



Minutes of the
5th Meeting
of the Baltic Earth
Science Steering Group

held at

**Radisson Blu Latvija
Riga, Latvia**

18 June 2015

Edited by

Marcus Reckermann

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Introduction

This 5th Baltic Earth Science Steering Group Meeting was a short 1.5 h meeting in connection with the 10th Baltic Sea Science Congress in Riga.

1 Organisational issues

1.1 Approval of the agenda

The agenda was unanimously approved, with two amendments:

- The “Four Seas” Initiative (see Item 3.5)
- The potential “Baltic Year” Initiative (see Item 7.3)

1.2 Approval of the previous 4th Baltic Earth SSG meeting minutes

The 4th Baltic Earth SSG meeting minutes were unanimously approved.

1.3 Review of the previous 4th Baltic Earth SSG meeting action items

- 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.

(See below, Item 5).

- Start preparing the 2nd Announcement and Call for papers for BEC1, in particular to define thematic topics and sessions.

(See below, Item 3.5)

- Future Earth activities and possible linkages/interfaces and possibilities for participation and collaboration with Baltic Earth.

MR will make some research concerning procedures for collaboration; Deliang Chen will be asked to report on developments and potential options for BE.

1.4 Membership issues

Different membership issues are open:

- Interim or permanent replacement for Franz Berger (GC 5)
- Replacement for Eduardo Zorita (GC 4)
- Succession of Hans von Storch as HZG representative

This item was postponed to the next BESSG meeting, all members are asked to think about possible candidates.

2. Recent activities

Marcus Reckermann shortly reported on activities since the previous BESSG meeting.

2.1 Joint NOSCCA/BACC II Session at EGU2015

The Baltic Earth Secretariat, together with the coordinators of the North Sea climate change assessment project NOSCCA, organized a joint session which aimed to bring together the results of both recent regional climate change assessments, BACC II and NOSCCA.

The half-day session was called “Climate change assessments for the Baltic and North Sea regions: Observations, model projections and impacts” and was one of the opening sessions of the conference on Monday 13 April. Despite strong competition, the lecture hall was almost “sold out”, and we counted nearly 100 participants. The oral session with 12 talks in the morning was complemented by a poster session in the evening, during which 17 posters were on display.

The concept to bring together the two assessments proved to be successful, which was shown by the large number of participants and vivid discussions at both the oral and poster sessions.

2.2 BACC II Launch at ECCA2015 and related activities

On 14 May, the new book on climate change in the Baltic Sea basin and related impacts was presented and discussed at the 2nd European Climate Change Adaptation Conference (ECCA) in Copenhagen. This event seemed perfect for this purpose as several hundred scientists, practitioners, politicians and other stakeholders gathered at the ECCA conference to discuss the state of the science and adaptation strategies regarding the challenge of climate change.

In the morning, Marcus Reckermann, coordinator of the book project, presented some core results on behalf of the authors. Then, in a midday plenary, BACC initiator and chairman Hans von Storch of the Helmholtz-Zentrum Geesthacht and University of Hamburg, gave some background information on the BACC scope and process, followed by a vivid panel discussion. Members of the discussion panel next to Hans were Deliang Chen of the University of Gothenburg, Sweden, renown climate scientists and former Executive Director of ICSU (International Council of Science), Lykke Leonardsen, co-organizer of the ECCA conference and head of the Climate Unit of the City of Copenhagen, and Maxi Nachtigall, Advisor at CBSS (Council of the Baltic Sea States), a political forum for regional intergovernmental cooperation between the Baltic Sea states. The midday session was chaired by Jürgen Kropp of Potsdam Institute for Climate Impact Research, and the discussion was moderated by Marcus Reckermann of the International Baltic Earth Secretariat.

The discussion evolved around two questions: Firstly, what are the differences between BACC and the IPCC reports (and why are regional reports necessary), and secondly, specifically addressed to the two ladies, what is the use for stakeholders?

A brief summary can be found on the BACC Blog (http://thebaccblog.blogspot.com/2015/05/bacc-book-presented-and-discussed-at_26.html).

