



Minutes of the
6th Meeting
of the Baltic Earth
Science Steering Group

held at

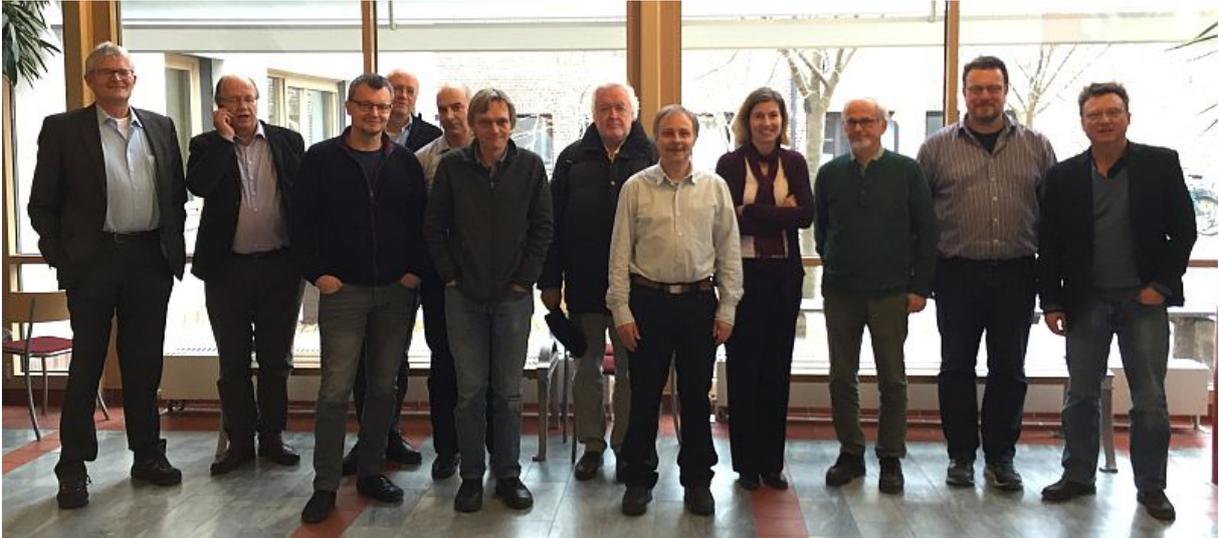
**Geocentrum
Uppsala University, Sweden**

7-8 March 2016

Edited by

Marcus Reckermann

6th Baltic Earth SSG Meeting Minutes



Participants at the 6th Baltic Earth Science Steering Group meeting in Uppsala. Left to right:

Kay Emeis (BESAB), Jüri Elken (BESAB), Karol Kulinski, Fritz Köster (BESAB), Juris Aigars, Benjamin Smith, Hans von Storch, Markus Meier (chair), Anna Rutgersson (vice-chair), Anders Omstedt, Martin Stendel, Marcus Reckermann (IBES). Present but not on the photo: Andris Andrusaitis (observer, via Skype), Deliang Chen (BESAB), Piia Post, Corinna Schrum, Ralf Weisse (via Skype), Sergey Zhuravlev (via Skype), Ulla Li Zweifel (BESAB, via Skype).

Contents

	Page
Decisions.....	4
Action Items	4
Introduction.....	5
TOP 1: Organizational Issues	5
1.1. Approval of the agenda.....	5
1.2. Approval of the previous Baltic Earth SSG meeting minutes.....	5
1.3. Review of the previous (#4) Baltic Earth SSG meeting action items.....	5
1.4. Membership issues	6
TOP 2: Report on Baltic Earth activities in 2014.....	7
2.1. Report of the International Baltic Earth Secretariat	7
2.2. Report on EU ITN Proposal “ExtremeSeas”	7
2.3 Baltic Earth Doctoral Students Conference in Estonia	7
2.4 Baltic Earth/BEAM Doctoral Course on Askö, Sweden	7
2.5 Baltic Earth–HyMex Workshop in Rome, Italy	7
2.6 Second Baltic Earth - Gulf of Finland Seminar, Helsinki, Finland	8
2.7. Brief reports from the Working Groups.....	8
TOP 3: Baltic Earth Science Plan.....	9
3.1. Open discussion on the Draft Baltic Earth Science Plan	9
TOP 4: Upcoming Baltic Earth activities	10
4.1 General discussion on the format and frequency of future Baltic Earth Conferences.....	10
4.2 1 st Baltic Earth Conference in Nida, Lithuania.....	10
4.3 Second Workshop on the ‘Major Baltic Inflow of December 2014’	10
4.4 Baltic Earth-BACC-NOSCCA Session at EGU 2016	11
4.5 3 rd Baltic Earth Summer School.....	11
4.6 Baltic Earth Seminar on “Exchange processes between the North and Baltic Seas”	11
TOP 5. Baltic Earth international embedding and cooperation	11
5.1 Initial Application for Partnering with Future Earth	11
5.2 GEWEX-GHP connection	11
TOP 6: Miscellaneous Baltic Earth issues and potential activities	11
6.1 Possible extension of Baltic Earth research interests to the North Sea	11
6.2 Oxford Research Encyclopedia article series or special project as BACC successor.....	12
6.3 Outreach issues	12
6.4 Format of BESSG meetings.....	13
6.5 Memorandum of Understanding – Motivation and Status	13
6.6 Time and place of the next two Baltic Earth Science Steering Group Meetings	13
Abbreviations and Acronyms	14
Annex 1: Agenda of the 4 th BESSG meeting	15
Annex 2: Participant list	18

