Of The Mean = 0.17
95 Percent Confidence Interval Around The Mean = 3.06 - 3.74
99 Percent Confidence Interval Around The Mean = 2.96 - 3.85

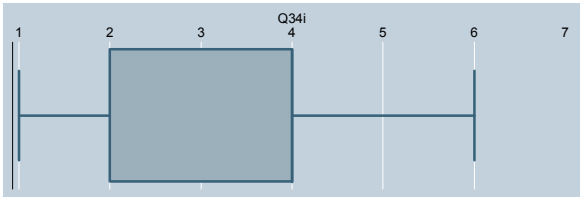


34i. How would YOU rate the ability of Baltic regional climate models to reproduce extreme events for the next 1o years?

Valid Cases = 103 Missing Cases = 34
Response Percent = 75.2%

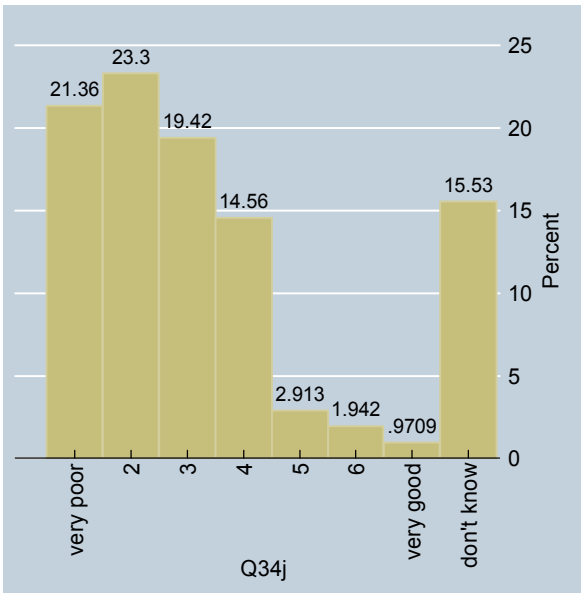


Valid Cases = 89
Minimum = 1
Maximum = 7
Mean = 2.99
Median = 3
Variance (Unbiased) = 2.17
Standard Deviation (Unbiased) = 1.47
Standard Error Of The Mean = 0.16
95 Percent Confidence Interval Around The Mean = 2.68 - 3.29
99 Percent Confidence Interval Around The Mean = 2.59 - 3.39

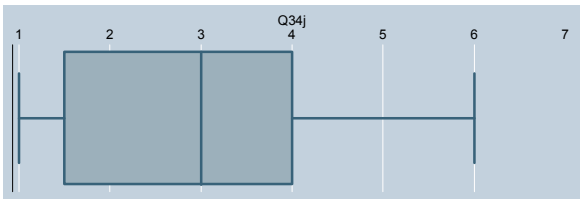


34j. How would YOU rate the ability of Baltic regional climate models to reproduce extreme events for the next 50 years?

Valid Cases = 103 Missing Cases = 34
Response Percent = 75.2%



Valid Cases = 87
Minimum = 1
Maximum = 7
Mean = 2.57
Median = 2
Variance (Unbiased) = 1.83
Standard Deviation (Unbiased) = 1.35
Standard Error Of The Mean = 0.14
95 Percent Confidence Interval Around The Mean = 2.29 - 2.86
99 Percent Confidence Interval Around The Mean = 2.20 - 2.95



Section 2. Assessment of the BACC Report: 'Assessment of Climate Change for the Baltic Sea Basin'

Section 2. a Participation and awareness

35. Are you aware of the BACC Report 'Assessment of Climate Change for the Baltic Sea basin?'

	Number	Percent
yes	78	74.3 %
no	27	25.7 %
Total	105	100.0 %

Missing Cases = 32
Response Percent = 76.6 %

The following set of responses refer only to the answers of the 78 who responded that they are aware of the BACC report.

36. Did you contribute to the BACC report as an author?

	Number	Percent
yes	26	33.8 %
no	51	66.2 %
Total	77	100.0 %

Missing Cases = 60
Response Percent = 56.2 %

37. Were you consulted for input (other than as an author) into the BACC Report?

	Number	Percent
yes	21	26.9 %
no	57	73.1 %
Total	78	100.0 %

Missing Cases = 59
Response Percent = 56.9 %

38. Did you contribute to the design (what should and should not be included) of the BACC Report?

	Number	Percent
yes	13	16.7 %
no	65	83.3 %
Total	78	100.0 %

Missing Cases = 59
Response Percent = 56.9 %

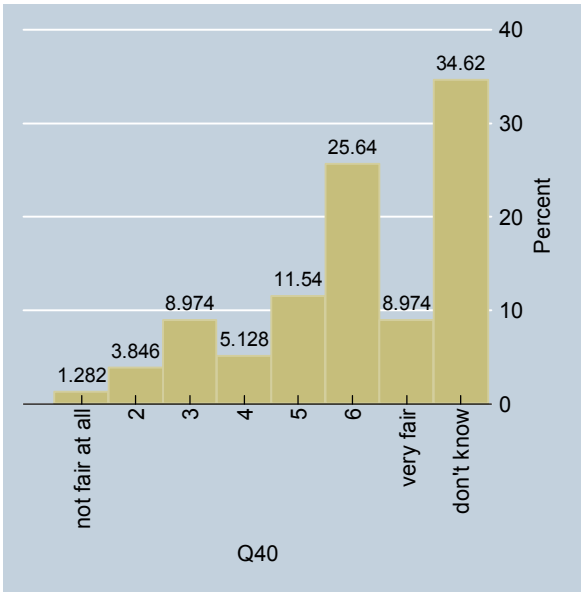
39. Do you think enough scientists were consulted for the construction of the report?

	Number	Percent
yes	47	63.5 %
no	27	36.5 %
Total	74	100.0 %

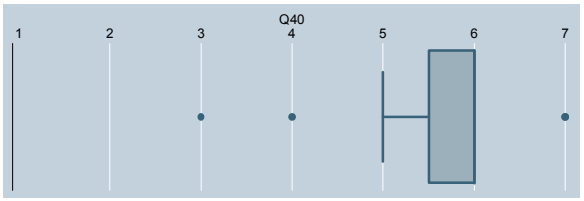
Missing Cases = 63
Response Percent = 54.0 %

40. How would rate the process of selection of the authors of the BACC report?

Valid Cases = 77 Missing Cases = 1
Response Percent = 98.7%

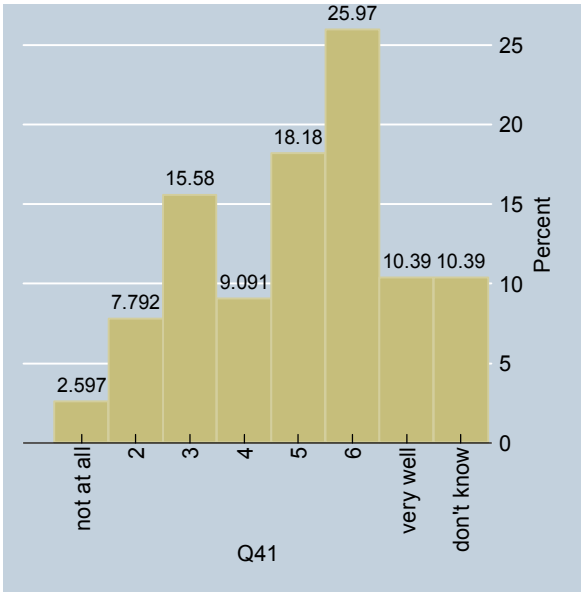


Valid Cases = 51
Minimum = 1
Maximum = 7
Mean = 5.06
Median = 6
Variance (Unbiased) = 2.46
Standard Deviation (Unbiased) = 1.57
Standard Error Of The Mean = 0.22
95 Percent Confidence Interval Around The Mean = 4.63 - 5.49
99 Percent Confidence Interval Around The Mean = 4.49 - 5.62

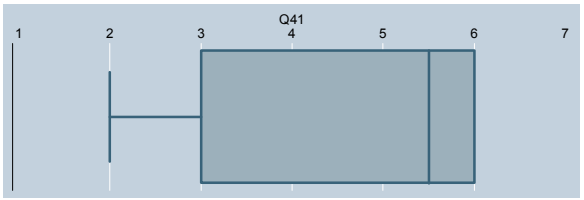


41. How well do you feel your area of expertise is represented in the BACC Report?

Valid Cases = 76 Missing Cases = 2
Response Percent = 97.4%

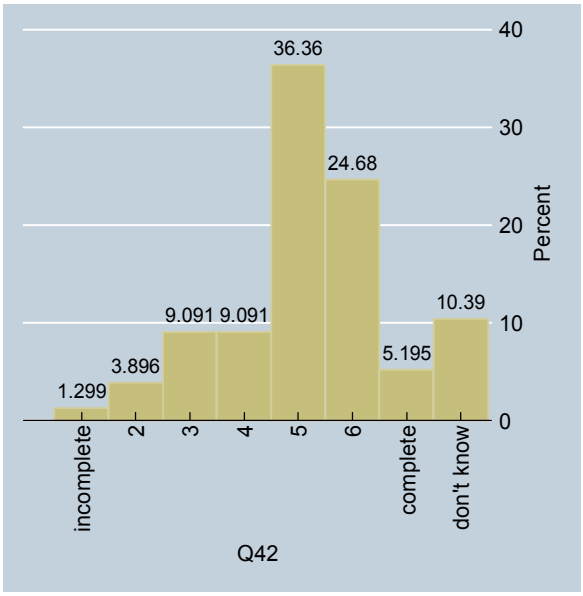


Valid Cases = 69
Minimum = 1
Maximum = 7
Mean = 4.70
Median = 5
Variance (Unbiased) = 2.74
Standard Deviation (Unbiased) = 1.66
Standard Error Of The Mean = 0.20
95 Percent Confidence Interval Around The Mean = 4.30 - 5.09
99 Percent Confidence Interval Around The Mean = 4.18 - 5.21

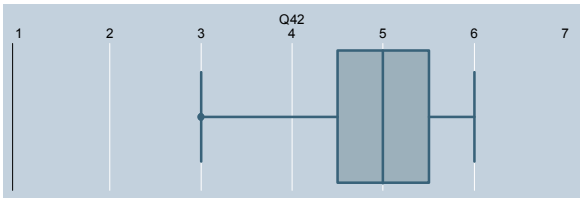


42. In your opinion, the BACC report is

Valid Cases = 76 Missing Cases = 2
Response Percent = 97.4%

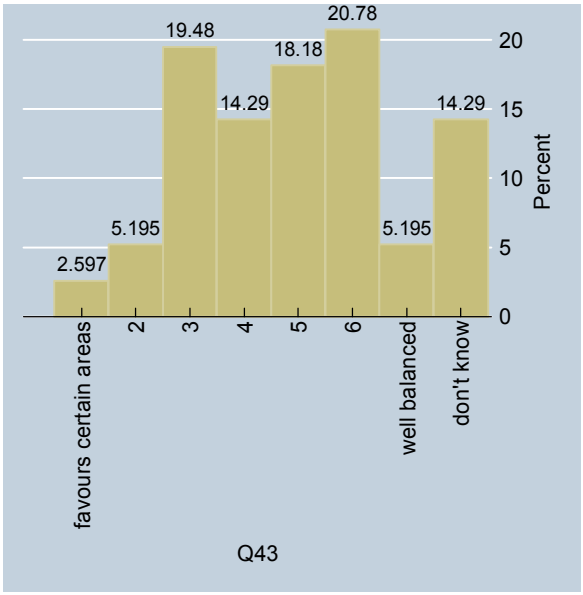


Valid Cases = 69
Minimum = 1
Maximum = 7
Mean = 4.90
Median = 5
Variance (Unbiased) = 1.65
Standard Deviation (Unbiased) = 1.29
Standard Error Of The Mean = 0.15
95 Percent Confidence Interval Around The Mean = 4.60 - 5.20
99 Percent Confidence Interval Around The Mean = 4.50 - 5.30