Marcus Reckermann took the opportunity at ECCA 2015 to ask Deliang Chen a few questions concerning BACC and Baltic Earth. The interview can be read at <http://thebaccblog.blogspot.com/2015/05/deliang-chen-on-bacc-and-baltic-earth.html>.

2.3 National and international press response to BACC II and downloads

Various German print media (Welt, Hamburger Abendblatt, Schleswig-Holsteinischer Zeitungsverlag)
Various blogs (Kalte Sonne, Klimaretter, Klimabündnis Kieler Bucht)
Two Radio interviews (Deutschlandfunk, NDR)
Polish newspaper

Downloads as of 18 June 2015: 40,751 (mostly Ch. 1; other chapters around 2,000)

3. Upcoming activities

3.1 Summer Schools in Tartu and Askö in August

Piia Post and Markus Meier shortly reported on the status of preparation for the two Baltic Earth summer schools. For Tartu and Vilsandi, 27 applications were received, and all were accepted. For Askö, 31 applications were received, of which 20 were accepted and 7 were put on a reserve list, as they may still be accommodated in the course budget (will be clear at end of July); 4 were rejected due to incomplete applications. It was observed at both summer schools that physical oceanographers were in the minority of applicants; this was attributed to the overall low number of students in this discipline, as compared to biological oceanography. Both summer schools are well in preparation with no problems foreseen.

3.2 Science Plan Writing Team meeting in September

A meeting of the Science Plan Writing Team (Markus Meier, Anna Rutgersson, Marcus Reckermann, Ben Smith, Deliang Chen) shall be attempted to be organized in September.

3.3 Rome Workshop in November

A joint workshop of Baltic Earth and HyMex will be organized in Rome, Italy, 5-6 November 2015. This is the first joint event with a major organisation from another region. Such collaborations and joint events had been one of the new aspects for Baltic Earth.

The workshop aims to contribute to the understanding of regional energy, momentum, water, and matter fluxes and their effects on the regional climate using observations and Regional Climate System Models (RCMSs) encompassing processes in the atmosphere, land, sea, and anthroposphere. In this workshop, we will focus on European seas and their catchment areas like the Mediterranean Sea, Black Sea, North Sea, Baltic Sea and Arctic Ocean - highly sensitive areas where global models fail to give reliable information about changing climate because key processes are not properly resolved.

See www.baltic-earth.eu/rome2015/

3.4 Gulf of Finland (Tallinn) Workshop in November

The main idea of the seminar is 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 latter part of the seminar is devoted to presentations by PhD students. Students are invited to submit an abstract of their presentation which should be based on their PhD theses which are related to any of the above keynote topics. A selection of oral/poster presentations will be based on the submitted abstracts. The best student presentation is honored with a GoF prize. All participants with oral/poster presentations will be eligible to send manuscripts to a Special issue of the Journal of Marine Systems.

See www.baltic-earth.eu/GoF2015/

3.5 Themes/sessions and 2nd Announcement/Call for BEC1

The 2nd Announcement for the 1st Baltic Earth Conference shall be published and sent out in Autumn 2015, i.e. October–November. Prior to that, scientific topics and/or sessions should be defined, connected to the title of the conference “Multiple drivers for Earth system changes in the Baltic Sea region”. While the title was confirmed (reflects the initially proposed but postponed GC 6), it was further proposed to install sessions according to the Grand Challenges. There should be keynote speakers in each session, and also experts on the general topic of the conference, namely the multiple drivers for changes and their interactions and mutual influences. Keynote speeches should not be longer than 30 min, plus 10-15 min for discussion. In general, much time should be devoted to free time and discussions (2h lunch break). Poster sessions should be well prepared and have a high priority next to the oral talks. There should be 1 slide presentations by poster authors to shortly (1 min) attract attention for their poster.

