

Report of the External Scientific Advisory Group (ESAG) of the Bolin Centre for Climate Research

1. Mandate

The ESAG focuses on the quality of the science performed by the Bolin Centre. More specifically, its role is

- (i) to advise the Bolin Centre on its strengths, weaknesses and opportunities;
- (ii) to connect the Bolin Centre internationally to organized networks of climate and future Earth research.

2. Visit to the Bert Bolin Centre.

During 17-20 November 2015, the ESAG visited the Bert Bolin Centre. Members present: Johannes Oerlemans (Utrecht University, *Chair*), Eystein Jansen (University of Bergen), Anders Lindroth (Lund University). Unfortunately, Natalie Mahowald (Cornell University) and Raymond Pierrehumbert (University of Chicago) could not attend.

In the afternoon of the 17th of November the ESAG had an informal meeting with 8 PhD students, which had been chosen randomly from the 87 PhD students currently associated with the Bolin Centre.

The ESAG members then participated in the "Bolin Days" on 18-19 November.

The ESAG meeting took place in the morning of 20 November, and the chairman reported on the outcome during the Board Meeting in the afternoon.

3. Discussion with PhD students

The discussion with the PhD students was very enjoyable and informative. Among the issues discussed were: differences in types of contract, contributions to teaching, adequacy of facilities, quality and intensity of supervision, preparations for the step after the PhD, and possibilities to travel and visit workshops, summer schools and conferences.

Most outstanding conclusions:

- a) The majority of the PhD students come from abroad, for different reasons (although they agree that the working conditions are good, for most of them this was not the most important factor).
- b) The students are satisfied with the supervision they get, and the possibilities they have to consult other people if friction with the supervisor occurs.
- c) Although the laboratory facilities are generally considered to be good, progress of projects is sometimes hindered by lack of capacity (especially mass spectrometer, samples are then analysed abroad which requires organisation and causes delay).
- d) The students like to contribute to teaching; it is not experienced as a burden that distracts them from the core work.
- e) The students consider the existence of the Bolin Centre as 'great added value'. Notably the support to visit summer schools, conferences etc. is very much appreciated.

The ESAG advises to try to keep the differences in PhD contracts as small as possible. Sufficient means to visit workshops and conferences should be available to all students.

4. Strengths and weaknesses

Participation in the Bolin Days was an efficient way for the ESAG to obtain an overview of the research work undertaken in the centre. The ESAG has also been informed in a separate document about the progress in the various research areas.

The ESAG is impressed by the scope and quality of the research performed by the Bolin Centre and its collaborators. The output is at an adequate level. At the symposium the best contributions in terms of science and presentation were from young postdocs.

In the overall output senior scientist are less visible. Yet, this is important for the profile of the Bolin Centre in the international scientific arena.

The division of the research into six research areas is meaningful, although always somewhat arbitrary. It provides a good framework for the overall organisation of the research in the Bolin Centre.

In the 2014 report of the ESAG a list of strong points of the Bolin Centre was given. We have no reason to modify this list, except for mentioning that we appreciated the initiative to support new research ideas that were cross-cutting with some 'seed funding'.

Points that need attention / action / consideration

- a) The Bolin Centre collects unique datasets, some of which are very large. It appears that a start has been made to organize an efficient and user-friendly databank, but due to shifts in positions some delay has occurred. The ESAG advises to bring up the momentum again and ensure that the databank will be efficient and user-friendly. This is also an important aspect of creating stronger internal synergies in the Centre.
- b) The Bolin Centre should develop a data policy, stating the rules for data exchange with third parties (conditions, support, costs).
- c) In any large centre there is always the tendency to cover a wide range of subjects, even within a research area. Nevertheless, to be a player in the future, focus on successful/promising subjects requires continuous attention. There should be a mechanism within the Bolin Centre to shift means to such subjects (which inevitably will be at the cost of less successful topics).
- d) A strategy is needed to be able to offer more career perspectives to outstanding postdocs / junior scientists, thereby increasing the chances that they can stay at the Bolin Centre. This is a requirement for future recruitment and strengthening of the senior staff

Finalized on the 19th of December 2015 by J. Oerlemans (chair).