



2nd BALTEX Assessment of Climate Change for the Baltic Sea Basin (BACC II)

Minutes

3rd BACC II Lead Author Team Meeting

9 and 10 February 2012
Danish Meteorological Institute (DMI)
Copenhagen, Denmark



Participants (from left to right): Anna Rutgersson, Hans von Storch, Irena Borzenkova, Joanna Wibig, Christoph Humborg, Joachim Krug, Markku Viitasalo, Anders Omstedt, Ole Bøssing Christensen, David Simpson, Jari Haapala, Pekka Niemelä, Benjamin Smith, Rajmund Przybylak, Marie-Jose Gaillard-Lemdahl, Sirpa Rasmus, Michael Richter, Jukka Käyhkö, Birgit Hünicke, Jüri Elken. Bernd Schneider was present but not on the photo. Behind the camera: Marcus Reckermann.

1. Introduction

The meeting took place at DMI (Danish Meteorological Institute) in Copenhagen, with Ole Bossing Christensen as local host. Scope of this meeting was the presentation of draft chapters by lead authors, to provide other lead authors and the SSC with important statements from the chapters and help improve the chapters for external review (scheduled for mid-April). Chapter contents was presented and discussed, and internal comments which lead authors had to a large part received prior to the meeting were taken into account.

2. Lead Author's presentations

30 minutes were allowed per presentation and subsequent discussion. This time window was more or less sufficient to update the group on chapter contents. Many chapters had considerably improved relative to the submitted draft. The discussions either related to general issues concerning all chapters or BACC II in general, others were chapter-specific.

The presentations are available at the internal BACC II website (only for BACC II authors and SSC, password protected): www.baltex-research.eu/BACC2/inside/internal.html

3. General items discussed

How to relate to the BACC book

Chapters should include a general section on the state of research as documented in the BACC book; the state of research should be summarized briefly. The bulk of the chapter should concentrate on new consolidated findings resp. publications after the BACC I cut off day. This applies for publications of 2006 or thereafter. In general, chapters should be written so that the BACC II book can be read on its own. In addition, BACC I findings can be summarized in a dedicated sub-chapter within Chapter 1.

How to treat important background knowledge

Context which is important for understanding and which do not justify a special section or Annex should be explained in a box. For extensive background issues, a separate Annex may be justified.

Definition of terms

This can be done in the glossary at the end of the book. Here, discipline-specific terms can be defined, e.g., *Redfield ratio* or *ERA40*, as well as terms which are generally used in a loosely defined way, e.g. *trend*, *tendency*, *variability*, *climate change*, *attribution* etc., which need a firm definition within the scope of BACC II.

Production of new figures, maps and tables

This can be meaningful if figures are based on published results and data. Figures can also be updated with new published data (e.g. existing time series extended until 2012). Also, maps can be very helpful in showing the location of rivers, lakes or other important geographic details referred to in the text (e.g. see Fig 2.1/Table 2.1 and Fig 2.31/Table 2.5 in BACC). The production of maps and schematic figures can contribute to the understanding but should not leave the ground of consolidated knowledge. Tables can be used to summarize specific items published in many papers (e.g. see Table 3.2 or 3.2 in BACC), or to provide an overview (e.g. Table 4.5 in BACC).

Names of lakes, rivers or other geographical specifics can differ in different languages, and an English expression may not exist. If available, the English name should be given; else the domestic name; if two names exist (e.g. for a finnish-swedish border river), all names should be given in a table.

4. Chapter-specific items discussed

Ch 2.2 Past climate variability: Holocene (10.000 yrs). In agreement with the lead author of this chapter, a co-lead author will be looked for.

Ch 2.3 Past climate variability: Historical time frame (1.000 yrs). This chapter should be revised to demonstrate complete range of published, also conflicting views.

Ch. 4.2 Modelling future climate change: Skill of methods for describing regional climate futures. This chapter has a different content as the other chapters in that it exclusively treats methodological aspects of climate modelling, which to a very large part are general climate modelling problems which are not directly related to the subject of the book. The bulk of the chapter should be a dedicated annex where the different methodological aspects can be treated extensively. Here, in this chapter, an overview should be given on specific aspects of regional climate modelling in Northern Europe, resp. the Baltic Sea region.

