



Bundesministerium
für Umwelt, Naturschutz,
Bau und Reaktorsicherheit

DOMESTIC M&E SYSTEMS

INSIGHTS FROM THE GERMAN ADAPTATION STRATEGY

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GERMAN ADAPTATION STRATEGY (DAS)

2008: DAS passed by German parliament: sets the strategic framework for adapting to climate change in Germany

- Focusses on the contributions by federal government and establishes the basis for defining adaptation action at sub-national level and with non-state actors
- Components: Action Plan Adaptation, countrywide vulnerability assessment; **establishes an indicator system and regular indicator-based reporting on implementing the DAS**
- **Federal Environment Agency** is the key agent



GERMAN ADAPTATION STRATEGY (DAS)

Indicator system (plus first monitoring report):

- Developed between 2009 and 2014
- Process involving all relevant federal ministries as well as representatives of federal Länder
- + Non-governmental experts
- Political approval between 2012 and 2014



DAS: INDICATOR SYSTEM

Impacts

on key economic sectors, livelihoods and the environment.

Responses

adapation action

Does **not** monitor or prove climate change per se
No scenario-building
Includes measures that have not been designed as adapation action per se but **still contribute**



INDICATOR SYSTEM: DATA SOURCES

Regular reporting based on existing data.
Data sets need to be continually updated and validated.
One-time data (from scientific studies) not usable.
Governmental as well as non governmental data sources.

Data **only** relevant if they provide countrywide information.
No spatial disaggregation (i.e. maps).
No disaggregation by sub-national unit.
Does **not pre-empt** more detailed reports on specific sectors.



INDICATOR SYSTEM: STRUCTURE

- 1 Human Health (6,3)
- 2 Building (2,3)
- 3 Water Balance, Water Management, Coastal Mgmt (10,3)
- 4 Soil (2,3)
- 5 Biodiversity (3,2)
- 6 Agriculture (5,6)
- 7 Forestry (7,6)
- 8 Fisheries (2,0)
- 9 Energy management (4,4)
- 10 Financial Sector (3,1)
- 11 Transport, Transport Infrastructure (2,0)
- 12 Industry (1,1)
- 13 Tourism (7,0)
- CC1 Spatial, Regional Planning (0,6)*
- CC2 Civil defense (1,4)*



EXAMPLE: ACTION AREA WATER

IMPACT

- WW-I-1 Groundwater levels
- WW-I-2 Medium runoff
- WW-I-3 High tide
- WW-I-4 Low tide
- WW-I-5 Water temp (inshore)
- WW-I-6 Stagnation periods (inshore)
- WW-I-7 Algae bloom start
- WW-I-8 Ocean water temp
- WW-I-9 Sea level
- WW-I-10 Intensity of storm tides

RESPONSE

- WW-R-1 Water use index
- WW-R-2 Structure of nat. water systems
- WW-R-3 Investments: coastal protection



EXAMPLE: CROSS-CUTTING INDICATORS

- HUE-1 Manageability of climate change impacts
- HUE-2 Use of early warning and information services
- HUE-3 Federal expenditure on research projects for assessing climate change impacts and adaptation
- HUE-4 Climate change adaptation at municipal level
- HUE-5 International Climate Finance Contributions



EXAMPLE: RESPONSE INDICATORS

Health:

Heat warning service
Effectiveness of heat warning system
Information on pollen

Building:

Recreational zones
*Specific energy use for heating
private households*
Government support for
climate smart building

Soil:

Humic content of agricultural soils
Percentage of permanent green areas
Areas of organic soils

Biodiversity:

*Consideration of climate change
in landscape planning*
Protected areas

Agriculture:

Adjustment of management cycles
Change towards warmth-tolerant crops
Adaptation of plant selection
Selection of corn varieties
Use of pesticides
Irrigation volumes



EXAMPLE: RESPONSE INDICATORS

Forestry:

Change in forest composition

Forest structure adaptation

Restructuring of affected pine forests

Conservation of forest-genetic resources

Humic content in forest soils

Forestry-related information on adaptation

Financial sector:

Insurance density for residential property

Industry:

Water-intensity of manufacturing industries

Energy:

Diversification of energy production

Diversification of energy use

for heating and cooling

Energy storage system development

Water-efficiency of thermal power plants



EXAMPLE: RESPONSE INDICATORS

Cross-cutting: Planning

Preference for nature and landscape protection areas

Preference for ground- and drinking water protection areas

Preference for protective flood management

Preference for ecosystems with specific climate relevance

Percentage residential and transport areas

Residential areas in flood areas

Cross-cutting: Civil defense

Information on behavior in case of emergencies

Preparedness in the population

Active emergency helpers



MONITORING REPORT



- First report 2015
- To be updated in 4 year intervals
- Detailed assessment for all impact categories
- Assessment of developments with view to DAS goals (where possible)
- Background documents: Indicator and data factsheets
- Appr. 11 months projected for updates



