



Minutes of the
10th Meeting
of the Baltic Earth
Science Steering Group

held at

**Bellevue Park Hotel
Riga, Latvia**

5-6 February 2018

Edited by

Marcus Reckermann

10th Baltic Earth SSG Meeting Minutes



Participants (Baltic Earth SSG and SAB members) at the 10th Baltic Earth Science Steering Group meeting and **Baltic Earth-EVIDENT Seminar** in Riga (left to right):

Jüri Elken (SAB), **Andis Kalvans (University of Riga)**, **Vilnis Frisfelds (University of Riga)**, **Tija Sile (University of Riga)**, Franz Berger (SSG), Markus Meier (SSG), Gregor Rehder (SSG), Marcus Reckermann (SSG), Andreas Lehmann (SSG), **Anda Ikauniece (Latvian Institute of Aquatic Ecology)**, Corinna Schrum (SSG), Inga Dailidiende (SSG), Sergej Zhuravlev (SSG), Piia Post (SSG), Irina Danilovich (SSG), **Svetlana Aniskevich (Latvian Environment, Geology and Meteorology Centre)**, **Uldis Bethers (University of Riga)**. Present at the meeting but not on the photo: Valery Vuglinski (SAB) and Jannica Haldin (SAB, connected via Skype).

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Summary of Decisions and Action Items

Decision 1: Tarmo Soomere approved as new BESSG member

Decision 2: Matthias Gröger approved as new BESSG member

Decision 3: Anders Omstedt approved as new BESAB member

Decision 4: Jannica Haldin approved as new BESAB member

- Action Item 1: All BESSG and BESAB members to stimulate in their networks the submission of abstracts for the 2nd Baltic Earth Conference, before the deadline of 18 February
- Action Item 2: Markus Meier (MM), Marcus Reckermann (MR) together with the BE WG on Multiple Drivers, Urmas Lips and representatives of BONUS and HELCOM and all BESSG members to prepare a Workshop on “Multiple drivers of the regional Earth system”; in particular define topics and identify experts to invite to the workshop
- Action Item 3: MR to investigate possibilities for Baltic Earth involvement in Future Earth, and together with MM, act towards this
- Action Item 4: MM and MR to prepare a decision on the preparation of a BACC II successor under the umbrella of Baltic Earth
- Action Item 5: Gregor Rehder and members of WG 2 to recruit people for this subject, and in the medium-term to organize a Workshop on “Biogeochemical land-sea interlinkages in the Baltic Sea region”
- Action Item 6: Corinna Schrum and members of WG on Regional Seas to prepare and coordinate possible future collaborations with research groups in the North Sea and other regional seas, under the umbrella of Baltic Earth
- Action Item 7: MR to approach possible partners in the different countries to initialize and promote the translation and country-specific regionalization of a BACC II summary booklet; prepare the publication by selecting photos
- Action Item 8: MR to approach all BESSG members to prepare a list of available databases in the Baltic Sea region on the different disciplines; including which data (which parameter) are available at which resolution, for which period, at which institution under which conditions; with the respective weblinks and contact person.
- Action Item 9: Sergey Zhuravlev, Valery Vuglinski with support of MR and MM to organize an International Baltic Earth Workshop on hydrological modelling in the Baltic Sea basin, in connection with the celebrations for the 100th Birthday of the State Hydrological Institute, St. Petersburg, Russia

Previous open Action Items of BESSG #9

- Action Item 4: The Baltic Earth WG for Education is asked to consider the issue of a better integration of young scientists and to make a corresponding plan. WG on Education members (Piia Post, MM, MR) to draft a 2p strategy for Education in Baltic Earth. *Paper still pending (action item for BESSG Meeting #11), preparations concerning involving Young Scientists at the Helsingör Conference on the way*
- Action Item 6: MR to finalize LoI/MoU draft and send to all for comments; draft list of institutions and responsible contacts. *Pending*

Introduction

The 10th Baltic Earth Science Steering Group Meeting was a full two-day meeting, with a dedicated scientific workshop co-organized by Anda Ikauniece, Director of the Latvian Institute of Aquatic Ecology and Baltic Earth. Latvian Baltic Earth Science Steering group member Juris Aigars acted as local host of the meeting. The meeting took place at the Bellevue Park Hotel Riga.

TOP 1: Organizational Issues

1.1 Approval of the agenda

The agenda was approved.

1.2 Approval of the previous 9th Baltic Earth SSG meeting minutes

The previous meeting minutes were approved.