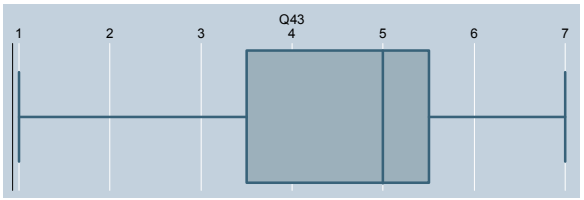


43. In your opinion, the presentation of the material in the BACC report

Valid Cases = 76 Missing Cases = 2
Response Percent = 97.4%

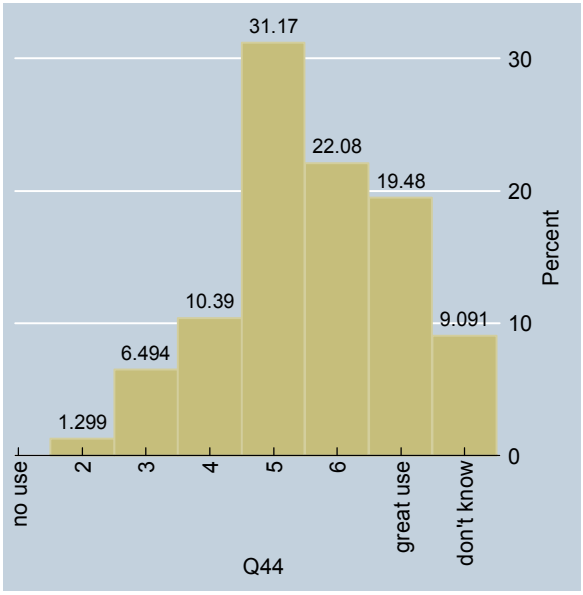


Valid Cases = 66
Minimum = 1
Maximum = 7
Mean = 4.44
Median = 5
Variance (Unbiased) = 2.31
Standard Deviation (Unbiased) = 1.52
Standard Error Of The Mean = 0.19
95 Percent Confidence Interval Around The Mean = 4.07 - 4.81
99 Percent Confidence Interval Around The Mean = 3.96 - 4.92

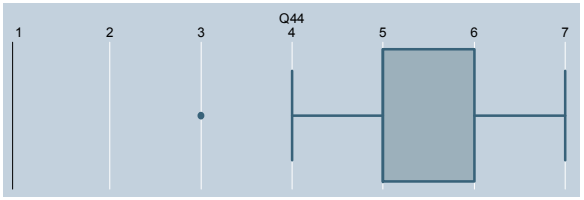


44. Of how much use is the BACC report for the advancement of regional climate change assessments for the Baltic Sea regions?

Valid Cases = 76 Missing Cases = 2
Response Percent = 97.4%

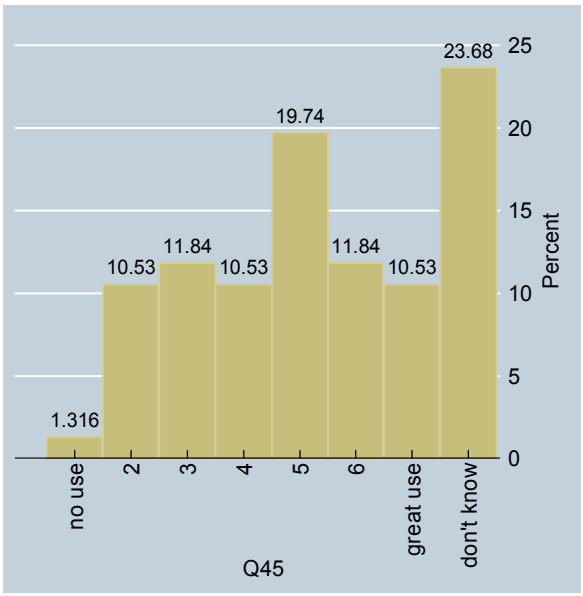


Valid Cases = 70
Minimum = 2
Maximum = 7
Mean = 5.37
Median = 5
Variance (Unbiased) = 1.51
Standard Deviation (Unbiased) = 1.23
Standard Error Of The Mean = 0.15
95 Percent Confidence Interval Around The Mean = 5.08 - 5.66
99 Percent Confidence Interval Around The Mean = 4.99 - 5.75

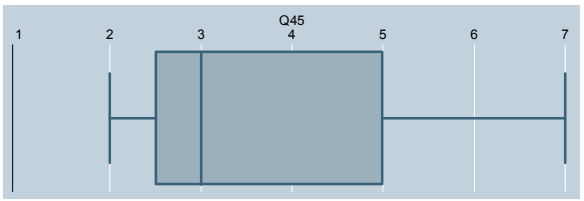


45. Of how much use is the BACC report for the advancement of regional sea lever assessments for the Baltic Sea regions?

Valid Cases = 75 Missing Cases = 3
Response Percent = 96.2%



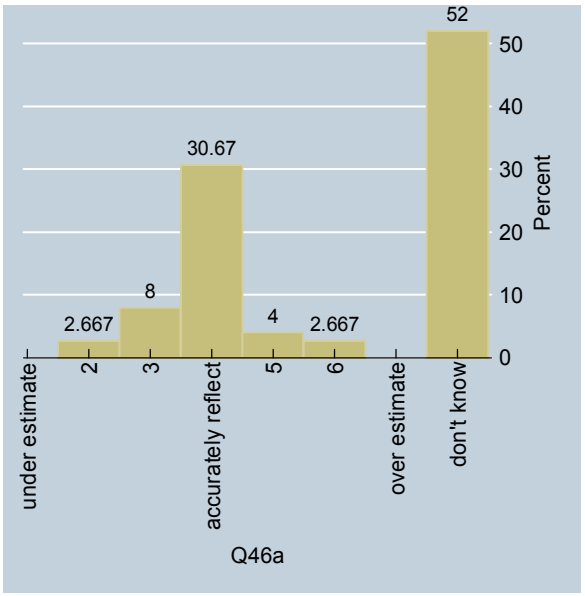
Valid Cases = 58
Minimum = 1
Maximum = 7
Mean = 4.50
Median = 5
Variance (Unbiased) = 2.78
Standard Deviation (Unbiased) = 1.67
Standard Error Of The Mean = 0.22
95 Percent Confidence Interval Around The Mean = 4.07 - 4.93
99 Percent Confidence Interval Around The Mean = 3.94 - 5.06



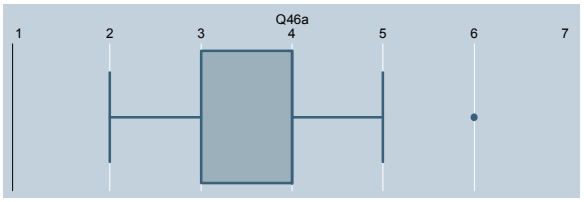
Section 2. b Assessment of results

46a. In YOUR opinion, the BACC Report tends to under estimate, accurately reflect (a value of 4) or overestimate the magnitude of future changes to atmospheric circulation?

Valid Cases = 74 Missing Cases = 4
Response Percent = 94.9%

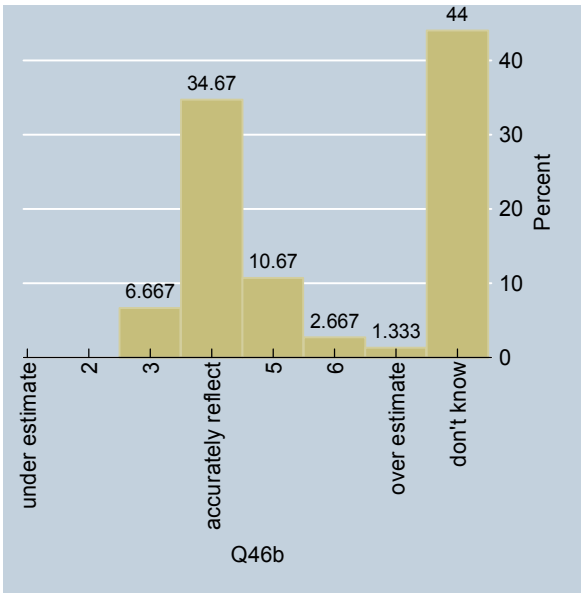


Valid Cases = 36
Minimum = 2
Maximum = 6
Mean = 3.92
Median = 4
Variance (Unbiased) = 0.71
Standard Deviation (Unbiased) = 0.84
Standard Error Of The Mean = 0.14
95 Percent Confidence Interval Around The Mean = 3.64 - 4.19
99 Percent Confidence Interval Around The Mean = 3.56 - 4.28

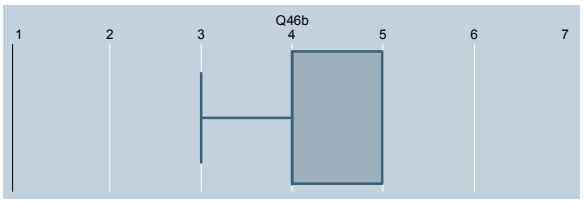


46b. In YOUR opinion, the BACC Report tends to under estimate, accurately reflect (a value of 4) or overestimate the magnitude of future changes to surface air temperature?

Valid Cases = 74 Missing Cases = 4
Response Percent = 94.9%

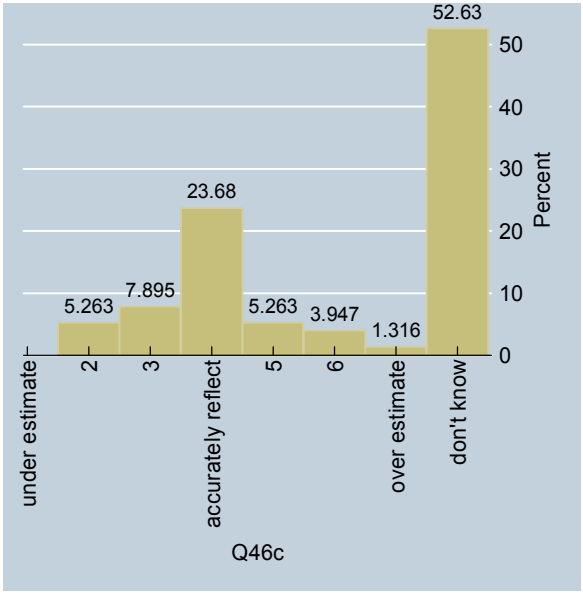


Valid Cases = 42
Minimum = 3
Maximum = 7
Mean = 4.24
Median = 4
Variance (Unbiased) = 0.67
Standard Deviation (Unbiased) = 0.82
Standard Error Of The Mean = 0.13
95 Percent Confidence Interval Around The Mean = 3.99 - 4.49
99 Percent Confidence Interval Around The Mean = 3.91 - 4.56

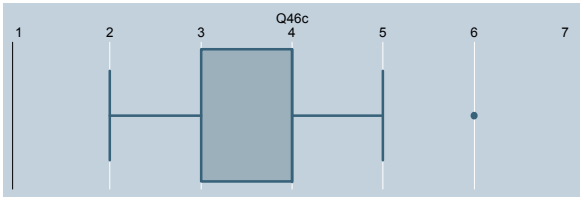


46c. In YOUR opinion, the BACC Report tends to under estimate, accurately reflect (a value of 4) or overestimate the magnitude of future changes to precipitation?