Decisions

Decision 1: *Corinna Schrum* and *Ralf Weisse* new BESSG members

Decision 2: Extension of the 2-year term for BESSG chairman- and membership to a 3-year term, as of June 2016 (end of this next term in June 2019)

Decision 3: *Markus Meier* (chair) and *Anna Rutgersson* (vice-chair) were approved in their positions until June 2019

Decision 4: *Erik Kjellstöm* to be approached to join the BESSG

Decision 5: It was decided to have a two year term for Baltic Earth Conferences (even years). The format remains to be decided on. An option could be a shorter 3-days conference alternating with a full 5-days conference.

Decision 6: It was decided to install a new Working Group on “Multiple Drivers of regional Earth System changes in the Baltic Sea region”. Also the management dimension should be considered (Suggested members are *Marcus Reckermann*, *Benjamin Smith* and *Juris Aigars*; *Juha-Markku Leppänen* to be asked for management/governance)

Decision 8: Decision to form a WG on Regional Seas (Marginal Seas). (Suggested members are *Corinna Schrum*, *Kai Myrberg* and *Ralf Weisse*. For approval at the next meeting in Nida.

Decision 9: It was decided to prepare a collection of articles on Climate Change in the Baltic Sea region in the framework of the Oxford Research Encyclopedia. *Marcus Reckermann* and *Anders Omstedt* agreed to act as Editors.

Decision 10: A Working Group on BACC III should be installed whose task it would be to identify topics for the new and oversee the process. (Suggested names, to be asked: *Ilpo Vuorinen*, *Erik Kjellström*, *Jouni Räisänen*)

Decision 11: Web site section for non-scientists to be developed

Action Items

Action Item 1 (to *WG Chairs* and *members*): Collect information on recent and planned activities related to the recent MBIs and pass on to *Marcus Reckermann* to post it on the website.

Action Item 2 (to *Marcus Reckermann*, *Sergey Zhuravlev*): Related to international embedment, it was decided to prepare a typology or inventory of Earth System research organizations and networks which may be relevant for Baltic Earth.

Action Item 3 (to *WG members for Outreach and Communication*) to draft an Outreach and Communication Plan

Action Item 4 (to *all WGs*) to send background explanatory information to *Marcus Reckermann* to post it on the outreach pages of the Baltic Earth website.

Introduction

The 6th Baltic Earth Science Steering Group Meeting was a 1.5-day meeting and took place at the Geocentrum of Uppsala University, Sweden. Anna Rutgersson was our host for this meeting. The meeting also hosted the Baltic Earth Senior Advisory Board (BESAB), which joined the BESSG meeting.

Dominant topics of this meeting were the discussion, comments and recommendation concerning the Baltic Earth Draft Science Plan, which was available as a first draft. Other topics discussed were a possible extension of the Baltic Earth geographical scope to the North Sea, membership issues with two new members and the termination of the first 2-year membership term ahead and upcoming events in 2016 (e.g. the 1st Baltic Earth Conference in Nida).

Local host Anna Rutgersson welcomed the participants at the Geocentrum of Uppsala University. BESSG chairman Markus Meier chaired the meeting. At the beginning, all meeting participants gave a short self-presentation.

BESSG Chair Markus Meier and BESAB Chair Jüri Elken decided to cancel the separate meetings of the two groups and have a joint meeting throughout.

13 members were present at Uppsala, 4 further participated via Skype.

TOP 1: Organizational Issues

1.1. Approval of the agenda

The agenda for the 6th BESSG meeting (Annex 1) was unanimously approved.

1.2. Approval of the previous Baltic Earth SSG meeting minutes

The minutes of the 5rd Baltic Earth SSG meeting were unanimously approved.

1.3. Review of the previous (#4) Baltic Earth SSG meeting action items

The following action items of the previous meeting were discussed:

- Draft and send out a Memorandum of Understanding (MoU) concerning a voluntary commitment to participation and contributions to Baltic Earth by Baltic Sea region research institutes (*Pending*) *This can only be finalized after the finalization of the Science Plan, as reference document of the MoU (see Item 6.5).*
- Start preparing the 2nd Announcement and Call for papers for the 1st Baltic Earth Conference, in particular to define thematic topics and sessions (*Done*) *See Item 4.2.*
- Future Earth activities and possible linkages/interfaces and possibilities for participation and collaboration with Baltic Earth (*Pending*) *See Item 5.2..*
- Chairmanship for GC5 and associated WG (Franz Berger, *pending*)
Franz Berger had communicated to be back in work and to continue his activity in Baltic Earth. Still a further communication still needs to be established.
- Science Plan Writing Team meeting in September (*Done*)
The meeting took place at IOW in Warnemünde, 27 and 28 January, with Markus Meier as host, and with Anna Rutgersson, Benjamin Smith and Marcus Reckermann as Writing Team

members. A draft text was produced including inputs from other SSG members which presented in Uppsala.