RESPONSIBILITIES

**Coordination Center: Federal
Environment Agency (on behalf of BMUB)**

Overall technical steering; data quality,
trend assessment

**„Indicator owners’ – government
representatives with support of experts**

Updating of indicators: technical expertise,
data handling and processing (with CC;
detailed assignment for each indicator)

Key contacts at departmental level

Coordination at departmental level

**Process lead and political clearing:
BMUB**

Assurance of inter-departmental
acceptance

**Interministerial working group on the
DAS (federal government)**

Forum for participation and input of all
resorts, political alignment

**Permanent committee ‚adaptation to
climate impacts’ (federal Länder,
subnational level)**

Forum for participation and input from
the sub-national level



INDICATOR SYSTEM: CHALLENGES

- Data availability is limited and leads to limited representation of key topics through indicators
- Difficulty to single out cause-effect relationship in complex processes and systems
- Response measures not exclusively developed with the purpose of cc adaptation
- Crucial: further development of the dataset (detailed development and verification process has been developed)



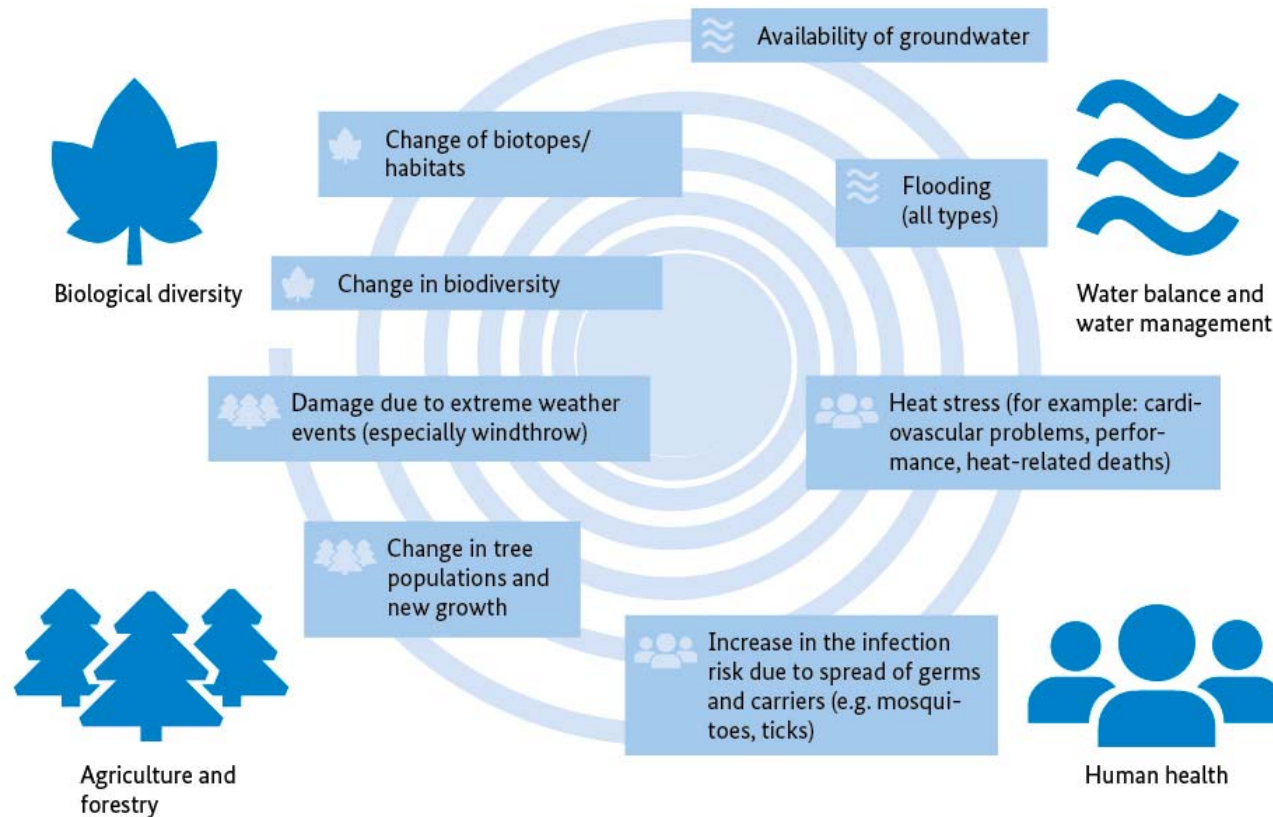
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THANK YOU FOR YOUR ATTENTION



CO BENEFITS - EFFECTS OF CLIMATE CHANGE ON THE ENVIRONMENT AND HEALTH



Source: BMUB Climate Action in Figures 2017,
based on UBA (2015c)