



Minutes of the
4th Meeting
of the Baltic Earth
Science Steering Group

held at

**HafenCity University
Hamburg, Germany**

9-10 March 2015

Edited by

Marcus Reckermann



Participants at the 4th Baltic Earth Science Steering Group meeting. Left to right: Karol Kulinski, Silke Köppen (IBES), Jüri Elken (BESAB), Anders Omstedt, Marcus Reckermann (IBES), Stanislaw Massel (BESAB), Irina Partasenok, Andreas Lehmann, Anna Rutgersson, Sirje Keevallik, Inga Dailidienė, Gregor Rehder, Martin Stendel, Piia Post, Sergey Zhuravlev, Hans-Jörg Isemer (BESAB), Juris Aigars, Andris Andrusaitis (observer), Kay Emeis (BESAB), Markus Meier, Kai Myrberg, Deliang Chen (BESAB), Eduardo Zorita. Present but not on the photo: Benjamin Smith and Paulina Garbarczyk (internship at IBES and photographer).

Contents

	Page
Decisions	4
Action Items	4
List of Annexes	4
Introduction.....	5
TOP 1: Organizational Issues	5
1.1. Approval of the agenda.....	5
1.2. Approval of the previous Baltic Earth ISSG meeting minutes.....	5
1.3. Review of the previous (#3) Baltic Earth ISSG meeting action items	5
1.4. Membership issues	6
TOP 2: Report on Baltic Earth activities in 2014.....	6
2.1. Baltic Earth Workshop on the Gulf of Finland Year, Helsinki, 24-25 November 2014	6
2.2. Report on EU ITN Proposal “ExtremeBaltic”	6
2.3. Report of the IBES.....	6
2.4. Brief reports from the Working Groups.....	7
TOP 3: Baltic Earth Science Plan.....	8
3.1. Presentation of a proposed outline for the Baltic Earth Science Plan.....	8
TOP 4: Upcoming Baltic Earth activities	9
TOP 5. Miscellaneous Baltic Earth issues and potential activities	10
Abbreviations and Acronyms	12
Annex 1: Agenda of the 4 th BESSG meeting	13
Annex 2: Participant list	16
Annex 3: Notes from the meeting of Baltic Earth Senior Advisory Board (BESAB).....	17

Decisions

1. 1st Baltic Earth Conference (BEC1) to be held at Nida
2. Deliang Chen approved as member of BE Senior Advisory Board
3. Eduardo Zorita announced his withdrawal from the BESSG. A successor should to be proposed at the next meeting.
4. The Writing Team for the Baltic Earth Science Plan (BESP) consists of Markus Meier, Anna Rutgersson, Benjamin Smith, Deliang Chen and Marcus Reckermann.
5. A Baltic Earth Working Group on Data should be established. Details to be discussed at the next meeting.
6. Next BESSG meeting: Riga, Latvia, in connection with the 10th Baltic Sea Science Congress (short 1.5 h interim meeting (18 June 2015).

Action Items

- 1. Action Item to MM, AR, MR: Draft and send out a Memorandum of Understanding concerning a voluntary commitment to participation and contributions to Baltic Earth by Baltic Sea region research institutes*
- 2. Action Item to MM, AR, MR and all, to start preparing the 2nd Announcement and Call for papers for BEC1, in particular to define thematic topics and sessions*
- 3. Deliang Chen is asked to update the BESSG and BESAB with Future Earth activities and possible linkages/interfaces and possibilities for participation and collaboration with Baltic Earth*

List of Annexes

Annex 1: Agenda of the 4th BESSG meeting

Annex 2: Participant list of the 4th BESSG meeting

Annex 2: Minutes of the BESAB

*The following Annexes can be downloaded from the Baltic Earth website
www.baltic-earth.eu/organization/bessg.html*

Online Annex 1: Evening lecture by Deliang Chen

Online Annex 2: IBES Report

Online Annex 3: Draft structure for a Baltic Earth Science Plan

Introduction

This 4th Baltic Earth Science Steering Group (BESSG) Meeting was the first meeting of the permanent Baltic Earth Science Steering Group, as approved at the 3rd BEISSG meeting in Lund on 18 June 2014. It took place at the Hafencity University in Hamburg, and had a dedicated Baltic Earth Seminar on “Climate modelling and impacts: From the Global to the Regional to the Urban scale” attached to it (www.baltic-earth.eu/hamburg2015). This was the first joint meeting with the newly established Baltic Earth Senior Advisory Board (BESAB), which had a separate breakout meeting and which resulted in recommendations for the BESSG. The main focus of the meeting was on the organisation and establishment of a Baltic Earth Science Plan and the preparation of upcoming activities in 2015 and the 1st Baltic Earth Conference in 2016.

