

Editorial: DEKLIM - PALEO

The results of climate research enjoy a high level of public interest. In addition, they raise questions at the political level regarding the extent, speed and impact of climate changes, which together define the range of options for political action to ensure climate protection. Research on the climate system and the extent to which it can be and is influenced by mankind is therefore a special challenge.

Four years ago, against the background of policy goals formulated at the international and national level (e.g. Kyoto Protocol and National Climate Protection Programme), the German Federal Ministry of Education and Research (BMBF) prepared a new climate research programme, with the aim of strengthening contributions to international research programmes such as WCRP and IGBP, and improving the scientific basis of climate protection measures in Germany.

Supplementing research activities in the institutional area (e.g. the Max Planck Society, Helmholtz Society and Leibniz Association), the design of *DEKLIM*, the *German Climate Research Programme*, introduced new priorities in the field of project funding: climate system research and climate impact research were merged into one programme; international orientation, interdisciplinarity and coordinated action involving the collection and evaluation of data on the one hand and climate modelling on the other, increasingly became funding requirements. In addition, for the first time, a young scientist's programme was included in a BMBF-funded climate research programme. This programme is intended to offer young scientists the opportunity to gain experience in heading their own research group or to create a research network between different research institutions. After a major international evaluation process, funding of DEKLIM began in 2001 (further details on DEKLIM are in the Program News Section).

Paleoclimatology research has been carried out in Germany for many years and has a good infrastructure that has developed over time. The high number of research projects submitted to DEKLIM was however surprising, also because funding criteria had been defined that were different from those in the past (in particular the close interlinkage between data and models). After the evaluation, paleoclimatology accounted for the largest DEKLIM area in terms of funding volume (about 39% of total funds), and four of the six young scientist groups were also working on paleoclimatological questions. Of course, this is partly due to the successful preliminary work (inter alia strategy fund project "Climate in historical times"/KIHZ). However, on the other hand it also reflects, I believe, a renaissance in this research area: paleoclimatology is not an "antiquated" science with huge data cemeteries or old, forgotten drilling cores. Modern paleoclimatology is in fact indispensable to our understanding of the climate system. Moreover, paleoclimatological data can be used to validate complex climate models, thereby making them more reliable. This combination of data, model development and understanding of the complex climate system on different temporal and spatial scales is the decisive basis required for climate research to understand past processes and events and to be able to venture a look into the future.

In structural and organizational terms, the DEKLIM programme was designed in such a way as to integrate these aspects and ensure a close exchange of information and intensive collaboration between research areas. A status seminar held after the first half of the programme period (10/2003) clearly underlined considerable progress that had already been made.

In addition, various further measures ensure the networking of DEKLIM with the national IPCC coordination process. The results of paleoclimatological research must be embodied in international climate modelling and in climate scenarios of the future more intensively than in the past, and relevant progress will certainly become visible once the fourth IPCC Assessment Report is published.

Over the last years, understanding of climate development has generally increased at the international level to such an extent that it is now increasingly important at the political level to find practical ways in which society should deal with the "climate challenge". Therefore, future BMBF-activities will be focused on research projects dealing with specific measures for reducing greenhouse gas emissions and for adaptation to extreme weather and climate change.

Paleoclimatological research has reached a high level in Germany and will continue in the future to hold an important position in the whole federal research system. Although major progress has been made, there are still many open questions that require new or further answers. The contributions in this special issue impressively highlight state-of-the-art research and at the same time point out the liveliness of this area. Against this background, I believe that "DEKLIM-Paleo" is a success story even today. I wish this special issue a friendly reception. I am certain that it will attract the interest of all those readers who cannot resist the fascination of climate research.

DR. U. KATENKAMP

Federal Ministry of Education and Research, Bonn, Germany
ulrich.katenkamp@bmbf.bund.de