Valid Cases = 75 Missing Cases = 3
Response Percent = 96.2%

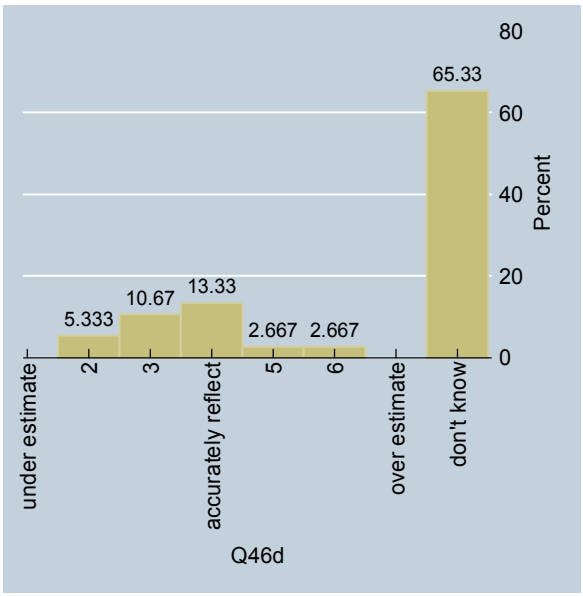


Valid Cases = 36
Minimum = 2
Maximum = 7
Mean = 3.97
Median = 4
Variance (Unbiased) = 1.34
Standard Deviation (Unbiased) = 1.16
Standard Error Of The Mean = 0.19
95 Percent Confidence Interval Around The Mean = 3.59 - 4.35
99 Percent Confidence Interval Around The Mean = 3.48 - 4.47

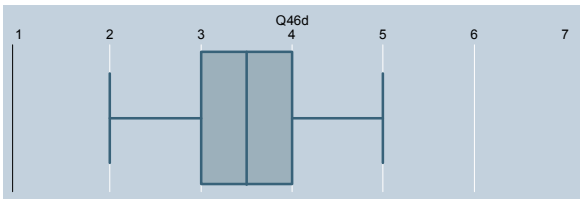


46d. In YOUR opinion, the BACC Report tends to under estimate, accurately reflect (a value of 4) or overestimate the magnitude of future changes to clouds?

Valid Cases = 74 Missing Cases = 4
Response Percent = 94.9%

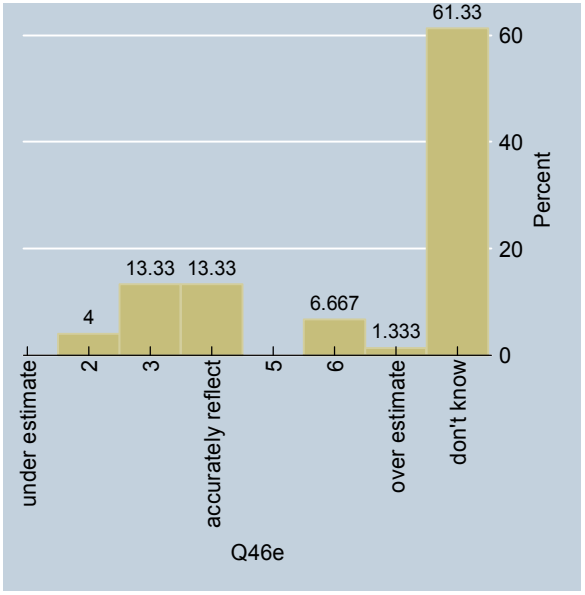


Valid Cases = 26
Minimum = 2
Maximum = 6
Mean = 3.62
Median = 4
Variance (Unbiased) = 1.21
Standard Deviation (Unbiased) = 1.10
Standard Error Of The Mean = 0.22
95 Percent Confidence Interval Around The Mean = 3.19 - 4.04
99 Percent Confidence Interval Around The Mean = 3.06 - 4.17

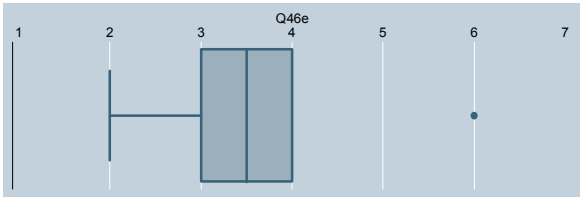


46e. In YOUR opinion, the BACC Report tends to under estimate, accurately reflect (a value of 4) or overestimate the magnitude of future changes to extreme events?

Valid Cases = 74 Missing Cases = 4
Response Percent = 94.9%

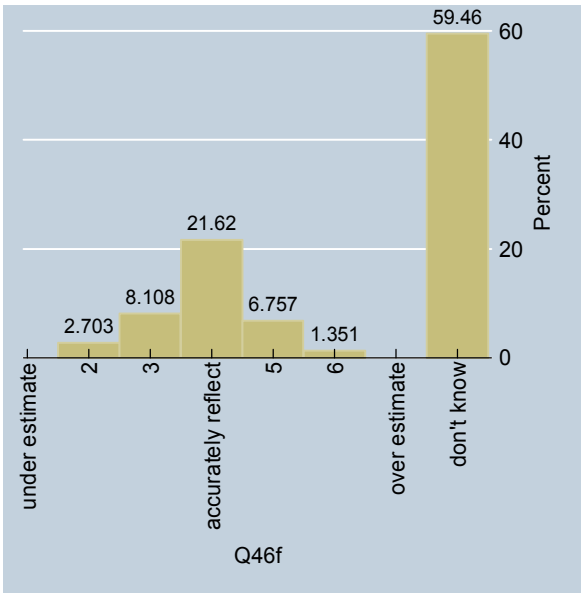


Valid Cases = 29
Minimum = 2
Maximum = 7
Mean = 3.90
Median = 4
Variance (Unbiased) = 1.81
Standard Deviation (Unbiased) = 1.35
Standard Error Of The Mean = 0.25
95 Percent Confidence Interval Around The Mean = 3.41 - 4.39
99 Percent Confidence Interval Around The Mean = 3.25 - 4.54

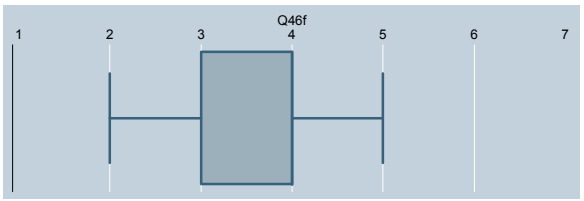


46f. In YOUR opinion, the BACC Report tends to under estimate, accurately reflect (a value of 4) or overestimate the magnitude of future changes to the water regime?

Valid Cases = 73 Missing Cases = 5
Response Percent = 93.6%

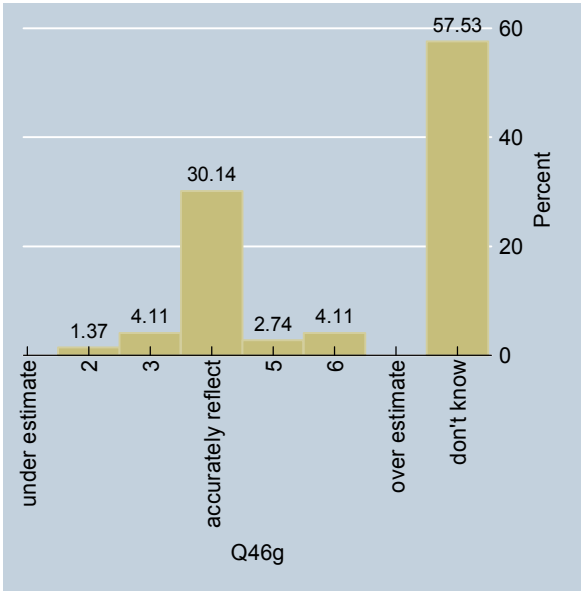


Valid Cases = 30
Minimum = 2
Maximum = 6
Mean = 3.90
Median = 4
Variance (Unbiased) = 0.78
Standard Deviation (Unbiased) = 0.88
Standard Error Of The Mean = 0.16
95 Percent Confidence Interval Around The Mean = 3.58 - 4.22
99 Percent Confidence Interval Around The Mean = 3.48 - 4.32

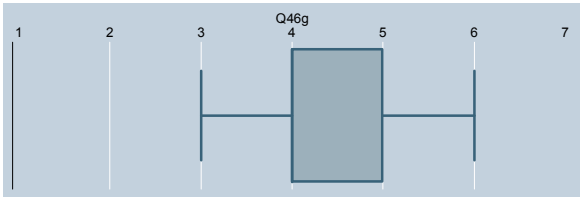


46g. In YOUR opinion, the BACC Report tends to under estimate, accurately reflect (a value of 4) or overestimate the magnitude of future changes to the ice regime?

Valid Cases = 72 Missing Cases = 6
Response Percent = 92.3%

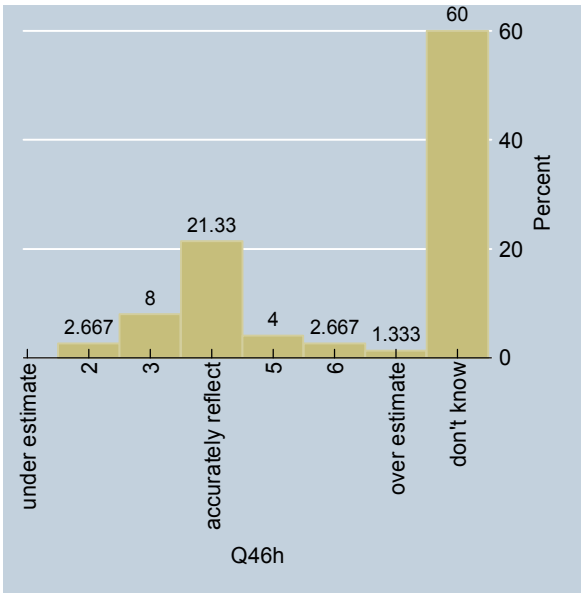


Valid Cases = 31
Minimum = 2
Maximum = 6
Mean = 4.10
Median = 4
Variance (Unbiased) = 0.69
Standard Deviation (Unbiased) = 0.83
Standard Error Of The Mean = 0.15
95 Percent Confidence Interval Around The Mean = 3.80 - 4.39
99 Percent Confidence Interval Around The Mean = 3.71 - 4.48

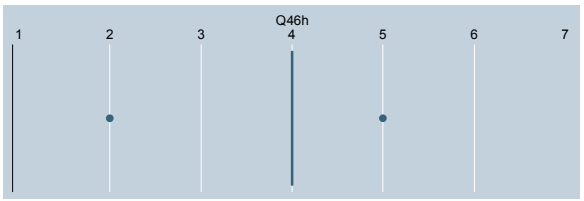


46h. In YOUR opinion, the BACC Report tends to under estimate, accurately reflect (a value of 4) or overestimate the magnitude of future changes to hydrographic characteristics?