Local host Marcus Reckermann welcomed the participants in Hamburg and at the new Hafencity University. BESSG chairman Markus Meier chaired the meeting. At the beginning, all meeting participants gave a short self-presentation.

The first day ended with an Invited Evening Lecture by Deliang Chen, University of Gothenburg, on “Future of international science” (see Online Annex 1). The second day started with separate sessions of BESSG and BESAB, followed by a joint session.

The afternoon of the second day was dedicated to the Open Baltic Earth Seminar on “Climate modelling and impacts: From the Global to the regional to the Urban Scale”, organized in conjunction with Hafencity University (HCU) and CLiSAP (Integrated Climate System Analysis and Prediction), the Cluster of Excellence for Climate Research of Hamburg University.

TOP 1: Organizational Issues

1.1. Approval of the agenda

The agenda for the 4th BESSG meeting (Annex 1) was unanimously approved.

1.2. Approval of the previous Baltic Earth ISSG meeting minutes

The minutes of the 3rd Baltic Earth ISSG meeting were unanimously approved.

1.3. Review of the previous (#3) Baltic Earth ISSG meeting action items

The following open action items of the previous meeting were discussed:

1. Action Item to MR: Send a sample WG description to all WG chairs, asking for response by 1 November. *Website contributions now online but update by WG chairs still pending*
2. Action Item to Piia Post and all: To investigate alternative funding options for a Baltic Earth Summer School in 2015. *Achieved; Doctoral Conference to be held in Tartu and Vilsandi, Estonia, co-organized by the University of Tartu and Baltic Earth, 10-14 August 2015. A second Summer School will be organized in Askö, Sweden, 24-30 August (funded by BEAM, University of Sweden)*
3. Action Item to MM: Invite Valery Vuglinsky *Achieved; VV agreed to be part of SAB*
4. Action Item to MM and AR with MR: Draft a welcome letter to the SAB. *Achieved*
5. Action Item: To KM and MR to prepare the Baltic Earth Gulf of Finland Workshop. *In preparation*
6. Action Item to ID, MR, SK, MM, AR to investigate a possible venue for the 1st Baltic Earth Conference on or near the Curonian Spit. *Achieved; the 1st Baltic Earth Conference will be held in Nida on the Curonian Spit in Lithuania, 13-17 June 2016*
7. Action Item to MR, MM, AR to draft an MoU or Lol, with the support of HJI. *Pending*

Other pending activities from previous meetings:

9. Produce a Baltic Earth flyer (Action Item to MR) *Pending*

1.4. Membership issues

Deliang Chan was approved as new member of SAB.

Eduardo Zorita announced his withdrawal from the SSG.

TOP 2: Report on Baltic Earth activities in 2014

2.1. Baltic Earth Workshop on the Gulf of Finland Year, Helsinki, 24-25 November 2014

Kai Myrberg briefly reported about the Gulf of Finland Workshop in November 2015 in Helsinki. The workshop titled “Using modelling as a tool to ensure sustainable development of the Gulf of Finland-Baltic Sea ecosystem” took place at the Finnish Environment Institute (SYKE). The workshop covered the following modelling issues: the role of physical forcing on the GoF ecosystem, biogeochemical modelling of the Baltic Sea (Gulf of Finland), effects of climate change on (Gulf of Finland) ecosystems, eutrophication and cost-effective nutrient load reduction, natural and anthropogenic hazards like coastal erosion, cyclonic storms, oil spills and other accidents and their impacts on ecosystems. Invited presentations covering these topics were given in the morning and early afternoon, followed by three breakout workshops covering three topics: 1. Cost-effective nutrient load reductions, main findings; 2. Preventive methods and forecasting of oils spills and other marine accidents, new methods; 3. The impacts of climate change on physics and biogeochemistry, main effects. Each working group was approach to answer a set of questions. The work was finalized, presented and discussed during the morning of the second day. See full information and documentation of the workshop at www.baltic-earth.eu/events/GoFWorkshop2014.