1.3 Review of previous 9th Baltic Earth SSG meeting action items

The following action items of the previous meeting were discussed:

Action Item 3:

Hans von Storch to draft a 2p strategy for Outreach and communication in Baltic Earth
Done. Discussed at this meeting, see p. 11

Action Item 4:

The Baltic Earth WG for Education is asked to consider the issue of a better integration of young scientists and to make a corresponding plan. WG on Education members (Piia Post, Markus Meier, Marcus Reckermann) to draft a 2p strategy for Education in Baltic Earth.
Paper still pending (action item for BESSG Meeting #11), preparations concerning involving Young Scientists at the Helsingör Conference on the way

Action Item 5:

Corinna Schrum asked to draft 2p document on a possible strategy for this new WG
Draft available, attachment to BESSG #9 Meeting Minutes, discussed at this meeting, see p. 11

Action Item 6:

Marcus Reckermann to finalize LoI/MoU draft and send to all for comments; draft list of institutions and responsible contacts
Pending

1.4 Membership issues:

BESSG memberships

Anders Omstedt resigns from the Baltic Earth Science Steering Group (BESSG). The Steering group thanked Anders for his outstanding work as Baltic Earth and BALTEX Steering group member. Anders had been in BALTEX from the very beginning, so with him a link to the early phase of BALTEX leaves the steering group. All the more, the Steering group is happy that Anders will still be there for Baltic Earth, as a member of the Advisory Board.

- **Anna Rutgersson** resigns from the Baltic Earth SSG vice-chairmanship but remains in the BESSG. The Steering group thanked Anna for her excellent work as Baltic Earth Steering group Vice Chair and for her great engagement in the BALTEX-Baltic Earth transition phase and initial phase of Baltic Earth. The steering group is happy that Anna will remain a member of the group.
- **Tarmo Soomeere** (Research Professor of the Department of Cybernetics of Tallinn University of Technology and President of the Estonian Academy of Sciences) had been proposed as new BESSG member at the previous BESSG meeting #8 and was now approved by the SSG. <http://www.akadeemia.ee/en/membership/members/soomeere/>
- **Matthias Gröger** (Swedish Meteorological and Hydrological Institute, Norrköping, Sweden) was proposed as new BESSG member by Markus Meier. He was now approved by the SSG. <https://www.smhi.se/en/research/research-departments/oceanography/matthias-groger-oceanographic-research-1.36854>

BESAB memberships

- **Anders Omstedt** was suggested as new member of the BESAB and was approved by the SSG.
- **Ulla Li Zweifel** left the HELCOM Secretariat and subsequently left the BESAB as HELCOM representative.
- **Jannica Haldin**, Professional Secretary in the HELCOM Working group on the State and Conservation of the Environment at the HELCOM Secretariat, was suggested to follow Ulla Li as HELCOM representative in the BESAB. She was approved by the SSG. She participated in the meeting via Skype (afternoon of Day 2). <http://www.helcom.fi/helcom-at-work/groups/state-and-conservation>

Decision 1: Tarmo Soomeere approved as new BESSG member

Decision 2: Matthias Gröger approved as new BESSG member

Decision 3: Anders Omstedt approved as new BESAB member

Decision 4: Jannica Haldin approved as new BESAB member

TOP 2: Recent Baltic Earth and related events

2.1 ESA-Baltic Earth Workshop on “Baltic from Space”, Helsinki, 29-31 March 2017

A joint workshop was organized by ESA and Baltic Earth on 29 and 30 March at the Finnish Meteorological Institute in Helsinki. The workshop was organized around invited oral presentations and discussions. Sessions were designed around dedicated topics related to the workshop’s objectives and an interactive session was organized around selected posters.

The objective of this workshop for ESA was to review the main requirements from geo-information in the Baltic Region from science to information services; to review the main activities, projects and initiatives taking place in the region where EO may contribute; to assess the potential of the increasing observation capacity offered by satellites to address the needs for science, applications and future information services; to characterize gaps and identify high-level requirements and associated solutions for support ICT infrastructure in the

Baltic region, including the basis for developing a Baltic Regional Earth Observation Exploitation Platform.