Valid Cases = 74 Missing Cases = 4
Response Percent = 94.9%

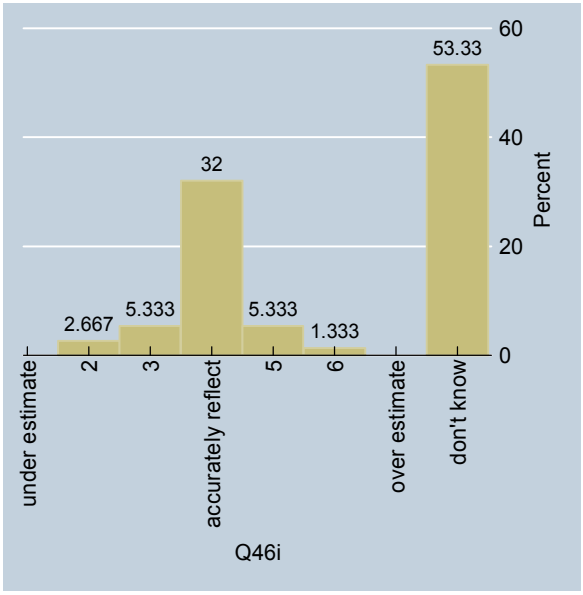


Valid Cases = 30
Minimum = 2
Maximum = 7
Mean = 4.00
Median = 4
Variance (Unbiased) = 1.17
Standard Deviation (Unbiased) = 1.08
Standard Error Of The Mean = 0.20
95 Percent Confidence Interval Around The Mean = 3.61 - 4.39
99 Percent Confidence Interval Around The Mean = 3.49 - 4.51

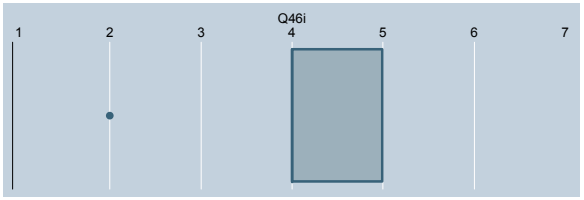


46i. In YOUR opinion, the BACC Report tends to under estimate, accurately reflect (a value of 4) or overestimate the magnitude of future changes to snow cover?

Valid Cases = 74 Missing Cases = 4
Response Percent = 94.9%

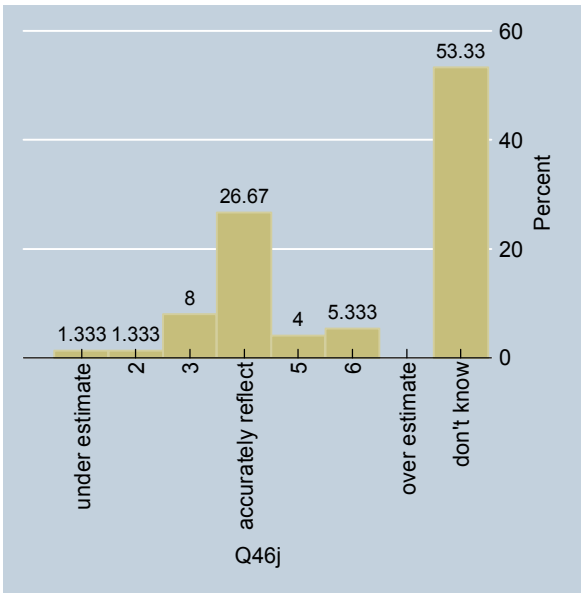


Valid Cases = 35
Minimum = 2
Maximum = 6
Mean = 3.94
Median = 4
Variance (Unbiased) = 0.58
Standard Deviation (Unbiased) = 0.76
Standard Error Of The Mean = 0.13
95 Percent Confidence Interval Around The Mean = 3.69 - 4.20
99 Percent Confidence Interval Around The Mean = 3.61 - 4.28

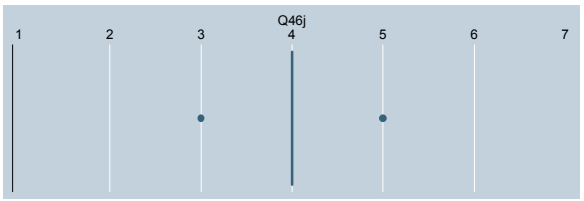


46j. In YOUR opinion, the BACC Report tends to under estimate, accurately reflect (a value of 4) or overestimate the magnitude of future changes to sea level?

Valid Cases = 74 Missing Cases = 4
Response Percent = 94.9%

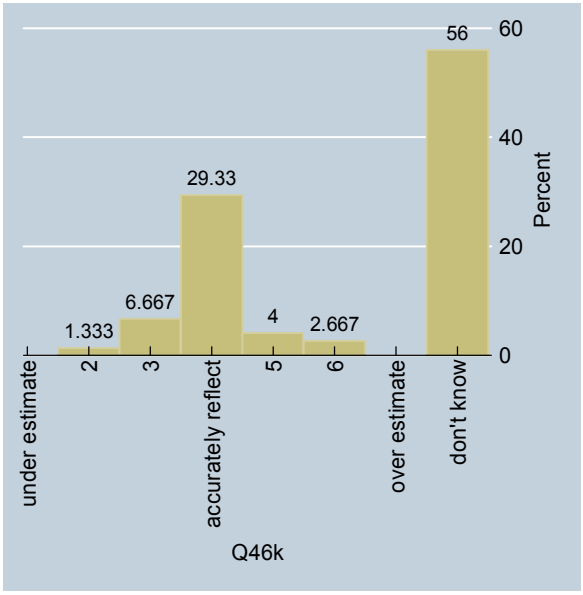


Valid Cases = 35
Minimum = 1
Maximum = 6
Mean = 4.00
Median = 4
Variance (Unbiased) = 1.12
Standard Deviation (Unbiased) = 1.06
Standard Error Of The Mean = 0.18
95 Percent Confidence Interval Around The Mean = 3.65 - 4.35
99 Percent Confidence Interval Around The Mean = 3.54 - 4.46

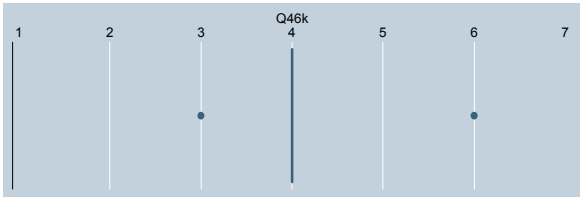


46k. In YOUR opinion, the BACC Report tends to under estimate, accurately reflect (a value of 4) or overestimate the magnitude of future changes to sea ice?

Valid Cases = 74 Missing Cases = 4
Response Percent = 94.9%

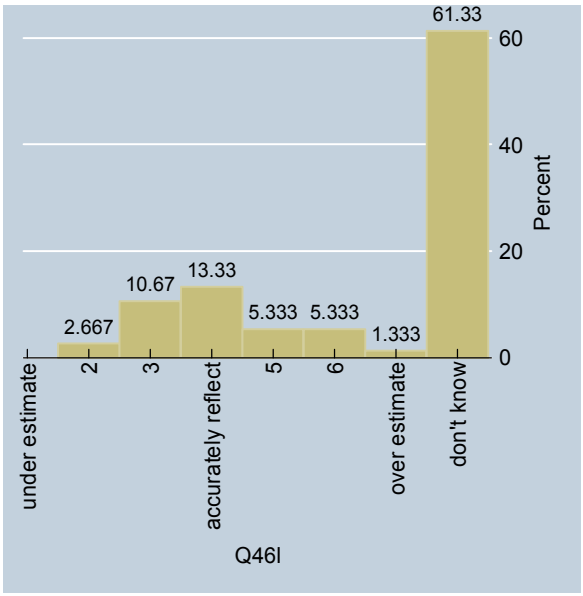


Valid Cases = 33
Minimum = 2
Maximum = 6
Mean = 4.00
Median = 4
Variance (Unbiased) = 0.63
Standard Deviation (Unbiased) = 0.79
Standard Error Of The Mean = 0.14
95 Percent Confidence Interval Around The Mean = 3.73 - 4.27
99 Percent Confidence Interval Around The Mean = 3.65 - 4.35

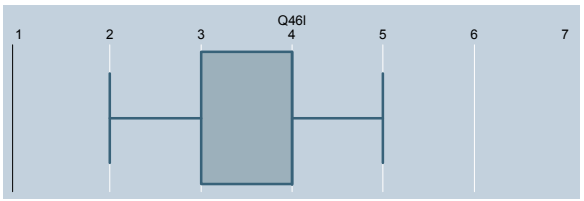


46l. In YOUR opinion, the BACC Report tends to under estimate, accurately reflect (a value of 4) or overestimate the magnitude of future changes to coastal erosion?

Valid Cases = 74 Missing Cases = 4
Response Percent = 94.9%

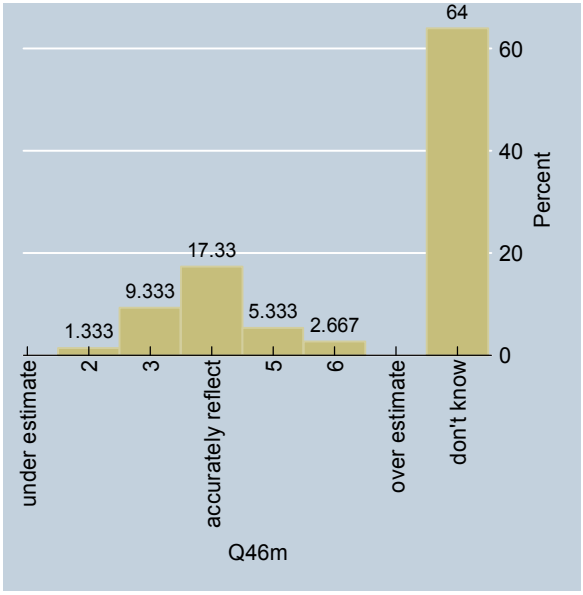


Valid Cases = 29
Minimum = 2
Maximum = 7
Mean = 4.10
Median = 4
Variance (Unbiased) = 1.60
Standard Deviation (Unbiased) = 1.26
Standard Error Of The Mean = 0.23
95 Percent Confidence Interval Around The Mean = 3.64 - 4.56
99 Percent Confidence Interval Around The Mean = 3.50 - 4.71

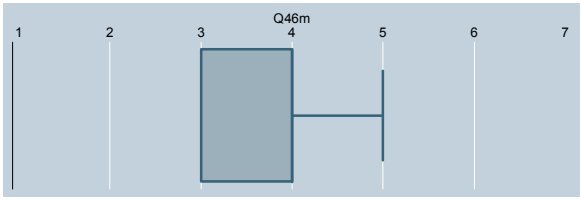


46m. In YOUR opinion, the BACC Report tends to under estimate, accurately reflect (a value of 4) or overestimate the magnitude of future changes to wind waves?