2.2. Report on EU ITN Proposal “ExtremeBaltic”

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 12 May 2015: Proposal was rejected.

2.3. Report of the IBES

Marcus Reckermann shortly reported about the work of the International Baltic Earth Secretariat. The new Baltic Earth website was launched in February 2015. Its corporate design and layout follows the BALTEX style but with the Baltic Earth colours and logo. The BALTEX website is idle as of February 2015 but still fully accessible as a database for BALTEX matters. Nevertheless, only the new Baltic Earth website will be updated from now on. Also, dedicated Facebook and Twitter pages are now online, so that, including the BACC Blog, Baltic Earth now has 4 web portals. *A suggestion is to add another Baltic Earth Blog which could be used to foster open discussions among scientists on controversial subjects.*

Regarding printed publications, it can be said that the BALTEX publication database is fully accessible through new Baltic Earth website. New Baltic Earth publications are added to the existing database to avoid two separated databases. At present, there are 11 books, 711 peer-reviewed journal articles, 65 reports, 811 Study Conference presentations with reference to BALTEX/Baltic Earth, as well as 55 issues of the International BALTEX Secretariat Publication Series (IBSP; ISSN 1681-6471) and 4 issues of the International Baltic Earth Secretariat Publication Series (IBESP; ISSN 2198-4247). A second Baltic Earth Newsletter is still pending, and contributions are needed. The BACC II book was in print at the time of the meeting.

Update: BACC II book published as Open Access in April 2015.

The SAB was confirmed to have 9 members of which 5 attended this meeting. Deliang Chen was suggested as additional member of this board. Deliang gave an evening lecture for the BESSG and BESAB members (Online Annex 1).

Marcus further reported about the GEWEX meetings he attended, in The Hague, July 2014, and Pasadena, December 2014. The panel voiced its concern that Baltic Earth is lacking a specific hydrological component and is missing connections to weather services and is deficient in plans for field campaigns organized around a definite land component that would generate data of value and interest to the broader GEWEX community. Meanwhile, the panel tabled a decision to approve Baltic Earth as an initiating GHP RHP.

Marcus then reported about some outreach products produced by the North German Climate Office at HZG which possibly could in a similar form be expanded to a Baltic Sea wide scale under the umbrella of Baltic Earth (North German Climate Atlas, North German Climate Monitor). Still the feasibility of this is questionable at this time.

<http://www.norddeutscher-klimaatlas.de/>
<http://www.norddeutscher-klimamonitor.de/>

Further issues presented were the joint NOSCCA/BACC Session at EGU2015, on 13 April in Vienna, and the BACC II book launch at ECCA 2015 in Copenhagen. The former is the first joint event of both assessment communities, of the North Sea (NOSCCA) and BACC. The session will be co-chaired by Marcus Reckermann, Markus Quante, Corinna Schrum and Anders Omstedt. The BACC II launch event at ECCA 2015 includes a presentation of BACC II results and a panel discussion.

It was announced that the 1st Baltic Earth Conference (BEC1) will take place in Nida, Lithuania (see details below).

See Online Annex 2 for the complete Secretariat report.

2.4. Brief reports from the Working Groups

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

Andreas Lehmann gave an overview over the current activities. A paper on Major Baltic Inflows (MBIs), atmospheric circulation patterns and related salinity dynamics is being submitted, and a scientific session on salinity will be at EGU 2015. A workshop on the MBI of December 2014 is to be held at the IOW on 20 May 2015.