1.4. Membership issues

As had been communicated by E-Mail beforehand, two new BESSG members were proposed at the meeting; Corinna Schrum of Helmholtz-Zentrum Geesthacht (HZG, proposed by Hans von Storch) and Ralf Weisse from the same institute, proposed by Markus Meier. Corinna is the new institute head of the Institute of Coastal Research of HZG and is the successor to Hans von Storch in this function. She is an oceanographic modeler with a special interest in marine food web modelling. Ralf replaces Eduardo Zorita in the BESSG and WG on GC 4 (Sea level dynamics), and his research interests are climate variability and modelling, in particular wind, wave and storm surge climate, and mean sea level changes.

Decision 1: Corinna Schrum and Ralf Weisse new BESSG members

In June 2016, the 2-year membership term for BESSG chairs and members will terminate which commenced at the 3rd Baltic Earth Interim Science Steering Group in Lund, Sweden, with the installation of the BESSG as permanent Steering Group.

The 2-year term was discussed critically as being too short. The majority finally opted for a three year term for the future, but to keep the two year term for the running term. Thus, all members need to decide until June on their further commitment in the BESSG, which then would be a 3-year service in the Steering Group.

Already at this meeting in Uppsala, Markus Meier as BESSG Chair and Anna Rutgersson as BESSG Vice-Chair were unanimously approved in their positions for the new 3-year term until spring/summer 2019.

Decision 2: Extension of the 2-year term for BESSG chairman- and membership to a 3-year term, as of June 2016 (end of this next term in June 2019)

Decision 3: Markus Meier (chair) and Anna Rutgersson (vice-chair) were approved in their positions until June 2019

Furthermore it was noted that Chantal Donnelly had indicated to step back from the group, a replacement from SMHI was considered desirable. Erik Kjellström from the Rossby Centre/SMHI was suggested to be asked as new BESSG member. He would strengthen the field of regional climate modelling, and high resolution modelling to increase the predictive capability for extreme events. Various members emphasized the importance of a further engagement in the field of energy and water cycles, but further concrete names with international experience and standing to represent this topic were not mentioned. Also the merging of GC1 and GC5 was briefly discussed but no concrete steps were decided towards this end.

Decision 4: Erik Kjellström to be approached to join the BESSG

TOP 2: Report on Baltic Earth activities in 2014

2.1. Report of the International Baltic Earth Secretariat

Marcus Reckermann gave a short overview over the events and activities in which the International Baltic Earth Secretariat was involved in the past year, and the upcoming activities and events. They are further reported on and discussed below.

2.2. Report on EU ITN Proposal “ExtremeSeas”

Anna Rutgersson reported about the work to submit a proposal to the H2020-MSCA-ITN-2014 call. The proposal aims at fostering a new generation of European scientists being experts in climate change and associated high impact events ready to develop innovative adaptations (climate extreme expertise). The focus will be on the basic understanding for identifying and attributing high impact events and at describing the effects on offshore infrastructure and shipping, coastal engineering and urban planning, key areas with different responses. The consortium originates from Baltic Earth with links to GEWEX, Future Earth, HELCOM and BONUS, it is balanced with Universities with a tradition of training PhD students, research organizations with experience in applied science and non-academic partners adding experience in stakeholder communication and coastal/offshore engineering. The successful proposal would pay 15 early stage researchers for 3-4 years in 10 institutions around the Baltic Sea.

Update: The proposal was rejected; however, the network should be retained for future activities in this research field.

2.3 Baltic Earth Doctoral Students Conference in Estonia

Piia Post briefly reported on the Students Conference which took place at two locations in Estonia, Tartu/Vilsandi, 10-14 August 2015. The first 2 days were at the Museum and the Physicum of Tartu University, with 27 presentations by lecturers and by students. The last 2 days were spent on the remote westernmost island of Vilsandi. There, the 13 presentations were given by lecturers and students in the historic Vilsandi boat house. The lectures can be viewed at the Baltic Earth website at www.baltic.earth/tartu2015/.

2.4 Baltic Earth/BEAM Doctoral Course on Askö, Sweden

Markus Meier shortly reported about the Baltic Earth/BEAM Doctoral Course on “Impact of climate change on the marine environment with special focus on the role of changing extremes”, Askö, Sweden, 24-30 August 2015. 20 students took part in this summer school, supervised by 16 lecturers. Presentations were given by lecturers, but also students had to present their respective thesis topics. In addition to that, students had to perform a group task, which was to draft a proposal for a funding agency related to the topic of the course. Details on the course as well as presentations (pdf and films) can be seen at the Baltic Earth website at www.baltic.earth/asko2015/. Markus Meier announced that there will be another Baltic Earth summer school in Askö in late August/early September with a slightly different focus and less lecturers. Details can be seen at the Baltic Earth website at: www.baltic.earth/summerschool2016/.