More information and the workshop report is available at <http://eo4baltic.info/>

2.2 Baltic Earth Session at EGU General Assembly, Vienna, 23-28 April 2017

For the third time already, a joint Baltic Earth-NOSCCA session at the European Geophysical Union General Assembly was organized, with Marcus Reckermann, Corinna Schrum, Markus Quante and Markus Meier as conveners. In 2017, this session CL 4.03 “Climate change and its impacts in the Baltic and North Sea regions: Observations and model projections” was a so-called PICO session (Presenting Interactive COntent), which is a touchscreen-based interactive way of presenting; something in between an oral presentation and a poster. There are 14 presentations were in this session. For details on the scope, speakers and presentations, see <http://meetingorganizer.copernicus.org/EGU2017/picos/22770>

2.3 Baltic Sea Science Congress, Rostock, 12-16 June 2017

On June, 12–16 2017, the 11th Baltic Sea Science Congress was held in Rostock, Germany, with the topic “Living along gradients: past, present, future”. Baltic Earth was represented by numerous scientists presenting results from Baltic Earth relevant research, and a dedicated Baltic Earth poster. For details, the programme and photos, see <https://www.io-warnemuende.de/bssc2017-home.html>

2.4 Open ship and presentation on RV “Ludwig Prandtl”, 3-7 July 2017 German Baltic Sea ports

MR reported about a regular outreach activity of Helmholtz-Zentrum Geesthacht, namely the outreach and open ship tour with Research Vessel “Ludwig Prandtl”. Every year in summer, an outreach tour to German touristic ports at the German coast and adjacent regions (Netherlands, Denmark, Poland) is conducted. Open Ship and public scientific presentations give an overview over current research activities at the North Sea and Baltic Sea coasts. From the beginning, BALTEX, BACC and Baltic Earth was represented on these cruises in Baltic Sea ports with presentations on climate change at the western Baltic Sea coasts, and at the open ship events.

https://www.hzg.de/public_relations_media/news/066666/index.php.de

2.5 Baltic Earth Summer School on Askö, Sweden, 28 August – 5 September 2017

Markus Meier reported on the successful 3rd Baltic Earth Summer School in Askö, Sweden, in collaboration with Stockholm University, Baltic Sea Research Institute Warnemünde, University of Rostock and Helmholtz-Zentrum Geesthacht. 18 students from Estonia, Finland, Germany, Poland, Russia and Sweden came to Askö for a week of learning, discussing and networking. Topic of the summer school was “Climate change in the Baltic Sea region”. For details, see <http://www.baltic.earth/events/summerschool2017/>

2.6 GEWEX-GHP meeting in Kathmandu, Nepal, 16-19 October 2017

The GHP (GEWEX Hydroclimate Panel) meeting was organized together with a Workshop of the Third Pole Environment (TPE) which is an initiative to study the environmental changes on the Tibetan plateau. The TPE program intends to pool international efforts and make use of the multi-national resources for the interdisciplinary study of water-ice-air-ecology-human

correlations. A more comprehensive study of these processes and interactions will address the influence of environmental changes on humans, and will provide timely adaptation strategies. <http://www.tpe.ac.cn/>

At this GHP meeting, Baltic Earth was acknowledged as new full working RHP, pending approval by the GEWEX SSG. To increase the collaboration between the different Regional Hydroclimate Projects (RHPs), Marcus Reckermann suggested joint workshops, co-organized by the RHPs, on different topics which the RHPs have in common. Such an initial joint workshop could be organized by Baltic Earth, possibly in 2019.

See the attached meeting notes for details (Annex 1); Baltic Earth related sections highlighted in red.

Note: Official approval of Baltic Earth as new full working RHP received at IBES on 19 March 2018. The official letter is attached in Annex 2.

2.7 AGU Session, New Orleans, USA, 11-15 Dec

Initially, the session was planned as “*Comparing Marginal Seas around the World – Coping with Similar Problems in Different Ways?*” by Marcus Reckermann, Donald F. Boesch, and Dongxiao Wang. Due to the low number of abstracts, the session was either to be merged with another session or defined as poster session. It was decided to search for a partner session to merge with; the new title was “*Addressing environmental challenges through research infrastructures and cooperative networks with an emphasis on marine and coastal regions*”, with new conveners (M. Reckermann, Francisco Bonet-Garcia, Donald Boesch and Michael Mirtl). The session was divided into oral and poster sessions. Unfortunately, M. Reckermann was unable to come to convene the session due to sudden illness, so that F. Bonet-Garcia convened the session.