- 2.4.2. *WG on Land-Sea biogeochemical feedbacks (Gregor Rehder, Karol Kulinski, Ben Smith)*
Gregor Rehder suggested a dedicated session on catchment biogeochemistry at the 1st Baltic Earth Conference (BEC1).
- 2.4.3. *WG on Natural hazards and extreme events (Anna Rutgersson, Jari Haapala, Martin Stendel)*
Anna Rutgersson shortly reported of the activity of the EU proposal (see above, 2.2).
- 2.4.4. *WG on Understanding sea level dynamics (Eduardo Zorita, Anders Omstedt)*
Eduardo Zorita announced that he would step back from the WG on Sea level dynamics and the BE SSG membership.
- 2.4.5. *WG on Understanding regional variability of water and energy exchanges (Franz Berger, Sergey Zhuravlev, Irina Partasenok)*
Sergej Zhuravlev announced that there will be a close collaboration with Irina Partasenok concerning the BACC II summary booklet, also concerning other tentative activities such as a basin-wide climate atlas. He stressed again that a new WG leader is urgently needed.
- 2.4.8. *WG on Scenario Simulations for the Baltic Sea 1960-2100 (Markus Meier)*
Markus Meier stressed that this work is of high interest to HELCOM; and that an update to the ECOSUPPORT material is needed.
- 2.4.9. *WG on Regional Climate System Models (Markus Meier)*
Markus reported that an overview article is in preparation. Furthermore, 8-10 groups working in this area were identified and approached for sensitivity experiments, but collaboration failed for the time being. A collaboration with Cordex is desirable regarding model comparison, multi model ensembles, process understanding, substance fluxes, hydrological models of different complexity, also including nutrient fluxes. The water cycle in many coupled systems is biased.

TOP 3: Baltic Earth Science Plan

3.1. Presentation of a proposed outline for the Baltic Earth Science Plan

Markus Meier, Anna Rutgersson, Marcus Reckermann

The outline presented (see Online Annex 3) was discussed controversially. Questions and concerns raised were the following (given here in key word style): What is the motivation for such a document? Who is the reader (funding and sponsoring?)? Research gaps and needs need to be documented; a concise document is needed for people who design funding questions; needs to be compelling and exciting; push boundaries higher, emphasize added value; motivation and rationale should be very clear from the beginning; do not mix concrete outcomes with science plan; should be a vision document but brief, concise, well written, glossy, with good pictures; curiosity driven vs. applied research is not necessarily black or white, can have shades of grey; Earth System science emphasis; knowledge gained in Baltic Sea region should be transferrable to other regions. The Science Plan should be short and sharp, take out activities for separate documents; have one visionary document one activity document.

A new BONUS Strategy research agenda 2016-2017 is in preparation, they are very interested in input in form of a Baltic Earth science plan.

Deliang Chen and Benjamin Smith agreed to participate in the writing team, which now consists of 5 individuals (Markus Meier, Anna Rutgersson, Marcus Reckermann, Deliang Chen, Benjamin Smith)

The question how the science plan should be designed was given to the SAB.

TOP 4: Upcoming Baltic Earth activities

4.1 *Baltic Earth – BACC-NOSCCA Session at EGU, Vienna, Austria, 12-17 April 2015 (Marcus Reckermann)*

Climate change assessments for the Baltic and North Sea regions: Observations, model projections and impacts. Convener: Marcus Reckermann, Co-Conveners: Markus Quante, Corinna Schrum, Anders Omstedt.

This is a first joint event of the North Sea climate change assessment and the Baltic Sea climate change assessment communities. This session features authors of the BACC II and NOSCCA assessments to present their results to a larger audience. Aim of this session is to present a good overview over the current knowledge of climate change and its impacts in the Baltic and North Sea regions, and also to look at the regional differences between these highly utilised areas. (see also meetingorganizer.copernicus.org/EGU2015/session/18189)

4.2 *BACC II Book presentation April/May, possibly @ ECCA2015 (Marcus Reckermann)*

The presentation is envisaged to consist of a presentation of the scientific contents of the new book, and a separate session including a short introduction to the BACC principles and a panel discussion including BACC scientists and stakeholders.

4.3 *Baltic Earth Doctoral Students Conference, Tartu/Vilsandi, Estonia, 10-14 August 2015*

Piia Post shortly presented the summer school in Tartu and Vilsandi, Estonia, to be jointly organized and funded by the University of Tartu and IBES/HZG (see www.baltic-earth.eu/tartu2015).

4.4 *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 shortly presented the summer school in Askö Sweden, to be jointly organized by the University of Stockholm and Baltic Earth and funded by BEAM/University of Stockholm (see www.baltic-earth.eu/asko2015).

4.5 *Baltic Earth –HyMex Workshop on Regional Climate Modelling in Rome, Italy, 5-6 November 2015.*

Markus Meier shortly presented the joint HyMex-Baltic Earth modelling workshop in Rome, Italy (see www.baltic-earth.eu/rome2015).