Both summer schools are considered to be very good for community building.

2.5 Baltic Earth–HyMex Workshop in Rome, Italy

More than 60 scientists from various regional seas in Europe (Baltic Sea, Mediterranean Sea, Black Sea, Arctic Sea) met in Rome, Italy, to discuss different issues of regional climate modelling at the Baltic Earth–HyMex Workshop on “Joint regional climate system modelling for the European sea regions”, 5-6 November 2015. The workshop goal to establish scientific

and personal connections between the researchers of the various geographically-organized communities was a great success. The workshop also allowed discussing the major scientific challenges of the European sea regions research community for the coming years and decades. It was decided to write a « White Paper », summarizing the outcomes of the workshop and defining the community scientific open questions. This « White paper » may allow the European sea regions research community to efficiently interact with the GEWEX, CLIVAR and CORDEX programs as well as with the European and National funding agencies for the scientific research and the climate services. For presentations and a detailed workshop summary, please look at the Baltic Earth website: www.baltic.earth/rome2015/.

2.6 Second Baltic Earth - Gulf of Finland Seminar, Helsinki, Finland

Marcus Reckermann gave a brief overview over the Second Baltic Earth - Gulf of Finland Seminar "Exchange processes between the Gulf of Finland and other Baltic Sea basins", Helsinki, Finland, 17-19 Nov 2015. The main idea of the seminar was to describe interactions between the Gulf of Finland with the Baltic Sea, providing new information of the poorly-known exchange processes in between the basins. The interactions include meteorological, oceanographical and hydrological process descriptions. The intention was to give students working at Gulf of Finland issues the opportunity to present and discuss their work among each other, and also with the senior scientists present. The morning session was dedicated to four keynote presentations of experienced Baltic Sea and Gulf of Finland researchers, while PhD students presented their work in the afternoon session. Please find more information concerning the seminar at the Baltic Earth website at: www.baltic.earth/GoF2015/

2.7. Brief reports from the Working Groups

2.4.1. *WG on Salinity dynamics in the Baltic Sea (Andreas Lehmann, Kai Myrberg, Piia Post)*

The WG has been active in publishing a paper and several presentations at different events (EGU 2015, 2016), focussing at large volume changes and the recent Major Baltic Inflows. Actually there has been a lot of activity on this topic, e.g. the inflow workshop in Sopot. In fact at this time, 4 major inflow events have been detected within the past 1.5 years, and the salinity in the Gotland Sea is a high as in the 1950s. It is planned to collect all ongoing activities on the recent inflow events on the WG web pages of the Baltic Earth website. Also, the background on these events and their impact on the mid and long-term biogeochemistry should be explained at the outreach section of the website. All other WGs are asked as well to send information for the outreach section.

Markus Meier requested to become a new member of this WG. For approval at the next meeting in Nida.

Action Item 1 (to WG Chairs and members): Collect information on recent and planned activities related to the recent MBIs and pass on to Marcus Reckermann to post it on the website.

2.4.2. *WG on Land-Sea biogeochemical feedbacks (Gregor Rehder, Karol Kulinski, Ben Smith)*

The WG has been active in giving presentations and publishing papers with reference to Baltic Earth. Also an EU proposal is in preparation which is directly related to the WG work in Baltic Earth. It was noted that Bernd Schneider who has been active in the WG topics in the final BALTEX phase, is now working in Sopot as a scholar of the Polish ministry.

2.4.3. *WG on Natural hazards and extreme events (Anna Rutgersson, Jari Haapala, Martin Stendel)*
Main activity of the WG has been the preparation and submission of the EU proposal (see above, 2.2). A workshop should be discussed at the conference in Nida. Further aspects mentioned could be wind extremes and their impacts on wind and wave farming.

2.4.4. *WG on Understanding sea level dynamics (Eduardo Zorita, Anders Omstedt)*
A review paper should be written on the gaps of this topic, including sea level dynamics on different time scales, seiches, meteo-tsunamis, new technologies (satellites). A view on flood directives and strategies at the coast in the different countries would also be interesting to look at.

2.4.5. *WG on Understanding regional variability of water and energy exchanges (Franz Berger, Sergey Zhuravlev, Irina Partasenok)*
Several activities have been going on in Russia and Belarus related to this topic e.g. a project on the runoff in the Eastern Gulf of Finland, and two new master programmes in St. Petersburg.

2.4.6. *WG on Regional Climate System Models (Markus Meier)*
See the short description of the joint Baltic Earth-HyMex Workshop (see above 2.5.)