The session presentations can be viewed at <https://agu.confex.com/agu/fm17/meetingapp.cgi/Session/35249>

TOP 3: Upcoming Baltic Earth and related Events

3.1 Med-CORDEX-Baltic Earth-Cost Workshop on “Regional Climate System Modelling for the European Sea regions”, Palma de Mallorca, 14-16 March 2018

This workshop is co-organized by Baltic Earth and Med-CORDEX, with support from COST. The aim of this workshop is to share recent progress in the understanding of regional climate variability with special focus on coupled effects between sea, atmosphere, land and anthroposphere. In this workshop, focus will be 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. The workshop is also strongly related to the Baltic Earth WG on Regional Coupled Regional Earth system Models.

For more information see <http://www.baltic.earth/mallorca2018/>

3.2 EGU Open Session on Coastal and Shelf Seas, Vienna, Austria, 8-13 April 2018

This year, the proposed Baltic Earth session was accidentally not considered. Instead, Baltic Earth will be represented at the EGU 2018 by OS 2.1 “Open Session on Coastal and Shelf Seas”, with Andreas Lehmann as co-convener. More infos at <http://meetingorganizer.copernicus.org/EGU2018/session/26756>

3.3 8th GEWEX Conference Canmore, Canada, 6-11 May 2018

At the GEWEX Conference, there will be two Baltic Earth related presentations, by Markus Meier, and by Marcus Reckermann on Baltic Earth in general, on the session on Regional Hydroclimate Projects. Possibly, a GHP meeting will be organized along with the conference. More infos at <https://www.gewexevents.org/events/2018conference/>

3.4 2nd Baltic Earth Conference, Helsingor, Denmark, 11-15 June 2018

The conference is in preparation. Confirmed keynote speakers are **Giuliano Di Baldassarre** (Natural Hazards in the Baltic Sea region) http://katalog.uu.se/profile/?id=N14-377_1
Ulrich Bathmann (European and national Earth system programmes) <https://www.io-warnemuende.de/ulrich-bathmann.html>
Anne Christine Brusendorff (ICES, organisation, tasks, activities and potential for collaboration) <http://www.ices.dk/explore-us/who-we-are/Pages/General-Secretary.aspx>
Joan Cuxard (GEWEX and GHP), <http://www.uib.eu/personal/ABTE2MTA2/>
subject to confirmation

Jason Holt and **Christoph Humburg** have not responded and are pending.

A young scientist’s event will be self-organized by students and may consist of one or two side-events. Details will be published on the conference website. <http://www.baltic.earth/helsingor2018/>

Abstract deadline is 18 February . All BESSG and SAB members are asked to actively propagate the submission of abstracts in their networks.

The 11th BESSG meeting will be attached to this meeting, on Sunday 10 June at 14:00.

Action Item 1: All BESSG and BESAB members to stimulate in their networks the submission of abstracts for the 2nd Baltic Earth Conference, before the deadline of 18 February

3.5 4th Baltic Earth Summer School, Askö, Sweden, 20 - 27 August 2018

For the fourth time, this summer school will take place on Askö in the Swedish archipelago. The School is open to undergraduate (preferable) and graduate students in marine sciences and associated fields and will focus on past and future changes in climate of the Baltic Sea region. See <http://www.baltic.earth/summerschool2018>

3.9 Baltic Earth Workshop on Multiple Drivers, Nov-Dec 2018

A workshop around the new Baltic Earth Grand Challenge 6 is planned as a brainstorming event in order to discuss, decide and initiate activities of the WG on Multiple Drivers. A tentative goal of this workshop could be the establishment of particular topics and a writing team for a White Paper or similar, on the topic of Multiple Drivers. A participation of HELCOM and BONUS is envisaged to attract experts on research of the different multiple drivers.

The workshop will be tentatively co-organized with Urmas Lips, Tallinn University of Technology, Estonia. Envisaged time window is November-December 2018.

Action Item 2: MM, MR together with the BE WG on Multiple Drivers, Urmas Lips and representatives of BONUS and HELCOM and all BESSG members to prepare a Workshop on “Multiple drivers of the regional Earth system”; in particular define topics and identify experts to invite to the workshop

TOP 4: Other Baltic Earth issues

4.1 Publication activities

ESD Special issue

The Special Issue in “Earth System Dynamics” on “Multiple drivers of Earth system changes in the Baltic Sea region” is now published. This is a special issue with contributions from the 1st Baltic Earth Conference. http://www.earth-syst-dynam.net/special_issue861.html

ORE project

The special project in “Oxford Research Encyclopedia” is on its way. So far 6 Baltic Earth related articles have been published. <http://climatescience.oxfordre.com/>
http://www.baltic.earth/publications/ORE_Baltic.html

4.3 Future Earth contact

A representative of Future Earth has responded to an application by Baltic Earth two years ago. She apologized for the long time of no response and said that the system of project networking within Future Earth had been re-organized. Now, it will be possible to combine with the Future Earth network of projects easier. It will be investigated how Baltic Earth fits into this new network structure.