Names for potential keynote speakers and topics shall be asked from BESSG and BESAB members by e-mail (deadline end of August)

HvS suggested a session dedicated to the “Four Seas” (Annex 4) which is a Sino-German initiative for a comparative research initiative for the Baltic/North Seas and Bo/Huang Hai (Sea) in China. Although originating in a bilateral activity, this has clear implications and relevance for the Baltic Sea region as a whole. This was taken up positively and it will depend on the Chinese participation as well as interests from other seas (Mediterranean, Black Sea etc.) whether this will be a dedicated single session or a joint session to compare the Baltic Sea regions with other sea regions.

4. Discussion of the SAB recommendations (identity and vision, science plan) as laid out in the 4th BESSG meeting minutes

Jüri Elken as representative of the BESAB again summarized the recommendations by the BESAB concerning the Science Plan, which should be a short and concise, well written document, with a clear vision and identity of Baltic Earth. A work and implementation plan with planned activities shall be given in a separate document.

5. Memorandum of Understanding and/or Letter of Interest; Discussion of a draft text

A very preliminary MoU was drafted by MR and sent to BESSG and BESAB members; it was presented at the meeting. All members were asked to comment. A finalization will be possible only after the completion of the Baltic Earth Science Plan. See Annex 3.

6. Follow up of BACC II, first thoughts

HvS suggested contributions in the form of single papers which can be organized as thematic packages to the newly established Oxford Research Encyclopedia (ORE), which has the scope of providing overviews over the current state of knowledge in different fields. HvS is Chief Editor of the Climate Science branch of ORE. It will be necessary to investigate the conditions further, if this could be a possible option for a “BACC III” type activity. The question was also discussed whether a comprehensive and compact book or a collection of papers which different publication dates would be better.

It was also remembered in this respect that other regional thematic assessments, not only on climate change, have been one suggested activity and outcome for Baltic Earth, already mentioned in the PostBALTEX report. It will need to be examined if the ORE approach could be a possibility for these assessments as well.

7. Miscellaneous/Infos**7.1 ExtremeBaltic Proposal failed second time**

The proposal failed by few points; the main criticism was the missing European dimension. It was recommended to try a third time, with a new consortium which includes participants from other European Seas.

7.2 Working Group on Regional Climate System models should apply for CORDEX project

It will be investigated whether there is interest within the working group on regional climate system models to apply for a CORDEX sub-project for the Baltic Sea – North Sea region. Criteria for Selecting and Updating CORDEX domains are available now on the CORDEX site (<http://www.cordex.org/index.php/community/domains>). Domains receiving an official CORDEX designation must satisfy the criteria outlined in this document.

7.3 A “Baltic Sea Year”

In the aftermath of the Gulf of Finland Year 2014, and the presentation by Kai Myrberg at BSSC 2015, it was suggested to have a similar activity on a Baltic Sea wise scale, a “Baltic Sea Year”. It was further suggested that Baltic Earth could play a role in the organization of such a hypothetic event. Nevertheless, a clear goal and scope needs to be developed as well as an organisation consortium and participating institutions (e.g. HELCOM, BONUS, major oceanographical institutions). The idea is rather vague at this stage and needs further elaboration and concretization. A hook for such a BSY could be the measurements and subsequent analysis and modelling of the post-MBI 2014 changes in hydrography and biogeochemistry in the different basins of the Baltic Sea.

8. Next meetings of BESSG and BESAB**Next full 1.5 day meeting in February – March 2016**

- Uppsala, Sweden (Anna Rutgersson will be host)
- Doodle will be started to ask for best days

Next short half-day meeting connected the 1st BEC

- Sunday 12 June 2016, 14:00 in Nida, Lithuania, or other suitable time slot, to be announced in due time