2.4.7. *WG on Scenario Simulations for the Baltic Sea 1960-2100 (Markus Meier)*
There will be a poster at the Baltic Earth Conference in Nida and a presentation at the CORDEX Conference in Stockholm, 17-20 May 2016. See a short description of the CORDEX Conference at www.baltic.earth.

2.4.8. *WG on Outreach and Communication*
A summary booklet of the BACC II book will be produced from an English text which is drafted by a native expert in science communication, based on Chapter 1 of the BACC II book. This basic English version will be then translated by scientists in the different countries into their own languages plus a regional part added to the general part. The general English version is currently in work; the regional part is in the responsibility of the different regional experts. There is no funding available for the different translations and regionalizations.

Sergey Zhuravlev requested to become a new member of this WG. For approval at the next meeting in Nida.

2.4.9. *WG on Education*
The major activities of this WG have been the two summer schools in Estonia and Sweden in 2015, and the preparation of another summer school in Askö, Sweden in 2016.

TOP 3: Baltic Earth Science Plan

3.1. **Open discussion on the Draft Baltic Earth Science Plan**

(Writing Team: Markus Meier, Anna Rutgersson, Benjamin Smith, Marcus Reckermann)

The draft version of the Science Plan was distributed beforehand to all participants. Written comments were sent by some members, but the majority of comments were given at this meeting. The main criticism was the lacking homogeneity, i.e. the document was considered not well balanced between the different components. The size was considered good but the question was posted who the audience for this document should be. It was then discussed and agreed on that this document is not intended to be a detailed scientific description of planned activities but a general description of what Baltic Earth is, what components it has and what it

intends to do. It should be primarily aimed at scientists and science managers, also from other research networks, who should be persuaded to support Baltic Earth through collaboration.

More specific comments:

- too vague and general
- different parts and GCs need to be better balanced
- legacy part on BALTEX missing
- interactions and linkages missing
- mismatch between vision and GCs
- community building needs stronger representation
- links to stakeholders to be better represented
- data assimilation and model development needed
- benefits for participating scientists should be clear
- highlight how GCs can contribute to management issues
- include how to link science and management
- political dimension is missing

The Science Plan will be finalized before the Nida Conference where it will be presented to the community. The final document will be published online and in print as an International Baltic Earth Secretariat Publication in later summer 2016.

TOP 4: Upcoming Baltic Earth activities

4.1 General discussion on the format and frequency of future Baltic Earth Conferences

The main question discussed here was whether the conferences should have a new 2-year cycle, or maintain the old BALTEX-style 3-year cycle. As the Baltic Sea Science Congress has a 2 year cycle and draws about 300 participants with strongly overlapping topics, there may be a conflict in years at which both conferences are taking place. So a 2 year-cycle would be beneficial here. Other arguments for a 2-year cycle are the higher relevance for PhD students and projects.

Decision 5: It was decided to have a two year term for Baltic Earth Conferences (even years). The format remains to be decided on. An option could be a shorter 3-days conference alternating with a full 5-days conference.

4.2 1st Baltic Earth Conference in Nida, Lithuania

The preparations for the conference are well on track. 134 abstracts have been submitted, and approximately 150 participants are expected.

Decision 6: It was decided to install a new Working Group on “Multiple Drivers of regional Earth System changes in the Baltic Sea region”. Also the management dimension should be considered (*Suggested members are Marcus Reckermann, Benjamin Smith and Juris Aigars; Juha-Markku Leppänen to be asked for management/governance*)

4.3 Second Workshop on the ‘Major Baltic Inflow of December 2014’

The main aims of the workshop in Sopot, Poland on 13 April 2016 at IOPAN, Sopot, Poland are to provide an overview of existing measurements, to trace the evolution of geophysical fields after the inflow, to identify gaps in observations, to discuss joint publications and to foster further research projects related to this event.

- 4.4 Baltic Earth-BACC-NOSCCA Session at EGU 2016
For the second time this session at the EGU General Assembly 2016 in Vienna, Austria, 18-22 April 2016 brings together the Baltic and North Sea communities interested in the regional climate change and their impacts. 21 abstracts were submitted.
- 4.5 3rd Baltic Earth Summer School
This summer school which will be held 29 August – 4 September 2016 on the topic of “Climate change in the Baltic Sea region” will be co-organized by Baltic Earth, Stockholm University and Leibnitz Institute for Baltic Sea Research Warnemünde. Scope will be the more physical aspects of regional climate change in the Baltic Sea region.
- 4.6 Baltic Earth Seminar on “Exchange processes between the North and Baltic Seas”
This will be an outreach event with general overview presentations for the interested non-scientific professional. It will be held on 21 September 2016 at Hafencity University Hamburg, Germany, as a partner event during the Fehmarn Belt Days 2016. Audience at the Fehmarnbelt Days will be primarily regional policy makers and managers from the southwest Baltic Sea region (Denmark, Germany, southern Sweden)

TOP 5. Baltic Earth international embedding and cooperation

- 5.1 Initial Application for Partnering with Future Earth
An application for partnering with Future Earth was submitted, a response is still pending (to be investigated).
- 5.2 GEWEX-GHP connection
It was again discussed if Baltic Earth should apply with GEWEX as Regional Hydroclimate Project. It was decided to present the Science Plan at the GEWEX-GHP Meeting at the meeting in Gif-sur-mer near Paris, France, 3-5 Oct 2016. However, in the absence of Baltic Earth scientists interested in the GEWEX engagement, it may be difficult to follow up on this.