Action Item 3: MR to investigate possibilities for Baltic Earth involvement in Future Earth, and together with MM, act towards this

TOP 5: Open discussion on various topics

5.1 New HELCOM strategy concerning climate change in the Baltic Sea regions

Jannica Haldin outlined the new HELCOM strategy concerning climate change. Coming next year, Finland will have the EU chairmanship, which will presumably give a certain emphasis on climate change issues in the Baltic Sea region. Also the Baltic Sea Action Plan (BSAP) will be updated starting in the autumn 2018. The updated version is expected to be published in 2021, which will more prominently feature climate change issues. Hence HELCOM needs scientific expertise to incorporate this into the plan and is interested in a collaboration. In doing so, HELCOM favors a more step-wise approach, and more active role of HELCOM from the very beginning. The BSAP update needs an early and participatory dialogue with the scientific community, to get timely access to all relevant scientific findings.

The HELCOM WG on the State of the Environment and Nature Conservation drafted a new proposal for future HELCOM work on climate change, in October 2017, this will be discussed between the HELCOM contracting parties in early 2018. The HELCOM WG suggests the production of “climate change report cards” which allow the quick, concise and user needs oriented communication of climate facts for decision makers.

However, the feedback and inputs by the national contracting partners must be awaited. Thereafter, HELCOM will reach out to the scientific community to organize the preparation and production of the climate change inputs into the next BSAP.

5.2 New BACC book

An open discussion was started concerning the production of a new BACC book. In general, BACC II was rated as very good and extensive and its findings very much up to date. Nevertheless, the need for an update was recognized by most but not all SSG members. The format of a new assessment may be different from the two previous ones. It should be more concisely written, more homogenous, involving more and earlier discussions among the different chapter authors. An active scientific committee should discuss the content and avoid doublings and contradictions, wherever possible, resolve inconsistencies Writing workshops should accompany the writing process. The technology, however, should remain unchanged, i.e. the synthesis and assessment of published literature.

There was no consent in the group on the possible new structure. A copy of the previous structure, i.e. past, current and future climate change and its impacts was only one possible variant. Another could be to orient the structure along the Baltic Earth Grand Challenges; this would be in line with the initial goal of Baltic Earth to produce BACC-like assessments for different topics. Taking this thought further, the assessment could be one on the different drivers for the regional changes, next to, but including climate change. HELCOM offered in this case to link the experts in the different fields together. The climate change expertise, however, rests with Baltic Earth and this should be at the heart of the new assessment. Also, HELCOM expectations should be incorporated into the new approach.

It was decided to postpone a decision on this and to think and discuss further. A decision, possibly at BESSG #11 at Helsingor, should be well prepared.

Action Item 4: MM and MR to prepare a decision on the preparation of a BACC II successor under the umbrella of Baltic Earth

5.3 Comments regarding Working Group work

It was recognized that the land-sea interaction aspect in WG 2 (Biogeochemical linkages) are not well represented. Possibly a workshop on the topic could be organized, and the international activities in this field need to be looked at. In addition, it was suggested that microbiological expertise might be needed in this WG.

Action Item 5: GR and members of WG 2 to recruit people for this subject, and in the medium-term to organize a Workshop on “Biogeochemical land-sea interlinkages in the Baltic Sea region”

Concerning GC 5 (Energy and water exchanges) it was recognized that a Baltic Earth activity could be to bring the international activities in hydrological modelling (e.g. at SHI, SMHI, FMI, DHI, DWD, various research groups etc.) together, possibly by a joint workshop (action item see TOP 6).