Ch. 4.3 Modelling future climate change: Projections of future climate change. The sub-chapter on sea level modelling is critical and needs major revision. It should provide an overview of published material on the subject in all its facets.

Ch. 5 Impacts (in competition with non-climatic drivers)

Ch. 5.2.2 "Terrestrial ecosystems" and Ch. 5.3.1 "Agriculture and forestry". The topics on "agriculture" and "managed forests" need to be clearly separated between the two chapters. Peatland ecology may be included in Ch. 5.2.2. The land uplift ecosystem unique in the northern Bay of Bothnia can be shortly treated if publications exist.

Ch. 5.2.4 "Marine biogeochemistry" and Ch. 5.2.5 "Marine ecosystems".

Allocation of topics "nutrients" and "phytoplankton" to be clearly allocated to respective chapters.

Ch 5.3.2. "Urban complexes". A possible contribution from St. Petersburg as largest urban complex in the Baltic Sea area (and northernmost largest worldwide) could be investigated. Reference to a population database can be provided by colleagues.

Ch 6.3. "Attributing causes of regional climate change: Aerosols, natural and pollutants". This chapter should not just review aerosols and their impacts on the environment and human health but should concentrate on the question to which extent aerosols contribute, have and possibly could contribute in the future to regional climate change in the Baltic Sea basin (*attribution*).

5. Other issues

- Sub-chapter 5.3.4. "Fisheries and aquaculture" was abandoned as no lead author could be identified. The respective topics could be briefly treated in Ch. 5.2.5 "Marine ecosystems".
- Ch. 5.3.3. "Coastal erosion and coastline changes" was not presented and needs to be internally reviewed before external reviews.
- Annexes as of now:
 - A1 The physiographic structure of the Baltic Sea drainage basin (NN)
 - A2 The concept of detection and attribution (von Storch/Bhend)
 - A3 Empirical evidence for consensus and dissent among regional climate researchers (Dennis Bray)

More annexes could be of methodological nature, e.g. “Skills of methods for describing regional climate futures”, and possibly others.

- The main results of BACC II will be presented to the scientific community and interested stakeholders as well as the interested public at the

BACC II Conference in Tallinn, Estonia, on 6 and 7 September 2012

HELCOM will be an important stakeholder on this conference. As for the first BACC report, HELCOM intends to use the BACC II material for an own climate change impact assessment report. A representative lead author from each grand chapter (ideally the chapter coordinator) will present the chapter findings. In addition to that posters will present details from each chapter. Posters will be assembled and printed at the BALTEX Secretariat. There may be a panel discussion with representatives of different stakeholders at the end of the conference. For the BACC example conference in Göteborg 2006, see www.baltex-research.eu/BACC/conference.html.

There will be a dedicated conference web site and conference flyers shortly.

6. Open issues and To Dos

- Lead authors within one grand chapter should decide on a responsible “**chapter coordinator**” who will overlook the consistency in contents, structure and style within grand chapters, and also write a short introduction and summary to be placed at the beginning of each grand chapter. Ideally, this individual would also take on the responsibility to present the grand chapter at the stakeholder conference in Tallinn, but this could also be another lead author from that chapter.
- Annex author to be identified for: “The physiographic structure of the Baltic Sea drainage basin”.
- Possible external reviewers (at least 3 per chapter) should be suggested to Marcus as soon as possible. They should be from outside the BALTEX/BACC world.

6. Updated BACC II timescale, milestones and meetings

In order to avoid an overlap with the next IPCC report, it will be attempted to have the publication process finished by early summer 2013. This can be achieved if no second round of external chapter review will be necessary (see updated timeline in Appendix 2).