Action Item 2 (to Marcus Reckermann, Sergey Zhuravlev): Related to international embedment, it was decided to prepare a typology or inventory of Earth System research organizations and networks which may be relevant for Baltic Earth.

TOP 6: Miscellaneous Baltic Earth issues and potential activities

- 6.1 Possible extension of Baltic Earth research interests to the North Sea
This issue came up with the extension of the BONUS research area to the North Sea. An open discussion was held around the question whether Baltic Earth should also extend its geographical scope to the North Sea region. It was discussed that the BONUS extension was not a scientific but a political decision. Baltic Earth as scientifically driven research network should be aware of this fact. Also the topical scope of BONUS towards Blue growth is politically driven rather than scientifically. The question to answer here is the self-concept of Baltic Earth; does it strive for influencing the funding activities within the EU rep. BONUS? Or is it a purely basic research driven network? An extension may possibly contribute to losing identity, personal networks, and reduce the respective roles of small countries. Other sea regions may be more or equally relevant, like the Black Sea or other similar sea regions.

For the time being, an extension to the North Sea was not favored although some issues may be scientifically sensual to look at from a broader regional perspective, e.g. sea level rise.

Alternatively it was suggested to form a “network of regional networks”. For this purpose, a new Working Group shall be initiated whose task it would be to find contacts and initiate a network with other marginal seas, e.g. the North Sea, the Black Sea, the Mediterranean Sea, the Laptev Sea, the Chesapeake Bay, and the Chinese Bo Hai.

Decision 8: Decision to form a WG on Regional Seas (Marginal Seas). Suggested names for this WG: Corinna Schrum, Kai Myrberg, Ralf Weisse. For approval at the next meeting in Nida.

- 6.2 Oxford Research Encyclopedia article series or special project as BACC successor
Hans von Storch, initiator and chairman of BACC 1 and BACC 2, proposed a possible format for a next BACC effort. The suggested format is a collection of articles within the newly installed Oxford Research Encyclopedia (ORE). ORE represents a series of peer-reviewed, online reference articles on specific topics, planned, written, and reviewed by scientists. The aim is to provide a series of in-depth articles on the various aspects of a given topic. The ORE website will be continuously updated with new articles and revisions to existing ones as new knowledge has emerged.

Thus, an ORE collection of articles under the topic “Climate change in the Baltic Sea region” (i.e. “BACC III”) would encompass the complete thematic envelope of the previous BACC assessments plus new ones, as they appear adequate. The articles would describe the “settled” scientific knowledge of a specific aspect of the overall theme but would also address the history, competition and significance of ideas. The intended audience embraces specialists in the science, non-specialists with some understanding of the issues, as well as experts, researchers, educators and students in the science and related fields.

Hans gave a brief overview presentation on this suggested format, followed by a discussion of the pros and cons. The previous book format of BACC has provided detailed access to scientific issues of the region, attempting to make the results independent of personal preferences, and gave high visibility to BALTEX/Baltic Earth. These qualities could be retained in the new format, given a proper selection and briefing of authors (with a dedicated review process helping). A disadvantage of the new format is that it will not be available as Open Access from next year on. But this would not necessarily be the case for any other (book) format in the future as well, as it involves a high financial engagement of the organizing institution.

Decision 9: It was decided to prepare a collection of articles in this framework. Marcus Reckermann and Anders Omstedt agreed to act as Editors.

Decision 10: A Working Group on BACC III should be installed whose task it would be to identify topics for the new and oversee the process. (Suggested names, to be asked: Illpo Vuorinen, Erik Kjellström, Jouni Räisänen)

- 6.3 Outreach issues

An Outreach and Communication plan was suggested to be provided by the WG for Outreach, which should give a definition of what we mean by the term “outreach and communication” and list possible and ongoing activities.

Action Item 3 (to WG members for Outreach and Communication) to draft an Outreach and Communication Plan

To improve the outreach component of Baltic Earth, it was discussed to prepare a section of the Baltic Earth website accessible to the scientifically non-educated but interested public.

WGs are asked to write a section on their topic, explaining the background and why it is relevant to do research on, what we expect to come out of the research, and what the benefits for society are.

Decision 11: Web site section for non-scientists to be developed

Action Item 4 (to all WGs) to send background explanatory information to Marcus Reckermann to post it on the outreach pages of the Baltic Earth website.