4.6 *2nd Baltic Earth - Gulf of Finland Workshop, Tallinn, Estonia, 18-19 November 2015*

Kai Myrberg shortly presented the 2nd Baltic Earth Gulf of Finland workshop. The workshop in Tallinn will start on 18 November in the evening and end on 19 November. It will take place back to back to the final Gulf of Finland Year 2014 Seminar which will take place in Tallinn 17-18 November. Everybody interested is warmly welcome at both events (see www.baltic-earth.eu/GoF2015 and www.gof2014.fi/en/research/gulf-of-finland-trilateral-co-operation-and-baltic-earth-scientific-forum/).

4.7 *1st Baltic Earth Conference, 13-17 June 2016 in Nida, Curonian Lagoon, Lithuania (Theme “Multiple drivers for Earth system changes in the Baltic Sea region”; 1st flyer out)*

Inga Dailiniende and Marcus Reckermann reported on the site visit at Nida on the Curonian Spit, Lithuania, and presented the venues which were selected for the Conference. It was decided that Nida would be a suitable place for this conference. It was now considered timely to start

preparing the contents and the session for the conference so that a second announcement and call for papers can be issued in the autumn of 2015. It was suggested to invite specific lectures on historical changes, land use changes, as well as political, industrial and other anthropogenic drivers. Also it was suggested to invite a Thomas Mann expert to give lecture on the writer's connection to the Baltic Sea and the Curonian Spit.

See also www.baltic-earth.eu/nida2016.

4.8 Other events of interest:

- Symposium on Baltic Marine Inflows, Baltic Sea Research Institute, Warnemünde, Germany, 20 May 2015
- Baltic Sea Science Congress 2015, Riga, Latvia, 15-19 June 2015. There will be a presentation on BACC II by Marcus Reckermann at this conference.

Comments by SAB on the Science Plan, after their breakout session (key word style)

The vision must be clear. Is it a programme or a network? Bottom-up or to-down?
There should be synergies with other communities.

The science plan should be a serious document, not lengthy; contain efforts in thinking, it should help organizing science, attract young scientists and scientists of different disciplines; stakeholder involvement from the beginning if possible, try to get funding

Furthermore, a flexible plan is needed, a time plan would be good. An identity and profile must be clearly visible; there should be connections to both GEWEX and Future Earth, with higher priority for Future Earth. Potential linkages to Future Earth should be investigated.

The question must be answered what is the uniqueness and added value of Baltic Earth. What would be missing if BE would not exist?

Minutes of SAB meeting see attached (Annex 3).

TOP 5. Miscellaneous Baltic Earth issues and potential activities

5.1 BALTEX Database availability and location (a.o., request by Ulrich Looser to host BALTEX Hydrological Database at GRDC (www.bafg.de/GRDC))

The BESSG decided to agree to the request by Ulrich Looser concerning the transfer of data to the GRDC.

Update: Transfer terminated as of 27 April 2015.

5.2 Application for GEWEX-GHP Initiation Status as Regional Hydroclimate Project – Requirements and Recommendations by GHP

See below the recommendations by the BESAB (Annex 3).

5.3 Connections and cooperation with Future Earth

Deliang Chen was asked to inform the BESSG on process how to approach Future Earth for possible ways of collaboration or participation.

5.4 Meetings of BESSG and BESAB and relation

There should be a physical joint meeting of the BESSG + BESAB once a year, with short electronic consultations in between, as appropriate. The relationship between SSG and SAB should be not prescriptive in advice; it should rather show problem and options for solutions, not necessarily concrete recommendations.

5.5 *Potential Baltic Earth Climate Atlas*

It was discussed that this type of effort requires funding. There may be the possibility under a climate services call. It was decided to postpone this activity.

5.6. *Data*

The concern was raised about the accessibility of old and historical data. A data group should be established to identify which kind of data are available where and how to get access to it, and to identify gaps and needs of data for the Grand Challenges.

5.7. *Memorandum of Understanding*

A memorandum of Understanding or Letter of Intent shall be drafted for institutions relevant for Baltic Earth research, to be signed. The commitment should be dependent on the capability of the interested institution. Some institutions may be able to sponsor a Baltic Earth event or activity, or support one or several travel grants per year; others may be able to just allow and pay the travel costs for own scientists to participate in Baltic Earth meetings. The MoU or Lol shall be flexible in this respect and should not involve any concrete financial expectations.

5.8 Other issues

None

5.9 Time and place of 5th Baltic Earth Science Steering Group Meeting

Riga, Latvia, in connection with the 10th Baltic Sea Science Congress (short 1.5h interim meeting (18 June 2015)).