Valid Cases = 74 Missing Cases = 4
Response Percent = 94.9%

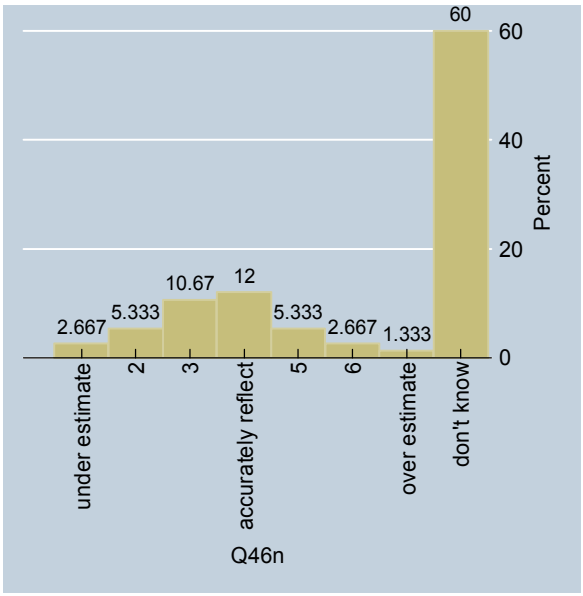


Valid Cases = 27
Minimum = 2
Maximum = 6
Mean = 3.96
Median = 4
Variance (Unbiased) = 0.88
Standard Deviation (Unbiased) = 0.94
Standard Error Of The Mean = 0.18
95 Percent Confidence Interval Around The Mean = 3.61 - 4.32
99 Percent Confidence Interval Around The Mean = 3.50 - 4.43

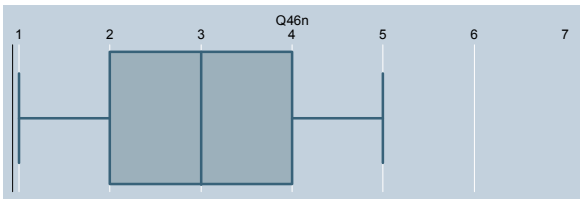


46n. In YOUR opinion, the BACC Report tends to under estimate, accurately reflect (a value of 4) or overestimate the magnitude of future changes to terrestrial and fresh water ecological systems?

Valid Cases = 74 Missing Cases = 4
Response Percent = 94.9%

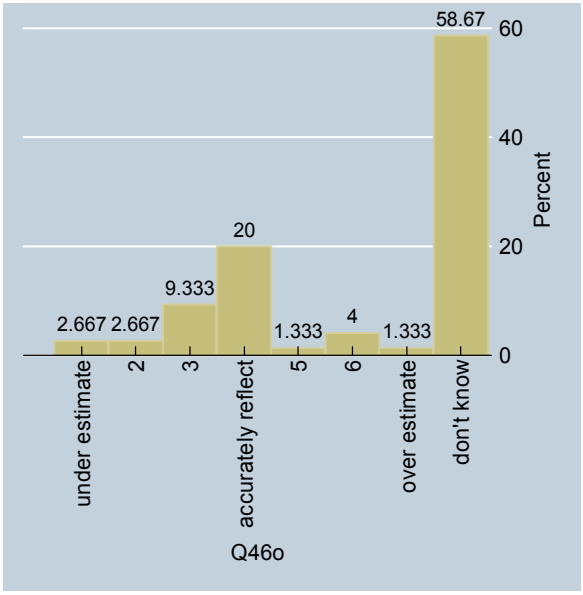


Valid Cases = 30
Minimum = 1
Maximum = 7
Mean = 3.63
Median = 4
Variance (Unbiased) = 2.03
Standard Deviation (Unbiased) = 1.43
Standard Error Of The Mean = 0.26
95 Percent Confidence Interval Around The Mean = 3.12 - 4.14
99 Percent Confidence Interval Around The Mean = 2.96 - 4.30

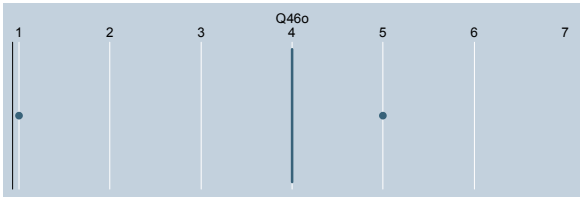


46o. In YOUR opinion, the BACC Report tends to under estimate, accurately reflect (a value of 4) or overestimate the magnitude of future changes to marine ecological systems?

Valid Cases = 74 Missing Cases = 4
Response Percent = 94.9%

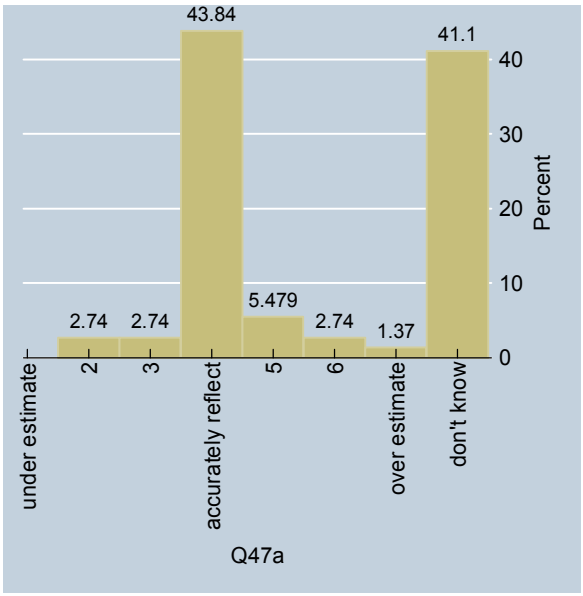


Valid Cases = 31
Minimum = 1
Maximum = 7
Mean = 3.77
Median = 4
Variance (Unbiased) = 1.78
Standard Deviation (Unbiased) = 1.33
Standard Error Of The Mean = 0.24
95 Percent Confidence Interval Around The Mean = 3.30 - 4.24
99 Percent Confidence Interval Around The Mean = 3.16 - 4.39

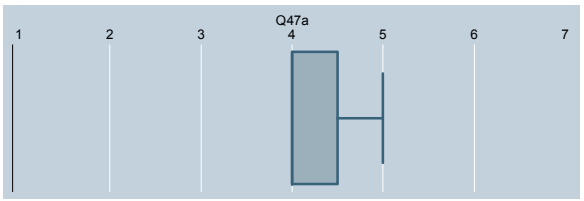


47a. Does the BACC Report tends to under estimate, accurately reflect (a value of 4) or overestimate the results of projections from global climate models?

Valid Cases = 72 Missing Cases = 6
Response Percent = 92.3%

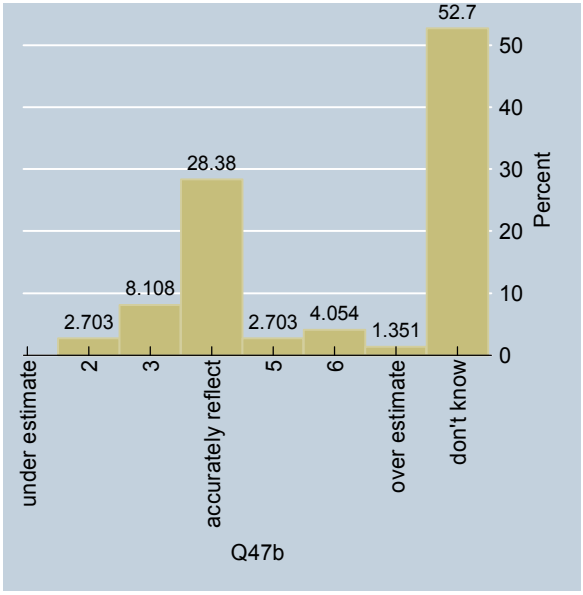


Valid Cases = 43
Minimum = 2
Maximum = 7
Mean = 4.12
Median = 4
Variance (Unbiased) = 0.72
Standard Deviation (Unbiased) = 0.85
Standard Error Of The Mean = 0.13
95 Percent Confidence Interval Around The Mean = 3.86 - 4.37
99 Percent Confidence Interval Around The Mean = 3.78 - 4.45

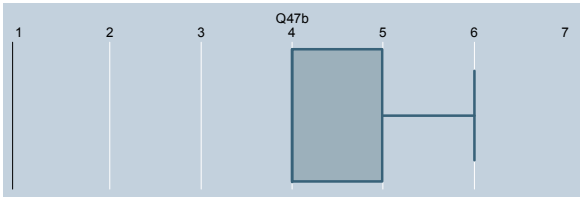


47b. Does the BACC Report tends to under estimate, accurately reflect (a value of 4) or overestimate the results of projections from statistical down scaling?

Valid Cases = 73 Missing Cases = 5
Response Percent = 93.6%

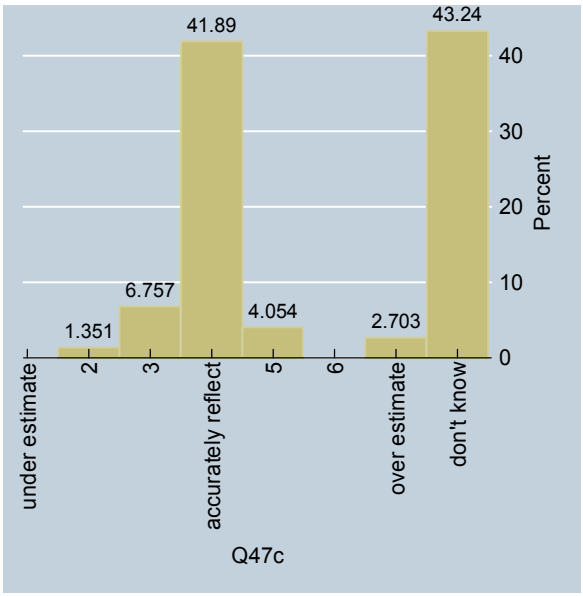


Valid Cases = 35
Minimum = 2
Maximum = 7
Mean = 4.03
Median = 4
Variance (Unbiased) = 1.09
Standard Deviation (Unbiased) = 1.04
Standard Error Of The Mean = 0.18
95 Percent Confidence Interval Around The Mean = 3.68 - 4.37
99 Percent Confidence Interval Around The Mean = 3.57 - 4.48

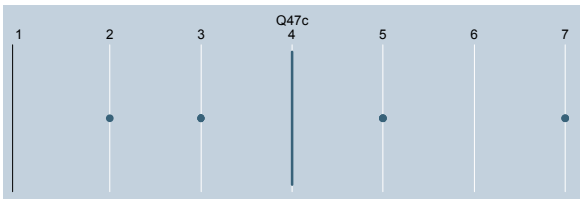


47c. Does the BACC Report tends to under estimate, accurately reflect (a value of 4) or overestimate the results of projections from regional climate models

Valid Cases = 73 Missing Cases = 5
Response Percent = 93.6%

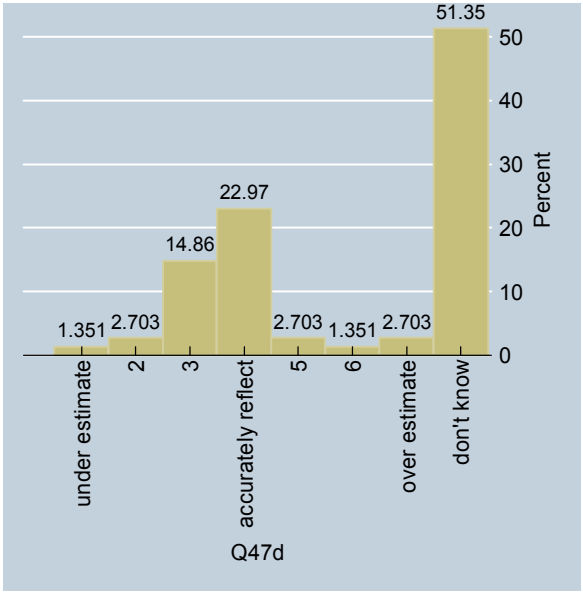


Valid Cases = 42
Minimum = 2
Maximum = 7
Mean = 4.05
Median = 4
Variance (Unbiased) = 0.73
Standard Deviation (Unbiased) = 0.85
Standard Error Of The Mean = 0.13
95 Percent Confidence Interval Around The Mean = 3.79 - 4.31
99 Percent Confidence Interval Around The Mean = 3.71 - 4.39

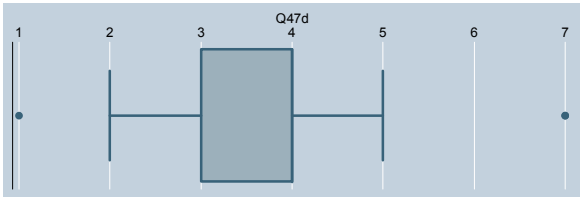


47d. Does the BACC Report tends to under estimate, accurately reflect (a value of 4) or overestimate the results of projections of future climate variability?