6.4 Format of BESSG meetings

It was discussed how to improve the efficiency of the BESSG meetings. The sequence of a meeting very half year should be retained, and the Advisory Board should be invited to all meetings. Furthermore, the tradition of a scientific seminar connected to the BESSG meeting, to be organized by the host institute should be revived. Also, at each meeting, one WG should be responsible to give a scientific overview presentation on the current state of the art in the respective WG research field.

6.5 Memorandum of Understanding – Motivation and Status

The MoU will be finally drafted after the Science Plan has been published.

6.6 Time and place of the next two Baltic Earth Science Steering Group Meetings

7th BESSG Meeting in Nida, Lithuania, 12 June 2016, 16:00

8th BESSG Meeting in Warnemünde, Germany in March 2016/2017 (with seminar, date and time to be determined)

Draft minutes

Marcus Reckermann, 27 May 2016

Markus Meier, 30 May 2016

Final version: 9 June 2016

Abbreviations and Acronyms

BACC	BALTEX or Baltic Earth Assessment of Climate Change for the Baltic Sea basin
BALTEX	The Baltic Sea Experiment
BEAM	Baltic Ecosystem Adaptive Management, a five-year research programme (2010-2014, and prolonged 2015) on ecosystem-based management of the Baltic Sea by the Baltic Sea Centre at Stockholm University
BESAB	Baltic Earth Senior Advisory Board
BESSG	Baltic Earth Science Steering Group
BONUS	Joint Baltic Sea research and development programme of the EU
BSSC	Baltic Sea Science Congress
CLIVAR	Climate and Ocean - Variability, Predictability, and Change
CORDEX	Coordinated Regional Climate Downscaling Experiment
EGU	European Geosciences Union
Future Earth	Global research platform for global environmental change
GC	Grand Challenge
GEWEX	Global Energy and Water Cycle Exchanges
GHP	GEWEX Hydrometeorological Panel
H2020 MSCA ITN 2014	Marie Skłodowska-Curie Action: Innovative Training Networks in Horizon 2020 by the EU
HELCOM	Helsinki Commission for the protection of the Baltic Sea
HyMex	Hydrological cycle in the Mediterranean Experiment
HZG	Helmholtz-Zentrum Geesthacht
IBES	International Baltic Earth Secretariat
IBESP	International Baltic Earth Secretariat Publication Series
IOW	Institut für Ostseeforschung Warnemünde (Baltic Sea Research Institute)
ISSN	International Standard Serial Number
MBI	Major Baltic Inflows
MoU	Memorandum of Understanding
NOSCCA	North Sea Climate Change Assessment
RHP	Regional Hydroclimate Project (in GEWEX)
ORE	Oxford Research Encyclopedia
SMHI	Swedish Meteorological and Hydrological Institute
SYKE	Finnish Environment Institute
WG	Working Group

Annex 1: Agenda of the 4th BESSG meeting



6th Meeting of the Baltic Earth Science Steering Group (BESSG)

7 and 8 March 2016

Geocentrum
Uppsala University
Sweden

PROVISIONAL AGENDA (As of 11 February 2016)

The 6th Baltic Earth Science Steering Group Meeting is a 1.5-day meeting and takes place at the Geocentrum of Uppsala University, Sweden. Anna Rutgersson is our host for this meeting. The meeting will also host the Baltic Earth Senior Advisory Board (BESAB), which will have a separate meeting in the morning of 8 March, and apart from that, will join the BESSG meeting.

The dominant topic of this meeting is the Baltic Earth Draft Science Plan, which will be available as first draft. Other topics are the upcoming events in 2016, and the bonds to Future Earth and GEWEX.

Day 1 Monday 7 March 2016

9:30 **Welcome Coffee**

PART 1: Joint meeting of the BESSG and the BESAB

10:00 **Welcome by the host and logistic information**
Anna Rutgersson, Uppsala University

10:10 **Introduction to the meeting by the Baltic Earth SSG Chairman**
Markus Meier, Baltic Sea Research Institute Warnemünde

10:20 **TOP 1: Organisational issues**

- 1.1 Approval of the agenda
- 1.2 Approval of the previous 5th Baltic Earth SSG meeting minutes
- 1.3 Review of previous 5th Baltic Earth SSG meeting action items
- 1.4 Membership issues:
 - Corinna Schrum, Ralf Weisse proposed as new BESSG members
 - 2-year memberships end in June 2016 (Nida Conference); may be renewed