Draft minutes

Marcus Reckermann, 29 May and 16 June 2015

Markus Meier, 6 June 2015

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
BEC1	1 st Baltic Earth Conference European Cooperation in Science and Technology
BEISSG	Baltic Earth Interim Science Steering Group
BESAB	Baltic Earth Senior Advisory Board
BESP	Baltic Earth Science Plan
BESSG	Baltic Earth Science Steering Group
BEWG	Baltic Earth Working Group
BONUS	Joint Baltic Sea research and development programme of the EU
BSSC	Baltic Sea Science Congress
CLISAP	Integrated Climate System Analysis and Prediction
Cordex	Coordinated Regional Climate Downscaling Experiment
ECCA	European Climate Change Adaptation Conference
ECOSUPPORT	Advanced tool for scenarios of the Baltic Sea ECOSystem to SUPPORT decision making
EGU	European Geosciences Union
Future Earth	Global research platform for global environmental change
GEWEX	Global Energy and Water Cycle Exchanges
GHP	GEWEX Hydrometeorological Panel
GRDC	Global Runoff Data Centre
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
IBSP	International BALTEX Secretariat Publication Series
IOW	Institut für Ostseeforschung Warnemünde (Baltic Sea Research Institute)
ISSG	See BEISSG
ISSN	International Standard Serial Number
LoI	Letter of Interest
MBI	Major Baltic Inflows
MoU	Memorandum of Understanding
NOSCCA	North Sea Climate Change Assessment
RHP	Regional Hydroclimate Project (in GEWEX)
SYKE	Finnish Environment Institute

Annex 1: Agenda of the 4th BESSG meeting

4th Meeting of the Baltic Earth Science Steering Group

PROVISIONAL AGENDA
(As of 5 March 2015)
(BESSG)

9 and 10 March 2015

This 4th Baltic Earth Science Steering Group Meeting is a 1.5-day meeting and takes place at the new HafenCity University in Hamburg, Germany. This meeting is the first meeting of the regular Baltic Earth Science Steering Group (BESSG) after the interim phase with three meetings of the Baltic Earth Interim Science Steering Group. Nevertheless, the numbering will continue so that this is the 4th meeting. The meeting will also host the Baltic Earth Senior Advisory Board (BESAB), which will have a separate meeting and joint meetings together with the BESSG.

Main topics will be the discussion of the draft Baltic Earth Science Plan and the preparation of upcoming activities in 2015 and the 1st Baltic Earth Conference in 2016.

Day 1 Monday 9 March 2015

PART 1: Joint meeting of the BESSG and the BESAB

- 14:00** **Welcome by the host and logistic information**
Marcus Reckermann, IBES, HZG, Germany
- 14:10** **Introduction to the meeting by the Baltic Earth SSG Chairman**
Markus Meier, SMHI, Sweden
- 14:20** **Short self-introduction by BESSG and BESAB members**
- 14:30** **TOP 1: Organisational issues**
- 1.1 Approval of the agenda
 - 1.2 Approval of the previous Baltic Earth ISSG meeting minutes
 - 1.3 Review of previous Baltic Earth ISSG meeting action items
- 14:40** **TOP 2: Reports on Baltic Earth activities in 2014**
- 2.1 Baltic Earth Workshop on the Gulf of Finland Year, Helsinki, 24-25 November 2014
Kai Myrberg (5 min)
 - 2.2 Report on EU ITN Proposal "ExtremeBaltic"
Anna Rutgersson (5 min)

- 2.3 Report of the IBES
Marcus Reckermann (5 min)
- 2.4 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)
- 2.5 Brief reports from institutions and countries on Baltic Earth relevant activities (*5 min each*)

16:00 **Break**

- 16:30** **TOP3: Baltic Earth Science Plan**
- 3.1 Presentation by Science Plan Team
Markus Meier, Anna Rutgersson, Marcus Reckermann
 - 3.2 Open discussion

17:30 **Items and requests for BESAB**

18:00 **Break**

18:15 **Invited Evening Lecture**
“Future of international science”
Deliang Chen, Göteborg University, Sweden

19:15 **Walk to Joint Invited Dinner in the Restaurant “Wasserschloss”,
 Hamburg Speicherstadt (www.wasserschloss.de)**