Draft minutes

Marcus Reckermann, 19 June 2015

Amended and approved

Markus Meier, 27 July 2015

Abbreviations and Acronyms

BACC	BALTEX or Baltic Earth Assessment of Climate Change for the Baltic Sea basin
BEC1	1 st Baltic Earth Conference
BESAB	Baltic Earth Senior Advisory Board
BESP	Baltic Earth Science Plan
BESSG	Baltic Earth Science Steering Group
BONUS	Joint Baltic Sea research and development programme of the EU
CBSS	Council of the Baltic Sea States
Cordex	Coordinated Regional Climate Downscaling Experiment
ECCA	European Climate Change Adaptation Conference
EGU	European Geosciences Union
Future Earth	Global research platform for global environmental change
GC	Grand Challenge
HELCOM	Helsinki Commission for the protection of the Baltic Sea
HyMex	Hydrological cycle in the Mediterranean Experiment
IBCC	Intergovernmental Panel on Climate Change
ICSU	International Council of Science
MBI	Major Baltic Inflows
MoU	Memorandum of Understanding
NDR	Nordeutscher Rundfunk (Northern German Broadcasting)
NOSCCA	North Sea Climate Change Assessment
ORE	Oxford Research Encyclopedia
RCSM	Regional Climate System Model
SAB	Senior Advisory Board
SSG	Science Steering Group

Annex 1: Agenda of the 4th BESSG meeting**5th Meeting of the
Baltic Earth Science Steering Group
(BESSG)****Thursday 18 June 2015****Hotel Radisson Blu Latvija
Riga, Latvia****PROVISIONAL AGENDA**

(As of 17 June 2015)

This 5th Baltic Earth Science Steering Group Meeting is a very short 1.5 h meeting in connection with the 10th Baltic Sea Science Congress in Riga. It takes advantage of many BESSG members being in Riga for this event, saving additional travel efforts.

Venue: Hotel Radisson Blu Latvija, Room Beta 2

15:50 Welcome by the chair
*Markus Meier, SMHI, Sweden***15:55 Organisational issues**
1.1 Approval of the agenda
1.2 Approval of the previous 4th Baltic Earth SSG meeting minutes
1.3 Review of the previous Baltic Earth SSG meeting action items
1.4 Membership issues**16:10 Recent activities**
- Joint NOSCCA/BACC II Session at EGU2015
- BACC II Launch at ECCA2015
- National and international press response to BACC II, downloads
- Interview with Deliang Chen
- Support letters for Ralf Bennartz, Jari Haapala**16:30 Upcoming activities**
- Summer Schools in Tartu and Askö in August
- Science Plan Writing Team meeting in September
- Rome Workshop in November
- Gulf of Finland (Tallinn) Workshop in November

- Themes/sessions and 2nd Announcement/Call for BEC1
- 16:50 Discussion of the SAB recommendations (identity and vision, science plan)**
as laid out in the 4th BESSG meeting minutes
- 17:20 Memorandum of Understanding and/or Letter of Interest**
Discussion of a draft text
- 17:40 Follow up of BACC II, first thoughts**
- 17:50 Miscellaneous/Infos**
 - ExtremeBaltic Proposal failed second time
 - Working Group on Regional Climate System models should apply for CORDEX project
 - Other issues
- 18:00 Next meetings of BESSG and BESAB**

Next full 1.5 day meeting in December 2015 – March 2016
- Time and location to be determined

Next short half-day meeting connected the 1st BEC
- Sunday 12 June 2016, 14:00 in Nida, Lithuania
- 18:10 End of the meeting**

Annex 2: Participant list

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Jüri Elken (BESAB), Marine Systems Institute, Tallinn University of Technology, Estonia
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Annex 3: Draft text for a Memorandum of Understanding for Baltic Earth**Preamble**

The Baltic Earth SSG has the firm belief that to promote Earth system research in the Baltic Sea region, a close collaboration of scientists and institutions is crucial. As a true international and interdisciplinary research community, BE strives to facilitate this collaboration by providing a platform on which communication and collaboration among scientists from different disciplines, institutes and countries can thrive.

This Memorandum of Understanding (MoU) aims at stating common goals on which the different institutions can agree on.