Valid Cases = 73 Missing Cases = 5
Response Percent = 93.6%

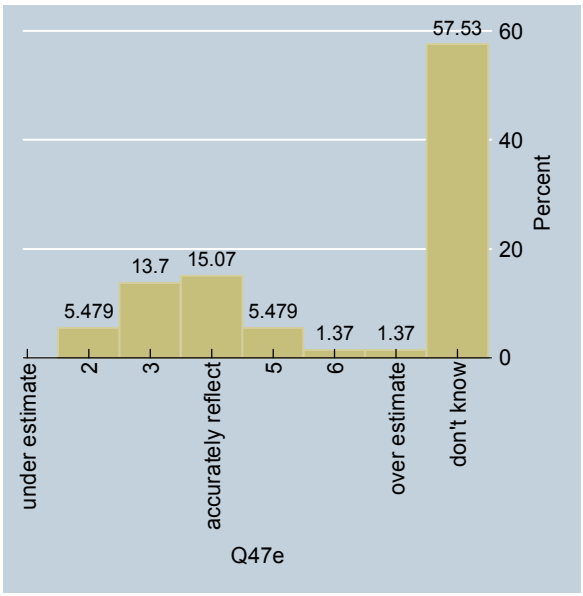


Valid Cases = 36
Minimum = 1
Maximum = 7
Mean = 3.78
Median = 4
Variance (Unbiased) = 1.43
Standard Deviation (Unbiased) = 1.20
Standard Error Of The Mean = 0.20
95 Percent Confidence Interval Around The Mean = 3.39 - 4.17
99 Percent Confidence Interval Around The Mean = 3.26 - 4.29

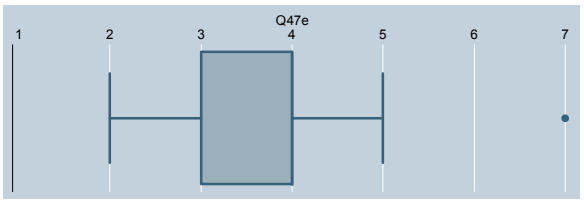


47e. Does the BACC Report tends to under estimate, accurately reflect (a value of 4) or overestimate the results of projections of future extreme events?

Valid Cases = 72 Missing Cases = 6
Response Percent = 92.3%

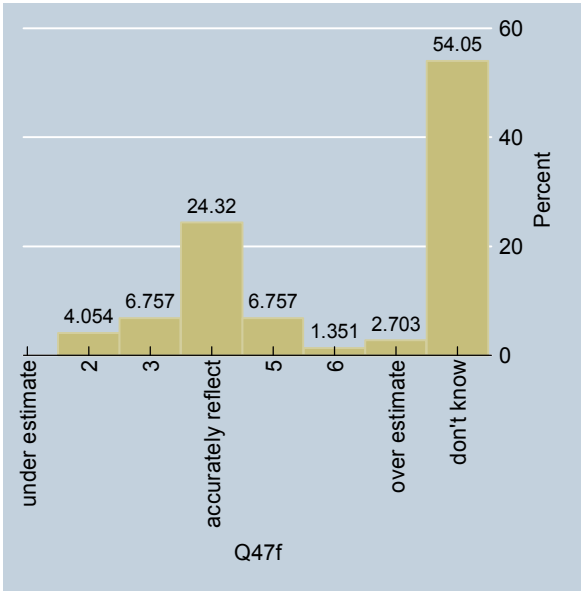


Valid Cases = 31
Minimum = 2
Maximum = 7
Mean = 3.71
Median = 4
Variance (Unbiased) = 1.35
Standard Deviation (Unbiased) = 1.16
Standard Error Of The Mean = 0.21
95 Percent Confidence Interval Around The Mean = 3.30 - 4.12
99 Percent Confidence Interval Around The Mean = 3.17 - 4.25

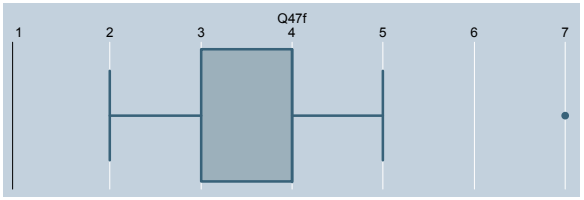


47f. Does the BACC Report tends to under estimate, accurately reflect (a value of 4) or overestimate the results of projections of future hydrological change?

Valid Cases = 73 Missing Cases = 5
Response Percent = 93.6%

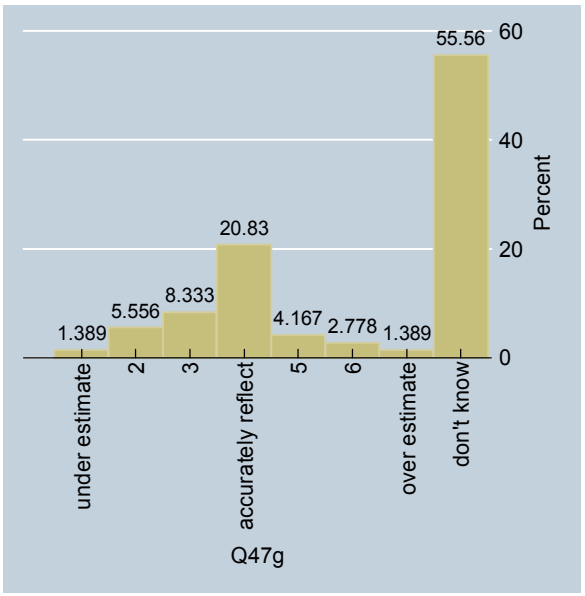


Valid Cases = 34
Minimum = 2
Maximum = 7
Mean = 4.06
Median = 4
Variance (Unbiased) = 1.33
Standard Deviation (Unbiased) = 1.15
Standard Error Of The Mean = 0.20
95 Percent Confidence Interval Around The Mean = 3.67 - 4.45
99 Percent Confidence Interval Around The Mean = 3.55 - 4.57

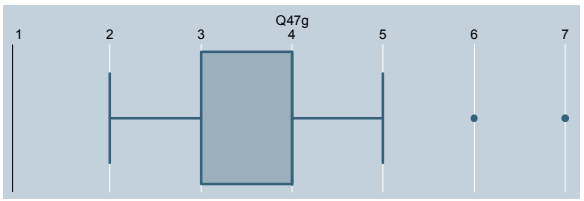


47g. Does the BACC Report tends to under estimate, accurately reflect (a value of 4) or overestimate the results of projections of future sea level?

Valid Cases = 72 Missing Cases = 6
Response Percent = 92.3%

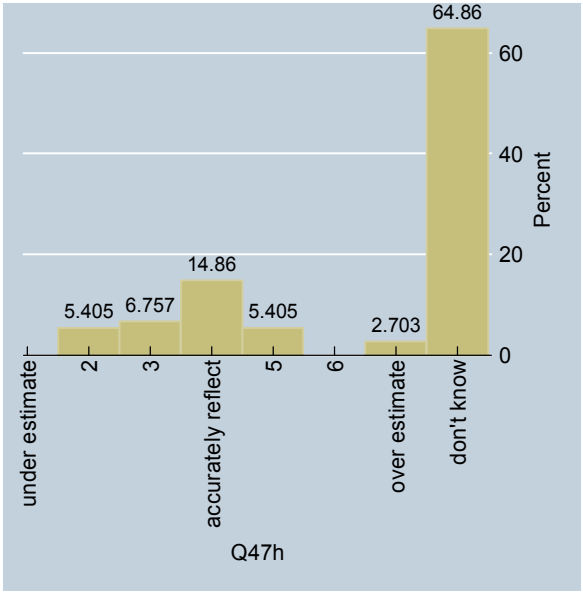


Valid Cases = 32
Minimum = 1
Maximum = 7
Mean = 3.78
Median = 4
Variance (Unbiased) = 1.60
Standard Deviation (Unbiased) = 1.26
Standard Error Of The Mean = 0.22
95 Percent Confidence Interval Around The Mean = 3.34 - 4.22
99 Percent Confidence Interval Around The Mean = 3.21 - 4.36

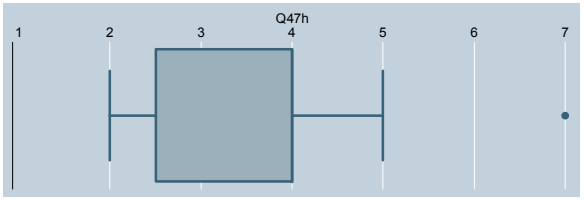


47h. Does the BACC Report tends to under estimate, accurately reflect (a value of 4) or overestimate the results of projections of future changes to terrestrial and freshwater ecosystems?

Valid Cases = 73 Missing Cases = 5
Response Percent = 93.6%

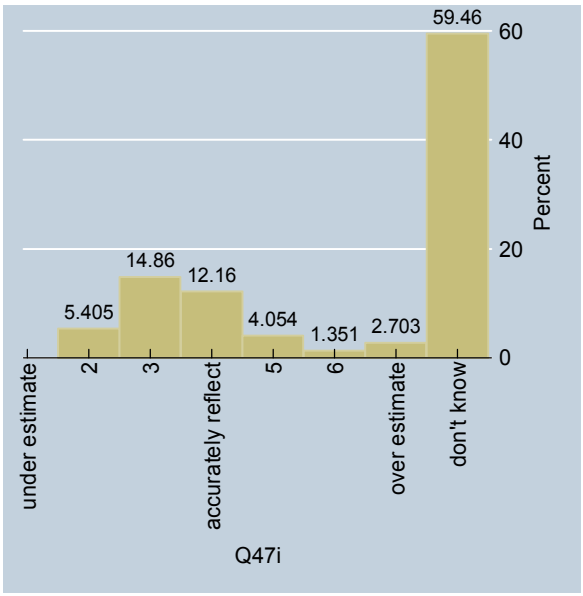


Valid Cases = 26
Minimum = 2
Maximum = 7
Mean = 3.88
Median = 4
Variance (Unbiased) = 1.71
Standard Deviation (Unbiased) = 1.31
Standard Error Of The Mean = 0.26
95 Percent Confidence Interval Around The Mean = 3.38 - 4.39
99 Percent Confidence Interval Around The Mean = 3.22 - 4.54

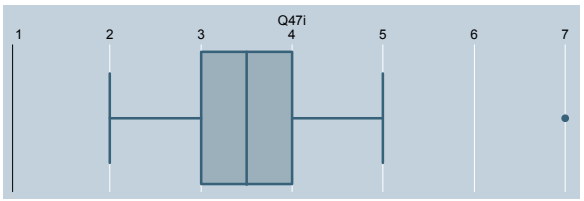


47i. Does the BACC Report tends to under estimate, accurately reflect (a value of 4) or overestimate the results of projections of future changes to marine ecosystems?