- 10:40 TOP 2: Reports on Baltic Earth activities in 2015**
- 2.1 Report of the IBES
Marcus Reckermann (10 min)
 - 2.2 EU ITN Proposal “ExtremeSeas”
Anna Rutgersson (5 min)
 - 2.3 Baltic Earth Doctoral Students Conference, Tartu/Vilsandi, Estonia, 10-14 August 2015
Piia Post (5 min)
 - 2.4 Baltic Earth/BEAM Doctoral Course on “Impact of climate change on the marine environment with special focus on the role of changing extremes”, Askö, Sweden, 24-30 August 2015
Markus Meier (5 min)
 - 2.5 Baltic Earth –HyMex Workshop on Regional Climate Modelling in Rome, Italy, 5-6 November 2015
Markus Meier (5 min)
 - 2.6 2nd Baltic Earth - Gulf of Finland Workshop "Exchange processes between the Gulf of Finland and other Baltic Sea basins", Helsinki, Finland, 17-19 Nov 2015 and Special Issue
Kai Myrberg (5 min)
 - 2.7 Brief reports from the Baltic Earth Working Groups (*5 min each*)
 - 1. Salinity dynamics in the Baltic Sea (Andreas Lehmann, Kai Myrberg)
 - 2. Land-Sea biogeochemical feedbacks (Gregor Rehder, Karol Kulinski, Ben Smith)
 - 3. Natural hazards and extreme events (Anna Rutgersson, Jari Haapala, Martin Stendel)
 - 4. Understanding sea level dynamics (Eduardo Zorita, Anders Omstedt)
 - 5. Understanding regional variability of water and energy exchanges (Franz Berger, Sergey Zhuravlev, Irina Partasenok)
 - 6. Regional Climate System Models (Markus Meier)
 - 7. Scenario Simulations for the Baltic Sea 1960-2100 (Markus Meier)
 - 8. Outreach and Communication (Hans von Storch, Carin Nilsson, Markus Meier, Marcus Reckermann)
 - 9. Education (Piia Post, Markus Meier, Marcus Reckermann)
 - 2.8 Brief reports from institutions and countries on Baltic Earth relevant activities (*5 min each*)

12:30 Lunch

- 13:30 TOP 3: Baltic Earth Science Plan**
- 3.1 Presentation by Science Plan Team
Markus Meier, Anna Rutgersson, Ben Smith, Marcus Reckermann
 - 3.2 Open discussion

15:30 Coffee

16:00 Baltic Earth Science Plan
continued

18:00 End of Day 1

19:00 Dinner

Day 2 Tuesday 10 March 2015

9:00

TOP 4: Upcoming Baltic Earth Activities

- 4.1 Baltic Earth – BACC-NOSCCA Session at EGU, Vienna, Austria, 18-22 April 2016
Marcus Reckermann (10 min)
- 4.2 1st Baltic Earth Conference, 13-17 June 2016 in Nida, Curonian Lagoon, Lithuania (“Multiple drivers for Earth system changes in the Baltic Sea region”)
Inga Dailiniende, Marcus Reckermann (10 min)
- 4.3 3rd Baltic Earth Summer School, 29 Aug - 4 Sep 2016 on Askö, Sweden
Markus Meier (10 min)
- 4.4 Baltic Earth Topical Seminar, 21 Sep 2016 at Hafencity University Hamburg, Germany, on “Exchange processes between the North and Baltic Seas” during the FehmarnbeltDays 2016
Marcus Reckermann (10 min)
- 4.5 Other Baltic Earth related events:
Second Workshop on the ‘Major Baltic Inflow of December 2014’, 13 April 2016 at IOPAN, Sopot, Poland

10:00

TOP 5: Baltic Earth International embedding and cooperation

- 5.1 Baltic Sea Science Congress preparation
(Report from the meeting in Warnemünde, 8-10 Feb)
- 5.2 Initial Application for Partnering with Future Earth
(sent to Future Earth by MR)
- 5.3 Application for GEWEX-GHP Initiation Status as Regional Hydroclimate Project – Status and prospects for the upcoming GEWEX GHP meeting in Gif-sur-mer near Paris, France, 3-5 Oct 2016

10:30

Coffee

PART 2: Separate meetings of the BESSG and the BESAB

BESAB-Meeting:

11:00 Internal SAB discussion of Baltic Earth items

BESSG-Meeting:

11:00 TOP 6: Miscellaneous Baltic Earth issues and potential activities

- 6.1 Oxford University Press Encyclopedia Volume as BACC successor
- 6.2 Time and place of 7th Baltic Earth Science Steering Group Meeting: Nida, Lithuania, 12 June 2016, 14:00
- 6.3 Memorandum of Understanding – Motivation and Status
- 6.4 Miscellaneous

12:30

Lunch

PART 3: Reconvening of BESSG and BESAB

13:30 Comments and recommendations by BESAB for BESSG and open discussion

15:00

End of the meeting

Annex 2: Participant list

Baltic Earth Science Steering Group (BESSG)

Juris Aigars
Karol Kulinski
Markus Meier
Anders Omstedt
Piia Post
Marcus Reckermann (also IBES)
Anna Rutgersson
Benjamin Smith
Martin Stendel
Hans von Storch
Sergey Zhuravlev (only via Skype)
Corinna Schrum (Day 1)
Ralf Weisse (via Skype)

Baltic Earth Senior Advisory Board (BESAB)

Anrid Andrusaitis (observer) (via Skype)
Deliang Chen
Jüri Elken
Kay Emeis
Fritz Köster (only Day 2)
Ulla Li Zweifel (via Skype)