Article 1 General statements regarding this Memorandum of Understanding

1. The purpose of this MoU is to state the general willingness of the signing institutions in the Baltic Sea region (“parties”) to contribute to a common research community without touching on the diversity and special conditions under which the different institutions and countries operate.
Participating parties will contribute according to their own rules and preferences.
2. It is understood that the scientists employed by the participating parties are the actual drivers of activity, and that, as far as possible, they should be granted the possibility to contribute to Baltic Earth activities by joint projects and the possibility to attend and engage in Baltic Earth meetings, workshops, conferences, summer schools etc.
3. Baltic Earth is a research network with no central funding. Baltic Earth activities will involve as little external funding as possible, but it is understood that some events may require the financial support by one or several parties. These contributions shall be voluntary, on an event-to event basis and according to the budget constraints of the respective party. There is no obligation whatsoever for any financial commitment by any party.
4. While all parties have the firm intention to adhere to the terms of this MoU, it is understood that this document has no legal implications. This MoU shall in particular not constitute any legally binding obligations among the parties.

Article 2 Parties to this Memorandum of Understanding

1. The parties of this MoU are research institutes or institute divisions, universities or university divisions, national hydrometeorological services or divisions, or other organizations which are relevant for and can contribute to Baltic Earth topics. They are listed in Annex 1. Annex 1 constitutes an open list, being subject to changes.

2. Annex 1 also includes the names of the contact persons at the parties responsible for the contributions to Baltic Earth. It is again understood that the list is an open product subject to change as individuals or institutions join or leave this MoU.
3. There is no hierarchy concerning the participating parties. The International Baltic Earth Secretariat at Helmholtz-Zentrum Geesthacht acts as central administrative coordination node.

Article 3 Description of potential Baltic Earth activities

1. General description based on Science Plan and Implementation Plan
2. Research activities according to GCs
 - Observational activities
 - Modelling activities
 - xxx
3. Educational activities
 - Summer Schools
 - xxx
4. Meetings, conferences etc
 - BESSG meetings
 - BESAB meetings
 - BE workshops and seminars
 - BE conferences
5. Publications
 - BEPS
 - Newsletter
 - Journal articles
 - Book chapters and books
6. xxx

Annex 4: Memorandum on the Sino-German initiative “The Four Seas”

The Four Seas 四海

Memorandum on Sino-German coastal research

Dealing with Bo Hai and Huang Hai as well as Baltic and North Sea regions

Hans von Storch, Detlef Schulz-Bull, Jiang Wensheng 江文胜 and Luo Yongming

骆永明

Co-signed by

边昌伟(Bian Changwei, OLUC), 陈新平(Chen Xinping, SOA-NMHMC), 陈建芳 (Chen Jianfang, SOA-Second institute of Oceanography), 陈学恩 (Chen Xueen, OUC), Ralf Ebinghaus (HZG), Kay Emeis (HZG), Holger Freund (U Oldenburg), Peter Fröhle (TU Hamburg-Harburg), 傅刚 (Fu Gang, OUC), Jürgen Jensen (U Siegen), 李克强 (Li Keqiang, OUC), 李晓明 (Li Xiaoming, CAS-Institute of Remote Sensing and Digital Earth), 李琰 (Li Yan, SOA-NMSDIS), 李强 (Li Qiang, Tsinghua U), 刘东雁 (Liu Dongyan, YIC-CAS), 刘素美 (Liu Sumei, OUC), Markus Meier (IOW), 牟林(Mu Lin, SOA-NMSDIS), Kai Myrberg (SYKE, Helsinki), Thomas Pohlmann (U Hamburg), Beate Ratter (HZG), Gudrun Rosenhagen (DMG), Gerald Schernewski (IOW; EUCC), Torsten Schlurmann (U Hannover), Corinna Schrum (U Bergen), 孙军 (Sun Jun, Tianjin University of Science and Technology), Jürgen Sündermann (U Hamburg), 魏皓 (Wei Hao, Tianjin University), Jörg Olaf Wolff (U Oldenburg), 向荣 (Xiang Rong, CAS-SCSI)

In the framework of the Sino-German Cooperation in Marine Sciences a Symposium "Coastal Oceans: Interdisciplinary Scientific Prediction and Management" was organized on October 20-24, 2014 in Qingdao, China. On that occasion the joint perspective of "the Four Seas" / "四海" was discussed.