Day 2 Tuesday 10 March 2015

PART 2: Separate meetings of the BESSG and the BESAB

BESSG-Meeting:

- 8:30** **TOP 4: Upcoming Baltic Earth Activities**
- 4.1 Baltic Earth – BACC-NOSCCA Session at EGU, Vienna, Austria,
12-17 April 2015
Marcus Reckermann (10 min)
 - 4.2 BACC II Book presentation April/May, possibly @ ECCA2015
Marcus Reckermann (10 min)

- 4.3 Baltic Earth Doctoral Students Conference, Tartu/Vilsandi, Estonia, 10-14 August 2015
Piia Post (5 min)
- 4.4 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)
- 4.5 Baltic Earth –HyMex Workshop on Regional Climate Modelling in Rome, Italy, 5-6 November 2015
Markus Meier (10 min)
- 4.6 2nd Baltic Earth - Gulf of Finland Workshop, Helsinki, Finland, 17-19 November 2015
Kai Myrberg (10 min)
- 4.7 1st Baltic Earth Conference, 13-17 June 2016 in Nida, Curonian Lagoon, Lithuania (Theme “Multiple drivers for Earth system changes in the Baltic Sea region”; 1st flyer out)
Inga Dailiniende, Marcus Reckermann (10 min)
- 4.8 Other events of interest:
- Symposium on Baltic Marine Inflows, Baltic Sea Research Institute, Warnemünde, Germany, 20 May 2015
- Baltic Sea Science Congress 2015, Riga, Latvia, 15-19 June 2015

BESAB-Meeting:

8:30 Internal SAB discussion of Baltic Earth items

10:00 *Joint Break*

PART 3: Reconvening of BESSG and BESAB

- 10:30 TOP 5: Miscellaneous Baltic Earth issues and potential activities**
- 5.1 BALTEX Database availability and location (a.o., request by Ulrich Looser to host BALTEX Hydrological Database at GRDC (www.bafg.de/GRDC))
- 5.2 Application for GEWEX-GHP Initiation Status as Regional Hydroclimate Project – Requirements and Recommendations by GHP
- 5.3 Connections and cooperation with Future Earth
- 5.4 Further discussion platforms of controversial issues
- 5.5 Potential Baltic Earth Climate Atlas
- 5.6 Membership issues
- 5.7 Other issues
- 5.8 Time and place of 5th Baltic Earth Science Steering Group Meeting

PART 4: Joint Wrap-up Meeting

11:30 Comments and recommendations by BESAB for BESSG and open discussion

12:00 **Lunch**

13:00 – 18:00 Open Baltic Earth Seminar in cooperation with HCU (HafenCity Universität Hamburg) and CliSAP, the Cluster of Excellence for Climate Research of Hamburg University “Climate modelling and impacts: From the Global to the Regional to the Urban scale” (www.baltic-earth.eu/hamburg2015)

Annex 2: Participant list**Baltic Earth Science Steering Group (BESSG)**

Juris Aigars
Inga Dailidienė
Sirje Keevallik
Karol Kulinski
Andreas Lehmann
Markus Meier
Kai Myrberg
Anders Omstedt
Irina Partasenok
Piia Post
Marcus Reckermann (also IBES)
Gregor Rehder
Anna Rutgersson
Benjamin Smith
Martin Stendel
Sergey Zhuravlev
Eduardo Zorita

Baltic Earth Senior Advisory Board (BESAB)

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Kay Emeis
Hans-Jörg Isemer (also IBES)
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Annex 3: Notes from the meeting of Baltic Earth Senior Advisory Board (BESAB)

Baltic Earth
Earth System Science for the Baltic Sea Region

Notes from the meeting of Baltic Earth Senior Advisory Board (BESAB)

10 March 2015, Hamburg, HafenCity University

in connection with the 4th Meeting of the Baltic Earth Science Steering Group (BESSG)

BESAB members participated: Jüri Elken (Chair), Hans-Jörg Isemer, Kai Emeis, Stanislaw Massel, , Deliang Chen, Ulla Li Zweifel (via Skype), Andris Andrusaitis (not a member, observer)

In advance of the BESAB meeting, BESSG presented a list of questions where advice from BESAB would be needed. These advice requests were further specified on 9 March during the BESSG meeting, where BESAB members participated as well.

During the meeting the BESAB members discussed the proposed requests thoroughly and came to the following advice items.