Valid Cases = 73 Missing Cases = 5
Response Percent = 93.6%

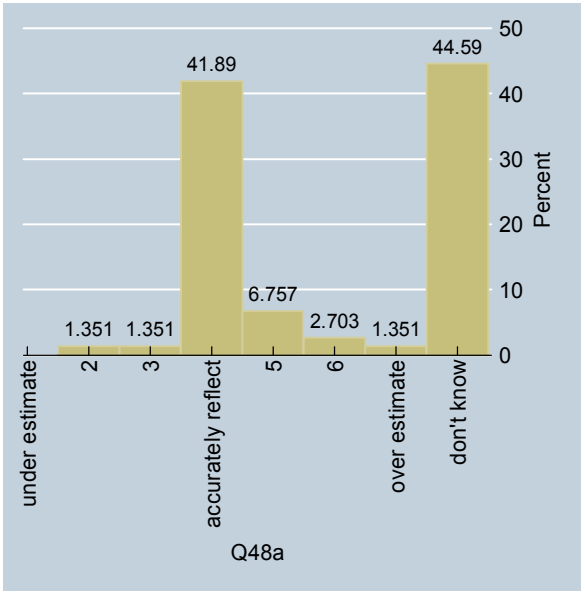


Valid Cases = 30
Minimum = 2
Maximum = 7
Mean = 3.73
Median = 3.50
Variance (Unbiased) = 1.72
Standard Deviation (Unbiased) = 1.31
Standard Error Of The Mean = 0.24
95 Percent Confidence Interval Around The Mean = 3.26 - 4.20
99 Percent Confidence Interval Around The Mean = 3.12 - 4.35

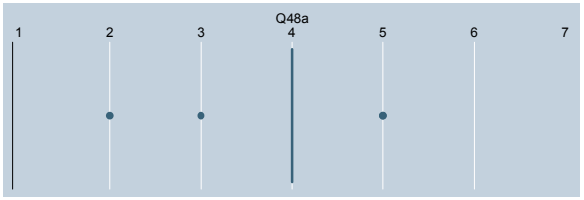


48a. Does the BACC Report tends to under estimate, accurately reflect (a value of 4) or overestimate the impacts of temperature?

Valid Cases = 73 Missing Cases = 5
Response Percent = 93.6%

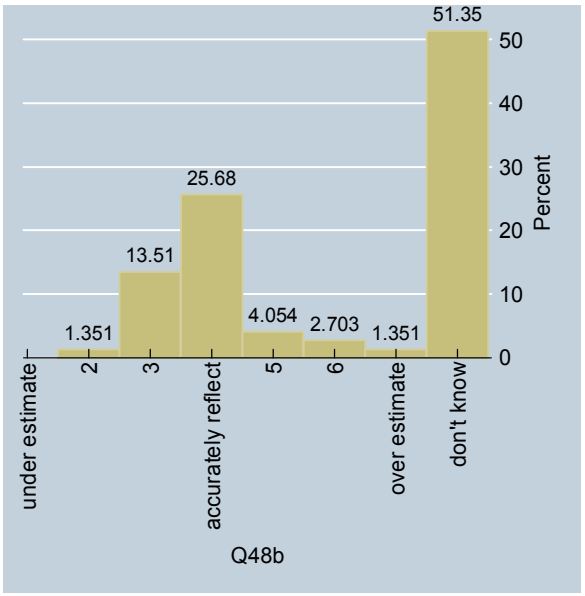


Valid Cases = 41
Minimum = 2
Maximum = 7
Mean = 4.22
Median = 4
Variance (Unbiased) = 0.63
Standard Deviation (Unbiased) = 0.79
Standard Error Of The Mean = 0.12
95 Percent Confidence Interval Around The Mean = 3.98 - 4.46
99 Percent Confidence Interval Around The Mean = 3.90 - 4.54

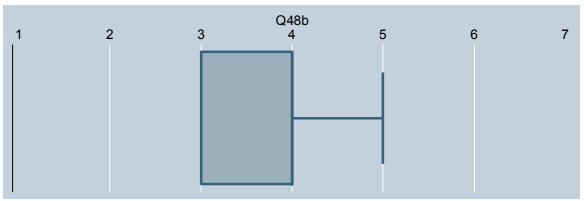


48b. Does the BACC Report tends to under estimate, accurately reflect (a value of 4) or overestimate the impacts of precipitation?

Valid Cases = 73 Missing Cases = 5
Response Percent = 93.6%

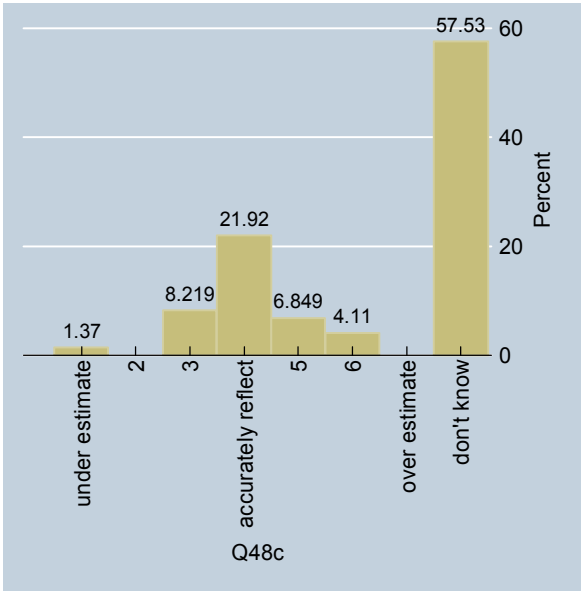


Valid Cases = 36
Minimum = 2
Maximum = 7
Mean = 3.94
Median = 4
Variance (Unbiased) = 0.97
Standard Deviation (Unbiased) = 0.98
Standard Error Of The Mean = 0.16
95 Percent Confidence Interval Around The Mean = 3.62 - 4.27
99 Percent Confidence Interval Around The Mean = 3.52 - 4.37

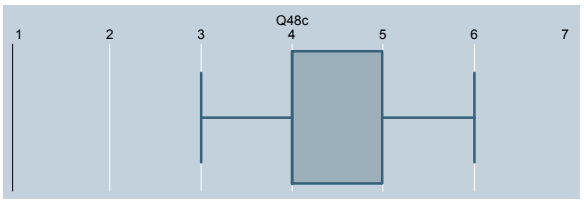


48c. Does the BACC Report tends to under estimate, accurately reflect (a value of 4) or overestimate the impacts of sea level rise?

Valid Cases = 72 Missing Cases = 6
Response Percent = 92.3%

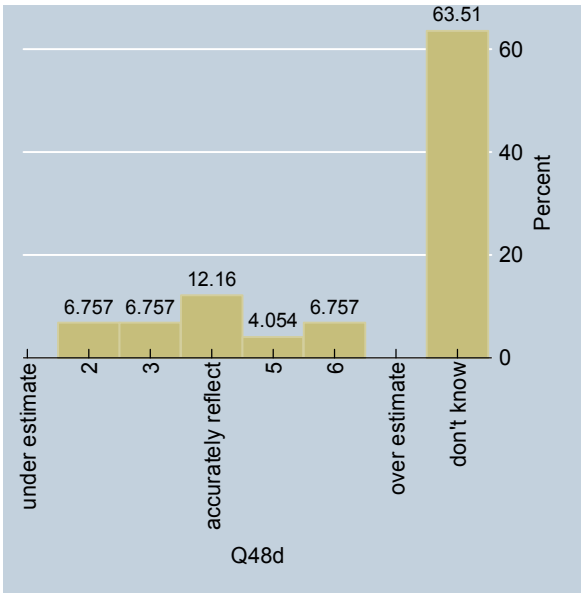


Valid Cases = 31
Minimum = 1
Maximum = 6
Mean = 4.06
Median = 4
Variance (Unbiased) = 1.06
Standard Deviation (Unbiased) = 1.03
Standard Error Of The Mean = 0.19
95 Percent Confidence Interval Around The Mean = 3.70 - 4.43
99 Percent Confidence Interval Around The Mean = 3.59 - 4.54

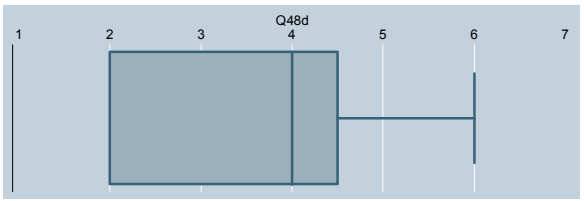


48d. Does the BACC Report tends to under estimate, accurately reflect (a value of 4) or overestimate the impacts of extreme events?

Valid Cases = 73 Missing Cases = 5
Response Percent = 93.6%

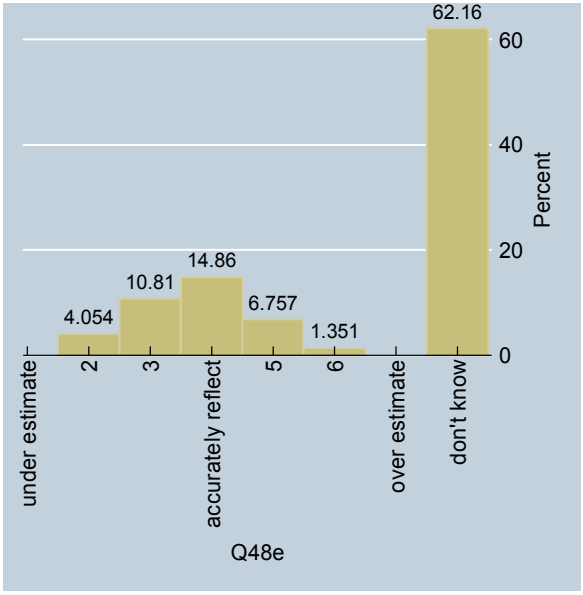


Valid Cases = 27
Minimum = 2
Maximum = 6
Mean = 3.93
Median = 4
Variance (Unbiased) = 1.84
Standard Deviation (Unbiased) = 1.36
Standard Error Of The Mean = 0.26
95 Percent Confidence Interval Around The Mean = 3.41 - 4.44
99 Percent Confidence Interval Around The Mean = 3.25 - 4.60

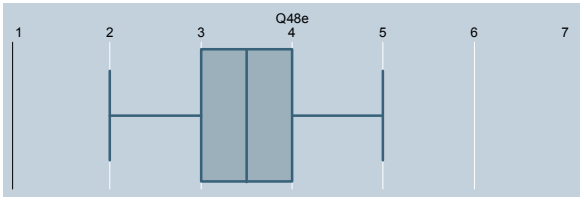


48e. Does the BACC Report tends to under estimate, accurately reflect (a value of 4) or overestimate the impacts of coastal erosion?