Coastal Science as own research field

Coasts are those parts of the ocean which are significantly influenced by the neighboring land, be it in terms of currents, winds, temperatures, sea ice, salinity, suspended matter, specific species, and anthropogenic substances; but coasts are also that part of the land which is significantly influenced by the neighboring sea, be it opportunities for transport, risks related to flooding, tsunamis, storm surges, and where the points of departure such as shipping, tourism, and oil and gas extraction are found. Not surprisingly therefore, the science in coastal dynamics and management extends far beyond oceanography.

Certainly oceanography is an important component of the interdisciplinary mix of scientific efforts dealing with coasts, but other fields such as meteorology, coastal engineering, land use planning and management, freshwater hydrology and ecology, climate, sociology and cultural science are also needed for constructing holistic views of the subject of coasts.

What makes the issue of coasts special is not only the presence of the "other" counterpart, i.e., the sea versus land and land versus sea, but also the presence of an often dominant factor modifying or even constructing the coast - humans who use the coasts in various ways, conditional upon temporally and culturally varying preferences, who make use of opportunities and try to deal with often great dangers. The German coasts, there is a saying according to which "God created the ocean, but the Frisians created the coast" (the Frisians are people living at the Dutch and German North Sea coast). Because of both, the culturally conditioned values and preferences, and the different geophysical, morphological and ecological set up, the various coasts of this world are very different, and face very different challenges, risks and opportunities. As a consequence coastal science is fragmented into regional research communities; in some quarters coastal sciences is considered as a mere variant of oceanography, and in others it is essentially coastal engineering, and in still others human geography.

The challenge is to bring together these different communities, disciplines, challenges and concepts together, not only within the scientific community but also in a trans-disciplinary effort by combining the real world, in which the coast is subject to competing practices and decisions, with the body of scientific knowledge.

We are convinced that a deepening and a sustainable cooperation between German and Chinese coastal scientists will hold the potential for significant progress in coastal sciences, not only in the two countries but also beyond. We expect synergistic progress, in terms of better understanding of processes, subsystems, the holistically framed system comprising natural dynamics and human interference, and perspectives conditioned by different societal values and preferences, when we consider in parallel, in particular in a comparative mode, the two North German marginal seas of the North Sea and the Baltic Sea, as well as the two Chinese marginal seas Bo Hai and Huang Hai.

This progress will also have a management dimension, an instrumental (monitoring) dimension as well as issues of the built environment (coastal defense, ports, shipping lanes, offshore activity)

Test case: 四海

We focus on the “Four Seas” (四海) not only because many of us are familiar with these seas after many years of scientific analyses, but also because of their societal significance with a broad range of important modes of uses, from oil and gas, nearshore aquaculture, offshore fishery, wind energy, shipping and other industrial activities to tourism and natural preservation. Both systems are made up of one sea which is more enclosed, and another one which is half open to the world ocean. In both systems major ecosystems have their home, but they also serve, or served, as dumping sites for onshore activities. A difference is the fact that the North European seas have many different national coasts while in case of the Chinese seas only a limited number of international partners share responsibility for the marginal seas.

We should also mention the emotional value of the Four Seas for the people living at their coasts – which certainly has an influence on the culture of the regions.

Within the “four seas” concept, we cover issues of hydrodynamics and ecology, of coastal climate of observational projects, the construction of monitoring systems, and the various dimensions of human usages (fisheries, oil and gas, natural reserves...). Other issues, which deserve attention deal with past changes, possible future drivers in changes, the construction of scenarios, the challenge of detecting (changes beyond natural variations) and the attribution (of plausible mechanisms). A particular challenge will be to map similarities and differences of regional societal values, decision procedures and stakeholder networks. Finally, we welcome systematic efforts for assessing the body of scientifically legitimate knowledge and for describing to what extent this knowledge is based on agreement or is contested.

6 June 2015