7. Appendices (attached)

- Appendix 1: Agenda
- Appendix 2: Updated BACC II timescale, milestones and meetings
- Appendix 3: Participant list

Presentations and other relevant material is available at [the internal BACC II website: www.baltex-research.eu/BACC2/inside/internal.html](http://www.baltex-research.eu/BACC2/inside/internal.html) (password protected)

Appendix 1

3rd BACC II Lead Author Team meeting

Copenhagen 9-10 February 2012

Draft Agenda as of 7 Jan 12

Day 1 Thursday 9 February

09:30 – 09:45 **Start of the meeting, opening words****Chapter 3 Recent (mainly 200 yrs) and current climate change**09:45 - 10:15 Ch. 3.2 Atmosphere (*Anna Rutgersson*)10:15 - 10:45 Ch. 3.3.1 Land: Hydrology (*Jukka Käyhkö*)10:45 - 11:15 Ch. 3.3.2 Land: Terrestrial cryosphere (*Sirpa Rasmus*)11:15 - 11:30 *Coffee break 15 min***Chapter 4 Modelling future climate change**11:30 - 12:00 Ch. 4.2 Skill of methods for describing regional climate futures (*Joanna Wibig*)12:00 - 12:30 Ch. 4.3 Projections of future climate change (*Ole Bøssing Christensen*)12:30 - 13:15 *Lunch 45 min***Chapter 5 Impacts of current and future climate change**13:15 - 13:45 Ch. 5.2.1 Impacts on the environment: Atmospheric chemistry (*David Simpson*)13:45 - 14:15 Ch. 5.2.2 Impacts on the environment: Terrestrial ecosystems (*Pekka Niemelä*)14:15 - 14:45 Ch. 5.2.3 Impacts on the environment: Freshwater biogeochemistry (*Christoph Humborg*)14:45 - 15:15 Ch. 5.2.4 Impacts on the environment: Marine biogeochemistry (*Bernd Schneider*)15:15 - 15:30 *Coffee break 15 min*15:30 - 16:00 Ch. 5.2.5 Impacts on the environment: Marine ecosystems (*Markku Viitasalo*)16:00 - 16:30 Ch. 5.3.1 Socio-economic impacts: Agriculture and forestry (*Joachim Krug*)16:30 - 17:00 Ch. 5.3.2 Socio-economic impacts: Urban complexes (*Sonja Deppisch, pres. Michael Richter*)17:00 - 17:30 Ch. 5.3.3 Socio-economic impacts: Coastal erosion and coastline changes (*Tomasz A. Łabuz*)

End of Day 1

19:30 *Joint dinner*

Day 2 Friday 10 February**Chapter 6 Attributing causes of regional climate change**

08:30 - 09:00 Ch. 6.2 Global warming (*Jonas Bhend, via Skype from Australia*)

09:00 - 09:30 Ch. 6.3 Aerosols (natural and pollutants) (*Hans-Christen Hansson, pres. by David Simpson*)

09:30 - 10:00 Ch. 6.4 Land cover and resource management (*Marie-Jose Gaillard-Lemdahl*)

Chapter 3 cont. Recent (mainly 200 yrs) and current climate change

10:00 - 10:30 Ch. 3.4.1 Baltic Sea: Marine circulation and stratification (*Jüri Elken*)

10:30 - 10:45 Coffee break (15 min)

10:45 - 11:15 Ch. 3.4.2 Baltic Sea: Sea ice (*Jari Haapala*)

11:15 - 11:45 Ch. 3.4.3 Baltic Sea: Sea level and wind waves (*Birgit Hünicke*)

Chapter 2 Past climate variability

11:45 - 12:15 Ch. 2.2 Holocene (*Irena Borzenkova*)

12:15 - 12:45 Ch. 2.3 Historical time frame (1000 yrs) (*Tadeusz Niedzwiedz, pres. by Rajmund Przybylak*)

12:45 Work lunch with sandwiches

12:45 - 15:30 **Discussion, open issues, wrap-up and outlook**

15:30 End of Day 2, departure

Appendix 2

Draft BACC II timescale, milestones and meetings
Provided no 2nd external review is necessary

