

# Climate Services for German Society With Focus on Adaptation

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Eine Einrichtung des Helmholtz-Zentrums Geesthacht

## Climate Service Center Germany

- National „climate agency“ in Germany, interface between climate-related science and users in the private and public sector
- Founded in July 2009 at the Helmholtz-Zentrum Geesthacht
- Chiefly financed by the Federal Ministry of Research and Education (BMBF)
- Contribution to the *German High-Tech Strategy* on Climate Protection and to the *German National Adaptation Strategy*
- Integration of up-to-date knowledge on climate as basis for the adaptation measures
- The Climate Service Center operates as:
  - Integrator
  - Facilitator
  - Communicator
  - Community builder

### Strategic Targets



## Service to German Adaptation Projects e.g. KLIMZUG

KLIMZUG: Managing climate change in the regions for the future (BMBF funded 80M€ over five years)

Goal: Anticipated climate changes shall be integrated in processes of regional planning and development

KLIMZUG adopts network development in regions and their implementation as a main instrument

## Examples of Demand-oriented Products and Services

### Collection of statistical tools

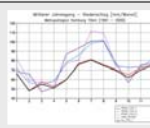
for evaluation and assessment of climate model data and climate impact data

Projects deal with huge data amounts → use statistical tools tailored to specific problems  
Tools enclose a broad variety → collect, assort and comment for future use

This needs **users** to fill in a table **editors** to assort and help to fit into the table **experts** to assess the statistical tools

**Categories for statistical methods / number of profiles („Steckbriefe“)** (at present)

- General statistical methods / 8
- Analysis of extreme values / 7
- Classification methods / 2
- Bias correction / 4
- Interpolation methods (incl. downscaling) / 5
- Indicators / 6
- Space-time analysis / 2
- Significance test / 4
- Time series analysis / 10

Category	Bias-correction
Procedure	"Quantile-Mapping with transfer function"
Description + Literature	Statistical correction of systematic deviations ... Piani et al., 2010 ....
Suitable for (parameter, time resolution)	e.g. precipitation, air temperature, global radiation
Prerequisite for application	Sufficiently good data set with daily resolution
Result / Interpretation	Corrected daily climate parameters from regional model simulations ...
Assessment	Applying bias-corrected climate data you have to regard: ...
Example / Publication	
Contact / Project	N.N. Project xxx, e-mail-address

### Climate Impacts Modelling: Challenges in Coupling Models

- Developing appropriate adaptation strategies requires, *inter alia*, that projected impacts are well defined and where possible, adaptation options economically costed
- Demands an integrated approach from climate models, to impact models, to socio-economic modelling
- A number of attendant issues and challenges involved in doing so:
  - Ensuring consistency of modelling approach when integrating different types of models
  - Trade offs between available resources and model complexity and space and time scales
  - Data processing e.g. bias correction
  - Dealing with uncertainty and using models to support decision making e.g. ensemble approaches
  - Lack of availability or difficulty of access to data e.g. socio-economic data
  - Currently no dynamic coupling between models
- CSC provides advice on how to handle these issues, and pursues long term solutions to overcome challenges.

### Climate navigator (<http://www.klimanavigator.de>)

National Web-Portal with more than 30 German institutions

- offers easy access to institutions working in the fields of climate, climate change and adaptation
- gives an overview of climate relevant research in Germany and insight in the current state of climate knowledge
- topics at present: greenhouse effect & scenarios, global climate modelling, extreme events