Another aspect discussed was related to Baltic Earth sessions at international conferences outside the Baltic Sea region. The question was raised how scientists from outside can be interested and involved. At international conferences away from the Baltic Sea (EGU and especially AGU) seem to be not very efficient in attracting people. Maybe this is due to a confinement in topics and /or session title to Baltic Sea (region) issues, rather than opening up to regional seas worldwide. Still, this was exactly the approach of the recent (submitted) Baltic Earth session “*Comparing Marginal Seas around the World – Coping with Similar Problems in Different Ways?*” at AGU 2017; still this did not attract enough contributions for a proper oral session. Baltic Earth is also represented at EGU 2018 in the Open Session on Coastal Seas. The WG on Regional Seas could organize intl. meetings and support intl. collaborations on common issues; however, an emphasis on European seas, especially the North Sea, was suggested to concentrate efforts and reflect the current developments in BONUS, resp. BONUS successor.

Action Item 6: CS and members of WG on Regional Seas to prepare and coordinate possible future collaborations with research groups in the North Sea and other regional seas, under the umbrella of Baltic Earth

5.3 Outreach

The short paper by HvS on Outreach was discussed and well received. A concrete pending outreach activity is the production of comprehensive summary booklets of the BACC II book for the general public in the different Baltic Sea region languages. The English version for the translations in other languages exists, and experts (responsible for the translation or organizing this) in the different countries have partly been identified (Irina Daniolovich for Belarus; Sergey Zhuravlev for Russia; Sirje Keevallik for Estonia). This activity should be accelerated and further candidates will be approached. Juris Aigars asked for the possibility to use this for an introductory chapter in a book on regional climate change in Latvia. In any case, a stand-alone booklet should be the usual way to disseminate the BACC II results to the general public.

Action Item 7: MR to approach possible partners in the different countries to initialize and promote the translation and country-specific regionalization of a BACC II summary booklet; prepare the publication by selecting photos

An important outreach activity for the scientific community, which is also a request by GEWEX GHP to Baltic Earth as GEWEX-RHP, is the production of a “metadatabase” on meteorological, hydrological, oceanographical, biogeochemical data which are available in the Baltic Sea region. All SSG members will be approached to help to collect this information, which will be published, on a dedicated webpage on the Baltic Earth website. A special request will be sent around. Sea ice and data on rivers and lakes should be included.

Action Item 8: MR to approach all BESSG members to prepare a list of available databases in the Baltic Sea region on the different disciplines; including which data (which parameter) are available at which resolution, for which time frame, at which institution under which conditions; with the respective weblinks and contact person.

Baltic Eye was mentioned as example for a professional outreach platform; a similar approach would, however, need a professional team of many experts.

<http://balticeye.org/en/>

TOP 6: Miscellaneous

Next BESSG Meeting #11: In connection with the 2nd Baltic Earth Conference, on Sunday 10 June 2018 at 14:00, in the Konventum Conference Centre, Helsingør, Denmark.

BESSG Meeting #12 suggested taking place in combination with the Workshop on Multiple Drivers in Nov/Dec 2018, presumably in Tallinn, co-organized by Urmas Lips (approached by MM)

In October 2019 celebrating 100th Birthday of SHI; Baltic Earth invited somehow to participate in festivities. Suggestion: combine with intl. Workshop on hydrological modelling in the BS region.

Action Item 9: SZ, VV with support of MR and MM to organize an International Baltic Earth Workshop on hydrological modelling in the Baltic Sea basin, in connection with the celebrations for the 100th Birthday of the State Hydrological Institute, St. Petersburg, Russia

Annex 1

Notes on the GHP panel meeting within TPE-GHP workshop, Kathmandu 17-19 October 2017

Joan Cuxart and Jason Evans, GHP Co-Chairs

The workshop has developed successfully, with some RHPs, CCs and the Data Centers reporting their activities in front of an audience composed by GHP panel members and IGPO, the TPE attendees and the participating Nepali scientists. The first session consisted in general introductory talks on TPE/Water Cycle and GEWEX/GHP activities. Scientific talks from TPE, GHP and Nepali scientists completed the program and allowed the participants to become aware of the activities of the different parties, facilitating the dialog and interaction between them.

The Panel meeting took place in three afternoon sessions, each lasting 1.5 hours, attended by the panel members (van Lipzig, Solman, Zaitchik, Li, Prudhomme), co-chair (Cuxart), IGPO director (van Oevelen), the RHP, CC and Data Center representatives (Reckermann/Baltic Earth, Lakatos/PannEx, DeBeer/CCRN/INARCH, Looser/GRDC, Forsythe/INTENSE) and Drs. Harding, Terao and Ailikun as invited participants, since they are proposing new potential activities in GHP. Absent co-chair Jason and panel member Ferguson sent their comments by e-mail.