Valid Cases = 73 Missing Cases = 5
Response Percent = 93.6%



Valid Cases = 28
Minimum = 2
Maximum = 6
Mean = 3.75
Median = 4
Variance (Unbiased) = 1.01
Standard Deviation (Unbiased) = 1.00
Standard Error Of The Mean = 0.19
95 Percent Confidence Interval Around The Mean = 3.38 - 4.12
99 Percent Confidence Interval Around The Mean = 3.26 - 4.24



Section 2. c Significance

49. In your opinion, is the BACC report a significant contribution to the Baltic science community?

	Number	Percent
yes	66	89.2 %
no	1	1.4 %
don't know	7	9.5 %
Total	74	100.0 %

Missing Cases = 4
Response Percent = 94.9 %

50. Would you recommend the BACC report to other interested persons as being a comprehensive report on the issue of climate change in the Baltic Sea basin?

	Number	Percent
yes	65	87.8 %
no	2	2.7 %
don't know	7	9.5 %
Total	74	100.0 %

Missing Cases = 4
Response Percent = 94.9 %

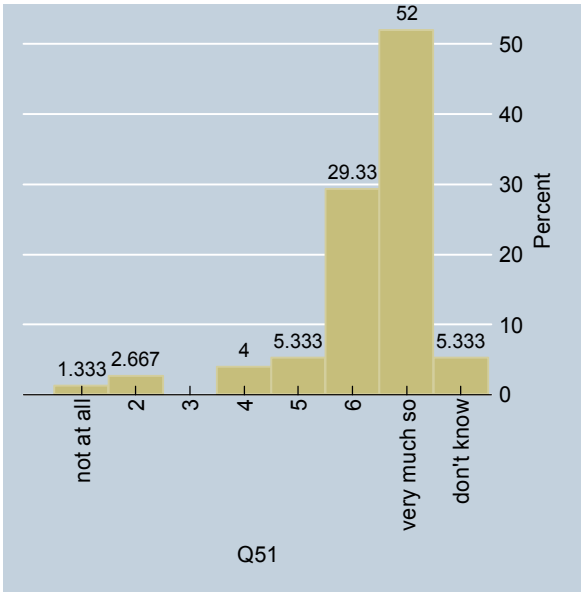
51. Do you think a second BACC report on climate and climate change in the Baltic Sea region sometime in the future would be a good idea?

	Number	Percent
not at all	1	1.4 %
2	2	2.7 %
3	0	0.0 %
4	3	4.1 %
5	4	5.4 %
6	22	29.7 %
very much so	38	51.4 %
don't know	4	5.4 %
Total	74	100.0 %

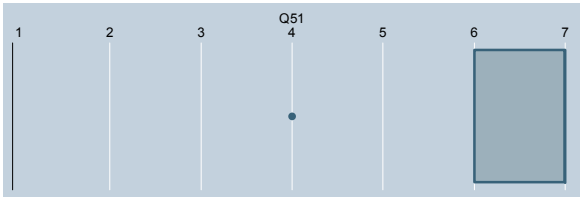
Missing Cases = 4
Response Percent = 94.9 %

51. Do you think a second BACC Report on climate and climate change in the Baltic Sea region sometime in the future would be a good idea?

Valid Cases = 74 Missing Cases = 4
Response Percent = 94.9%



Valid Cases = 71
Minimum = 1
Maximum = 7
Mean = 6.23
Median = 7
Variance (Unbiased) = 1.55
Standard Deviation (Unbiased) = 1.24
Standard Error Of The Mean = 0.15
95 Percent Confidence Interval Around The Mean = 5.94 - 6.51
99 Percent Confidence Interval Around The Mean = 5.85 - 6.61



Section 3. Comments

All comments are verbatim.

52. Please comments on aspects that you think would improve a subsequent BACC report, i.e. the inclusion of other research areas, the process by which it was produced, etc. etc.

1. impact of climate change on urban environment, agriculture, water accessibility
2. I think that some reflection of the role of the Baltic in a larger context would be an appreciated add on to a future report
3. More attention should be paid to cloudiness and its trends.
4. The chapter on biology was not comprehensive, and the group of authors was perhaps not all that well put together, and thus did not reflect the actual knowledge of the potential effects of climate change on the biota and habitats of the Baltic Sea.
5. acidification, biogeochemical cycles, socio-economical issues, erosion
6. urban areas, sea level; broader inclusion of marine ecology community
7. The BALTEX report covers only short aspects of the very early scientific problems which lead to the development of BALTEX. These were at all related to the climate of the entire BALTEX area and is reproduced by any reliable model.
8. More efforts needed for creation progress in adaptation measures in terrestrial freshwater and costal ecosystems as far in socioeconomic processes.
9. In light of some of the recent issues/debate related to the IPCC AR4 report it would be good to have a transparent review process so that revisions can be traced at a later stage. Sea level changes and impacts thereof should be more comprehensively covered.
10. Probably more detailed research on water viscosity and bubble mediated dissipation of wave energy in the southern Baltic Sea costal waters would improve our knowledge on the coastal erosion.
11. Impact on ecosystems (terrestrial, freshwater and marine) should be more comprehensive in future
12. stronger focus on the sea-level issue
13. The climate change impact on the biogeochemical processes should be more represented in the BACC report
14. I think that a next report should be more comprehensive on sea level rise. This could include new assessments of the global sea levels as well.
15. geobiochemical cycles and deposition of matter from non- Baltic regions
16. Much more information is needed on the impact of climate change on marine ecological systems for the next report. It could also be useful to cooperate with European components of Arctic climate and cryosphere work, where there is an overlap in the Fennoscandian area. See, e.g., the current AMAP project SWIPA on Climate Change and the Arctic Cryosphere: www.amap.no/swipa. It could also be very useful to add a chapter on the socio-economic implications of climate change to provide a further basis for the development of public policy and the public understanding of the implications of climate change. This is attempted in the SWIPA project.
17. Effects on marine ecosystems and socio-economy should hopefully be better included

18. Regional climate change in the Baltic region (and mostly anywhere else) is currently not possible to project. This mainly due to changes are small and uncertainties much larger. The BACC report did not left room for a discussion of the methods and hence this general question. This makes the projection section rather technical and non-scientific and has lead to widespread misunderstandings about the nature of projections in related communities. To make another assessment valuable, such a discussion need to be performed open in the result!

19. Technical measures to combat climate change, new solutions for integrated management for adaption in urban planning

20. the potential role of landscape changes and changes in vegetation cover will fundamentally change the evapotranspiration patterns and hydrology on land; as long as we do not take these into account the future prognostics on freshwater inputs and salinity distributions in the Baltic are incomplete and misleading!

21. Perhaps it could benefit from an even clearer division according to, e.g., 1. scientific background (including observations), 2. scenarios including terrestrial, limnic and marine ecosystem models (if available socioeconomic etc...), 3. non-quantitative scenarios, i.e., statements of impacts in areas where general response is known but not to the degree that quantitative modeling is available. 4. Adaptation

22. We would need the better net of measuring points, both, for meteorology and for sea level.

53. General Comments.

1. A stronger effort towards visibility of the BACC report should be pursued

2. I must admit that I haven't read the report - it's lying on my desk together with 100 other papers & reports. A change in the global mean values is less noisy and easier to attribute to AGW than local/regional climate change. some questions were therefore unclear.

3. Some questions may easily generate biased results: e.g., the probability of regional 'catastrophe' is in my opinion zero, as I compare to what I think may happen elsewhere. I did not consider decreasing chances of skating and skiing catastrophic, but was tempted... Some of the answers you collect may reflect values rather than scientific understanding

4. It is difficult to see the value of this questionnaire!

5. Climate change is a matter of global GHG emissions. Small regions -- such as e.g. the Baltic Region -- have a negligible contribution to the emissions. Therefore adaptation (not mitigation) is an issue to be researched at a regional scale.

6. Most likely there will be a need for an updated version as models get better, and even unexpected events can be simulated somehow (cf the ongoing winter!).

7. Some of the questions were strange. There is a disparity between (now I don't remember the exact wording) 'will climate change cause a catastrophe' and 'will climate change have advantages'. Even though climate change will probably not be a catastrophe for this particular area (so a larger chance of advantages than a catastrophe), this does not necessarily imply that the advantages will outweigh the disadvantages.

8. You emphasize too much the human impact not distinguishing between local effects and global effects.

9. The current climate over the Baltic sea does not change. This means that the questions from 23 to 43 are meaningless.

10. Several of the questions, in particular in the earlier part, were value judgments that could be answered using two references; as a scientist, 'how good/bad (whatever) is X in a scientific sense', and 'is X good/bad (whatever) to be used in a judicial way to provide reasonable decision support or otherwise information to non-experts regarding possible/likely future scenarios

11. I consider BACC report as very important scientific background for proactive management of Baltic basin climate change.

12. Some of the questions in this survey are very difficult to answer on a precise scale as the answers can be at one end of the scale for some aspects and at the other end of the scale for others

13. The uncertainty of the climate models and models in general should more addressed and told to the decision makers, politicians, public!

14. I would most relevant to focus not only on knowledge about the present and future, but also on 1) HOW to apply this knowledge, and to actually counteract the ongoing change (mitigation + adaptation + innovation) - And thereby 2) recognize / understand the key role the regional and local governments are playing when it comes to action.

15. The BACC report was a groundbreaking work on climate change in the Baltic area and should be followed up as scientific understanding progresses.

16. Guess the climate change issue is overestimated in general. We need to focus more on the near future and need to build systems for that. The long term changes are not an issue for adaptation now for the current generation of policy makers. Hence monitoring present day and project near future conditions is of more interest.

17. I am wondering about the 'fairness' to become author in the BACC book; wasn't it so that a lead author simply picked potential co-authors? This is OK for me but this has nothing to do with fairness, only with excellence.

18. I found it difficult to understand some of the questions

19. This survey is based on personal opinions. I generally make fun about newspapers tendency towards voting on climate change issues. It is more relevant to ask experts on what we are sure about, what we think we know, what we anticipate etc. Since I am only an expert on statistics and decision-support many of my assessments of actual impacts must rely on my peer experts within each field

Previous related surveys (chronologically)

Bray, Dennis and Hans von Storch: CliSci 1996: The perspectives of climate scientists on global climate change: A survey of opinions (mailout - 5 countries); descriptive results available as 'Perspectives of climate scientists on global climate change' GKSS Report GKSS 2007/11. Available online as PDF file at *http://www.gkss.de/imperia/md/content/gkss/zentrale_einrichtungen/bibliothek/berichte/gkss_berichte_2007/gkss_2007_11.pdf*

Bray, Dennis and Carsten Krueck, 2000: Wie schätzt die deutsche Exekutive die Gefahr eines globalen Klimawandels ein? Eine Meinungsumfrage zum Rikomanagement in der Umweltpolitik. (a survey of German government – mailout); Report available as ‚Wie schätzt die deutsche Exekutive die Gefahr eines globalen Klimawandels ein? Eine Meinungsumfrage zum Risikomanagement in der Umweltpolitik' GKSS Report GKSS 2000/6. Available by request to GKSS Forschungszentrum, Bibliothek, D-21502, Geesthacht, Germany; and ‚Speaking truth to power revisited: Science, policy and climate change' GKSS Report GKSS 2000/32. Available by request to GKSS Forschungs-zentrum, Bibliothek, D-21502, Geesthacht, Germany

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