Date	Event / Milestone	Location	Comment
10 Nov 2011	First version of BACC II chapters established	-	First internal draft deadline, internal iterations start
9-10 Feb 2012	3 rd Lead Author Team meeting	Copenhagen	Chapter drafts presented and discussed
15 Apr 2012	Deadline: Draft Chapters completed and ready for external review. Submitted to International BALTEX Secretariat	-	2 wk time allowed for internal checks and iterations with authors
30 April 2012	External peer-review process starts (contents CUT-OFF DAY)	-	Chapters sent to external reviewers, 3 months time allowed
31 July 2012	External reviews completed, reviews available for authors and SSC	-	Revision by authors according to reviewer's comments (3 months allowed).
6-7 September 2012	Review/Stakeholder Conference	Tallinn	Of the "BACC/Göteborg 2006" type
31 October 2012	Deadline for revised chapters following reviewer's comments	-	Revised BACC II material available for HELCOM Revised chapters to undergo internal consistency checks, English language revision, figures and references
28 February 2013	Chapters internally checked for consistency, language, figures and references	-	Text and figures sent to Springer for publication process to start (3-4 months)
June 2013	BACC II book published	-	-
10-14 June 2013	7 th Study Conference on BALTEX	Borgholm, Öland	BACC 2 session, outreach event
2013	HELCOM Ministerial Meeting	-	HELCOM report based on revised BACC II material to be finalised

Appendix 3

Participant List

Last Name	First Name	Affiliation	Country	E-Mail address	Function
Bhend	Jonas	CSIRO, Melbourne	Switzerland/ Australia	jonas.bhend@csiro.au	LA
Borsenkova	Irina	State Hydrological Institute	Russia	irena_borzen@mail.ru	LA
Christensen	Ole Bøssing	Danish Meteorological Institute - DMI	Denmark	obc@dmi.dk	LA
Elken	Jüri	Tallinn University of Technology	Estonia	elken@phys.sea.ee	LA
Gaillard-Lemdahl	Marie-Jose	Linnaeus University, Kalmar	Sweden	marie-jose.gaillard-lemdahl@lnu.se	LA
Haapala	Jari	Finnish Meteorological Institute - FMI	Finland	jari.Haapala@fmi.fi	LA
Hünicke	Birgit	Helmholtz-Zentrum Geesthacht	Germany	birgit.huenicke@hzg.de	LA
Humborg	Christoph	Stockholm University	Sweden	christoph.humborg@itm.su.se	LA
Käyhkö	Jukka	University of Turku	Finland	jukkay@utu.fi	LA
Krug	Joachim	Federal Research Institute for Rural Areas, Forestry and Fisheries	Germany	joachim.krug@vti.bund.de	LA
Niemelä	Pekka	University of Turku	Finland	pekka.niemela@utu.fi	LA
Omstedt	Anders	Göteborg University	Sweden	Anders.Omstedt@gvc.gu.se	LA, SSC
Przybylak	Rajmund	Nicolaus Copernicus University, Toruń	Poland	rp11@umk.pl	SSC
Rasmus	Sirpa	Finnish Game and Fisheries Research Institute, Jyväskylä	Finland	sirpa.rasmus@alumni.helsinki.fi	LA
Reckermann	Marcus	International BALTEX Secretariat, Helmholtz- Zentrum Geesthacht	Germany	marcus.reckermann@hzg.de	IBS, SSC
Richter	Michael	HafenCity University	Germany	michael.richter@hcu-hamburg.de	LA (repres.)
Rutgersson	Anna	Uppsala University	Sweden	anna.rutgersson@met.uu.se	LA
Schneider	Bernd	Institut für Ostseeforschung Warnemünde	Germany	bernd.schneider@io-warnemuende.de	LA
Simpson	David	Chalmers University of Technology	Sweden	david.simpson@chalmers.se	LA
Smith	Benjamin	Lund University	Sweden	ben.smith@nateko.lu.se	SSC
Viitasalo	Markku	Finnish Environment Institute SYKE	Finland	markku.viitasalo@ymparisto.fi	LA
von Storch	Hans	Helmholtz-Zentrum Geesthacht	Germany	hvonstorch@web.de	LA, SSC
Wibig	Joanna	University of Lodz	Poland	zameteo@uni.lodz.pl	LA