The general functioning of GHP was revised. It is felt that the combination of RHPs and CCs is fine but would benefit of the following recommendations:

1. **Increase networking activities in all RHP/CCs, as in OzEWEX and Baltic Earth.**
2. Promote activities that attract young scientists and help them build up their careers, such as summer schools, specialized workshops made by the RHP/CCs open to all, or the edition of Special issues in scientific journals, assuring this way the generation renewal of GEWEX.
3. Ask the RHPs that are essentially networking such as OzEWEX to define more precisely how they address the GEWEX Science Questions, reporting first and foremost on the progress made in scientific advancement with respect to their own science plan.
4. Reflect on how to promote passage from "initiating" to "fully working" status, analyzing if an RHP is contributing significantly to GHP/GEWEX (see the published criteria) and also what the way would be to terminate an RHP if not successful.
5. Ask the RHPs to detail more precisely the regional aspects of their activities.
6. Allow the Crosscut actions to continue after their third year if their activities are successfully running, and if the third year report asks for it and details a plan of continuation activities.

Other suggested actions, more transversal, are below with the names of responsible parties.

Action Items

- **Consider organizing events taking together RHPs, perhaps organized thematically by one RHP, as long as these activities can be funded by the RHPs themselves, due to the current shortage of GEWEX funds. The first opportunity to discuss about this may be the RHP session at the GEWEX Science Conference in Canmore next May. Baltic Earth could contribute significantly initially (IGPO, GHP co-chairs, M. Reckermann).**

- Explore further funding possibilities, in particular from the Chinese part. It is suggested to contact Professor Wu, through Panel member Dr. Li (IGPO).
- Increase collaboration with CORDEX in particular with respect to RHPs (S. Solman).
- Put GHP activities in relation to the UN Sustainable Development Goals (All)
- Promote activities that result in peer reviewed publications, and promote them through RHP or GEWEX websites (All).
- Have each RHP showcase extreme events that can help show relevance and increase funding opportunities; make this part of reporting (IGPO specific request and make part of annual reporting).
- Have the RHP reporting template include the progress on the RHP's own science objectives and on networking activities. ACTION: IGPO update template, keeping it concise.

The conclusions of the present meeting will be presented for approval to the SSG at its 30th meeting in early 2018. It is still to be decided if the next GHP meeting will take place at Canmore (Canada) next May, or next fall in a place to be determined.

RHPs have reported their activities to the Panel. There are two fully working RHPs. *CCRN* is near the end and reports satisfactorily. It will be followed by a similar initiative developing further their current approach and covering a larger area, called Water Futures, that will probably apply for RHP status in the next GHP meeting. *HyMeX* enters its final third part with very mature activities and proposing some spin-off activities related to semi-arid terrain, atmospheric electricity and intermediate water formation for the next years. The Panel indicates that these two RHPs may teach a lot to new RHP initiatives.

Initiating RHPs are Baltic Earth, OzEWEX and HyVic. ***Baltic Earth* is active and running smoothly. The Panel appreciates that the initiative has a central place describing the data and indicates the contact persons, promoting datasharing. It applied for the status of fully working RHP, which is accorded by the Panel, and will start after formal approval by the SSG.**

OzEWEX has completed 2.5 years of the initiating status, the networking activities are excellent, but the plan and progress to address its Science Questions is not clearly stated (map main objectives, define activities and focus). The Panel proposes to extend the initiating status until next meeting. Better progress and reporting on the Science Questions are expected then to evaluate if passage to full working RHP is possible or a re-evaluation of the RHP status should be made.

Regarding ***HyVic***, the Panel finds the report to be incomplete. It considers that the funded related activities HYCRISTAL and WISER are very positive steps and that their achievements should be included in the report, since they contribute to the RHP objectives. It is recommended to also connect CORDEX-related activities that the Panel is aware of. Besides, the RHP chair informs in the report that new scientific activities are starting in the region surrounding Lake Victoria, and he suggests to expand the region of interest of the RHP in consequence. It is advised that the governance structure of the RHP is updated according to these lines, incorporating representatives of the funded actions in the region. Revised science and implementation plans according to the new structure and geographical domain should be undertaken. Discussion following these lines is expected to take place during the next 2018 GHP meeting, likely indicating the way to a new RHP proposition during 2019.