1. Identity and vision of Baltic Earth

Baltic Earth is a follower of the former BALTEX program. The website reports "BALTEX is now Baltic Earth". This general identity is further refined by a vision to achieve an improved Earth system understanding of the Baltic Sea region. Compared to the BALTEX, the approach is a more holistic treatment of the processes taking place in the atmosphere, on land and in the sea as well as in the anthroposphere. The broad spectrum of research questions is focused and organized as a limited number of interdisciplinary grand challenges. Each of the challenges has autonomous scope and gain within the big picture as well as dedicated research team.

The BESAB welcomed the identity and vision of Baltic Earth. In the frame of forthcoming Baltic Earth developments (science plan, outreach and dissemination plan etc.), BESAB advises to revisit the identity and vision definitions for better backing of the action planning. Presently Baltic Earth has components of both the research network and the research program, whereas understanding and weights of these components vary among the great challenges. Since Baltic Earth is based on voluntary contributions of individuals and/or research groups, full unification of approaches may not be feasible. Still, more common understanding would be useful. Research conducted by the teams of Baltic Earth is well acknowledged as basic science, but it has strong application potential to serve the immediate interests of society as well. BESAB advises to balance curiosity-driven research and innovation related activities directly responding to stakeholder requirements in a reasonable manner, also with the view to possibly generating financial support via existing national and international funding programs.

2. Composing of Baltic Earth Science Plan

BESAB has the opinion that the Baltic Earth Science plan should be a serious and well-written document. One of its aims should be to attract and organize scientists, especially younger scientists

who have potential to participate in the Baltic Earth activities in the future. The plan should also inform and attract the scientists from other communities (disciplines and/or regions) in order to foster inter-community cooperation. The plan should increase the visibility of Baltic Earth among international research administrators and stakeholders of other fields.

In composing the Baltic Earth Science Plan, professional writing and editorial assistance might be needed. It should be good to articulate where Baltic Earth is strong, what is studied by Baltic Earth itself and what is planned in cooperation or what results are just adopted from other partners. In other words, unique research picture characteristic to Baltic Earth community should be complemented, where needed, by well-defined synergy with research pictures of other communities. BESAB suggested highlighting in particular the potential added value of Baltic Earth in light of the various existing national and international activities and programs investigating the Earth system of the Baltic Sea region. In spite of the freewill character of many activities in Baltic Earth, the wording and style used in the science plan to be written should consider the existing particularly international funding mechanisms (such as HORIZON 2020 and BONUS) in such a way, that the plan might also be useful when designing funding proposals for Baltic Earth. To address output and stakeholder involvement issues of individual challenges, BESAB recommends whenever possible to identify end users as soon as possible and to invite them to consult the Science Plan writing.

3. Relations of Baltic Earth to GEWEX, Future Earth and similar initiatives

BESAB advises to put high priority on the relations with the Future Earth initiative. The defined relations should be well visible in the Baltic Earth Science Plan, that they could positively affect the evaluation of research funding proposals what Baltic Earth might wish to present in the future. Another global research program – GEWEX – is also of interest but its priority for Baltic Earth could be somewhat lower.

4. Possible extension of Baltic Earth to include more aspects of biogeochemistry, BESSG membership issues

As to the overall development of Baltic Earth, the presently defined grand challenges should not be significantly extended, but, instead, should be detailed and consolidated. It is reasonable to consider the competence areas within the regional Earth System concept. In this frame Baltic Earth may think about including more land/catchment area biogeochemistry issues, including gas exchange, provided that the topics would directly contribute to better Earth System models.

BESAB was not able to recommend at this stage any persons who might lead and/or contribute to the new topics. Regarding suspended BESSG members (like Franz Berger cannot be chair of Grand Challenge 5 for the time being), BESAB recommends to nominate temporary substitutes until clarification of the situation.

5. Organization of BESAB work in relation to BESSG

BESAB found that the present work arrangement is good. Once a year, in the major BESSG (annual) meeting the BESAB members participate in the two-day event. Questions and requests to the BESAB will be presented by BESSG chairpersons prior to the meeting and will be refined during the joint part of the meeting. BESAB has its own meeting for a few hours and then reports about the recommendations to the joint meeting with BESSG. Each BESAB member selects 1-2 grand challenges where he/she makes permanent view on the Baltic Earth progress.