The Role of Climate Service Center
How to adapt to climate change
A flexible modular approach for cities and companies

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- **Founded in 2009** by the German Federal Ministry of Education and Research
- Since June 2014 **scientific organizational entity** of Helmholtz-Zentrum Geesthacht
- Financed by **programme-oriented funding** of Helmholtz Association
- Acting director is **Dr. Daniela Jacob**
- Based in Hamburg’s **Chilehaus** (as before)
- **Interdisciplinary team** of natural scientists and socio-economists (approx. 40 staff members)

http://www.climate-service-center.de
GERICS offers in a scientifically sound manner products, advisory services and decision-relevant information in order to support government, administration and business in their efforts to adapt to climate change.

- **Practice-oriented** processing of scientific knowledge on climate change
- **Validation** by testing in practice:
  How and where does the service work? Does it cover the need?
- GERICS is operating **strictly source neutral**, based on all available scientific knowledge about climate and climate change
GERICS - Process of user specific knowledge transfer

with need for adaptation

tailored for user requirements
Main challenges for cities/companies

- CO₂ emissions (global 25% der direkten THG-Emissionen)
- Energy demand
- Waste/Sewage
- Demographic change
- Population growth
- Critical Infrastructure
- Groundwater catchments
- Fresh air corridors
- River basin
- Climate impacts
System map of cities

Entry points for adaptation:

1. Raise road beds, change routes
2. Enhance flood protection
3. Risk insurance
4. Heat resistant pavement materials
5. Improve storm water drainage
6. Maintain or improve infrastructure
7. Demand management (water pricing, ...)
8. Land-use planning
9. Building codes
10. Increase energy efficiency/insulation
11. Use natural "air-conditioning"-effects
12. Improve flood protection, relocation
13. Improve water management
The GERICS toolkit principle

Module (group) a

Module(group) b

User

Module (group) n
Toolkit principle - Prototypical development of user specific climate services

Adaptation Toolkit for cities

Adaptation Toolkit for companies
Urban water
Specific urban Climate information
Climate adapted urban development
Thermal comfort and housing environment
Urban green
Combined mitigation and adaptation concepts
Communication
Economics and financing
Monitoring and quality assurance
Critical infrastructure
Interfaces: e.g. to Adaptation Toolkit for companies
Modul group: Urban water

- Risk analysis for buildings
- "Flood-Audit" for municipalities
- Campaigns: Flood protections
- Climate resilient water laws
- Temporary flow paths and retention rooms

Urban Water

Campaigns:
- Flood protections

Climate resilient water laws

Temporary flow paths and retention rooms

Risk analysis for buildings

"Flood-Audit" for municipalities
Module group: Thermal comfort and housing environment (I)

Model area today
Recommended measures szenario „2050“

- Trees
- Opening backyards
- Unsealing backyards
- Using light road surfaces
- Use of irrigation control
- Adding water elements

Module group: Thermal comfort and housing environment (II)
Module group: Thermal comfort and housing environment (III)

„Redesign 2050“: 14:00h

„Redesign 2050“: 22:00h
Module group: Climate-adapted urban development

City Climate adapted Urban development

GERICS Hot-Spot-Map

City + GERICS Proposals for action

Framework conditions:
- climate adapted urban planning
- climate adapted compensation measures

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- regional climate data
- prototype development

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GERICS City + GERICS

Framework conditions:
- land use plan, development plan (building code)
Company toolkit: Climate-adapted company development

Private sector Initiative

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CT*-Analysis tool

Companies

Proposals for action

climate stress test

Framework conditions:
Business model, compliance, markets

CT = Company toolbox
Conclusions

Climate Services for cities should

- integrate the range of hazards for all affected sectors
- reflect locally specific objectives
- incorporate flexibility with respect to impacts

Moreover climate related

- risks are not uniform, they are individual
- actions should base on best available knowledge and information
- measures should be feasible with existing resources
Thank you very much for your attention

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