The only prospective RHP is ***PannEx***, on the Climate System in the Pannonian Basin. The chair, Monika Lakatos, has presented the final version of the white book, consisting in 5 Flagship Questions and 3 Crosscut Actions, the first version of the Science and Implementation Plans, that includes a 10-year calendar of actions, a well defined governance body and a funding search strategy. They ask to be given initiating status, agreed by the Panel, pending a final decision by SSG early 2018.

Panel member Silvina Solman reports on a tentative RHP for the Andes region, with provisional acronym ***AndEx***, lead by Dr. Germán Poveda. A meeting between some scientists of the Andean region and some GEWEX representatives will be held in Medellin (Colombia) in early December. The basic science and societal challenges for the region fit well with the WRCP Grand Challenges, and the GEWEX Science Questions will be discussed and a white paper will be drafted.

Establishing more formal links between TPE and GEWEX has been explored. Finally Dr. Ailikun, Director of the International Programme Office of TPE and co-organizer of the meeting, in cooperation with Panel member Xin Li, proposes that a Crosscutting action within GHP is established, with provisional title "***TPE Water Security***" and three work lines: High resolution climate modeling, land atmosphere processes and watershed hydrology. This will be subject to debate within the TPE community. There has been also a proposition of a ***post-MAHASRI*** activity on the Asian monsoon by Dr. Terao, for which the Panel asks for a more detailed plan and a wider proposing team, specially at the international level.

There are 3 active Crosscut actions. Dr. Forsythe reports for Dr. Fowler on the advances of ***INTENSE*** on sub-daily precipitation, which are considered very satisfactory by the Panel. The action is planned to finish by 2019 and the continuation of its activities would be considered very valuable for the community. The report by Dr. De Beer on ***INARCH*** on mountain hydrology for Dr. Pomeroy is also very satisfactory and the continuation of its activities is endorsed by the Panel. The Cold Shoulder Season ***Precipitation Near 0°C*** reports positive work although Dr. Groisman could not attend the meeting due to lack of funding. This CC has been active for 3 years and should report on its willingness to continue active or proceed to deliver a final report.

The intended Crosscut ***Water Management in Models***, introduced by Dr. Harding, has been extremely well perceived by the Panel and the rest of the audience. The Panel agrees on the very high potential of the action, but asks for more concrete further steps, defining the actions proposed and the scientists involved in them. Other CCs may be proposed, but they have not been formally presented in the meeting.

Finally the three Data Centers have sent their reports. Dr. Looser, in charge of the Global Runoff Data Centre (***GRDC***), has shown the progress of the databases, including ***HYDROLARE*** on lakes and reservoirs, and ***GPCC*** on precipitation data, which is now working with daily data.

The restricted meeting ends by discussing the Panel composition, which will have to be completed since there are at least two vacancies, Dr. Jan Polcher, who left at the end of 2016, and Dr. Benjamin Zaitchik, whose term ends at the end of this year and cannot be renewed for personal reasons.

The current status of the Panel is:

Co-chairs: Jason Evans (ending second term 2020), Joan Cuxart (ending first term 2020)

Panel Members: Nicole Van Lipzig (ending second term 2019), Silvina Solman (ending second term 2019), Craig Ferguson (ending first term 2017), Christel Prudhomme (ending first term 2017), Benjamin Zaitchik (ending first term 2017), Xin Li (ending first term 2018), Sylvester Danour (ending first term 2018).

Annex 2



Global Energy and Water Exchanges
*A Core Project of the
World Climate Research Programme*

19 March 2018

Dr. Marcus Reckermann
International Baltic Earth Secretariat, Head
International Projects Department SE
Helmholtz-Zentrum Geesthacht
Max-Planck-Straße 1
D-21502 Geesthacht
Germany

Dear Dr. Reckermann,

On behalf of the GEWEX Hydroclimatology Panel (GHP) Co-Chairs, I am pleased to inform you that the Panel grants Baltic Earth full Regional Hydroclimate Project (RHP) status. This follows your presentation on Baltic Earth at the 17-19 October 2017 GHP meeting, and was subsequently endorsed by the GEWEX Scientific Steering Group on 29 January–2 February 2018 in Washington, D.C.

The GHP confirms its regard and support for the material presented covering the efforts of the Baltic Earth science and implementation team(s) to meet all the criteria necessary to achieve full RHP status.

Sincerely,

A handwritten signature in black ink, appearing to read "Peter van Oevelen". The signature is fluid and cursive, with a large loop at the end.

Peter van Oevelen
Director, International GEWEX Project Office

cc: Jason Evans
Joan Cuxart

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