

The BACC effort

Hans von Storch and Marcus Reckermann

The BALTEX Assessment of Climate Change in the Baltic Sea Basin is an effort to determine the state of knowledge about climate, climate change and climate impact in the Baltic Sea catchment. Its process follows the IPCC to some extent, with an international steering committee, a list of lead authors, and an independent review process. The first report came out in 2008 - named BACC-1; now, a second report BACC-2 is in its finishing phase. All lead authors of BACC-2 are new, while some of the lead authors of BACC-1 have become members of the steering committee.

Principles of the BACC process are

- The assessment is a synthesis of material drawn comprehensively from the available scientifically legitimate literature (e.g. peer reviewed literature, conference proceedings, reports of scientific institutes).
- Influence or funding from groups with a political, economical or ideological agenda is not allowed; however, questions from such groups are welcome.
- If a consensus view cannot be found in the above defined literature, this is clearly stated and the differing views are documented. The assessment thus encompasses the knowledge about what scientists agree on but also identifies cases of disagreement or knowledge gaps.
- The assessment is evaluated by independent scientific reviewers.

In other words, BACC examines to what extent agreement or disagreement exists in the scientific literature on climate, climate change and climate impact in the Baltic Sea Basin, and abstains from deciding which of two or more opposing (in scientific legitimate literature documented) views is more plausible or even right/false. No recommendations for political or other decision processes are made.

The overall assessment of BACC-1 from 2008 was

- Presently a warming is going on in the Baltic Sea region and will continue throughout the 21st century.
- BACC considers it plausible that this warming is at least partly related to anthropogenic factors.
- So far, and in the next few decades, the signal is limited to temperature and directly related variables, such as ice conditions.
- Later, changes in the water cycle are expected to become obvious.
- This regional warming will have a variety of effects on terrestrial and marine ecosystems – some predictable such as the changes in the phenology others so far hardly predictable.

The full BACC-1 report was published in the book

The BACC author team, 2008: Assessment of Climate Change in the Baltic Sea Basin.

Springer Verlag Berlin - Heidelberg; ISBN 978-3-540-72785, 473 pp

which is now released from copyright so that it can be downloaded via

http://www.academia.edu/2266407/BACC_Assessment_of_Climate_Change_in_the_Baltic_Sea_Basin. More than 80 scientists from almost all countries in the Baltic Sea Basin have contributed.

The results of the second assessment BACC-2 exist in a preliminary version, with the key assertions

- New assessment finds results of BACC I valid
- Significant detail and additional material has been found and assessed. Some contested issues have been reconciled (e.g. sea surface temperature trends)
- Ability to run multi-model ensembles seems a major addition; first signs of detection studies, but attribution still weak
- Regional climate models still suffer from partly severe biases; the effect of certain drivers (aerosols, land use change) on regional climate statistics cannot be described by these models.

- Homogeneity is still a problem and sometimes not taken seriously enough
- The issue of multiple drivers on ecosystems and socio-economy is recognized, but more efforts to deal with are needed
- In many cases, the relative importance of different drivers, not only climate change, needs to be evaluated.