

## **6. Forschungsrahmenprogramm**

**Nachhaltige Entwicklung, globale Veränderungen und Ökosysteme**

### **1.1.6.3 Globale Veränderungen und Ökosysteme**

**Nationale Kontaktstelle Umwelt**

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## Thematische Priorität 1.1.6

### Nachhaltige Entwicklung, globale Veränderungen und Ökosysteme

#### *Schwerpunktbereiche:*

<b>6.1 Nachhaltige Energiesysteme</b>	<b>810 M€</b>
<b>6.2 Nachhaltiger Land- und Seeverkehr</b>	<b>610 M€</b>
<b>6.3 Globale Veränderungen und Ökosysteme</b>	<b>700 M€</b>

### **1.1.6.3 Globale Veränderungen und Ökosysteme**

#### **Ziel:**

- > *Besseres Verständnis des globalen Wandels***
- > *Stärkung der Fähigkeit für Messung und Vorhersage***
- > *Strategien für Vermeidung, Abschwächung und Anpassung zu entwickeln, für alle Treibhausgase***

***Betonung auf Auswirkungen des globalen Wandels in verschiedenen Regionen Europas und der Welt in allen Forschungsschwerpunkten***

# Area I: Impact and mechanisms of greenhouse gas emissions and atmospheric pollutants on climate, ozone depletion and carbon sinks (1)

- 1) **Regional carbon and greenhouse gas budgets (two STREPs/CA)**
  - > *Quantification, understanding, prediction of greenhouse gas emissions in the new member states (also: Amazonia, N. Russia, Siberia, Sub-Saharan Africa)*
  - > *improved quantification of the long term continental budgets and variability (Kyoto Protocol)*
  
- 2) **Atmospheric composition change: Methane, NitrousOxide and Hydrogen (two STREPs/CA)**
  - > *sinks and sources, monitoring of atmospheric methane, Nitrous Oxide, Hydrogen (global)*
  
- 3) **Atmospheric aerosols and climate forcing (one IP)**
  - > *role of aerosols in climate forcing and in regional air-quality (quantification),*
  - > *transport and transformation processes, effects on e.g. radiation, cloud formation,*

## **Area I: Impact and mechanisms of greenhouse gas emissions and atmospheric pollutants on climate, ozone depletion and carbon sinks (2)**

- 4) Climate change impacts in the Mediterranean area (one IP)**
  - > e.g. changes of weather patterns, extreme events, sea circulation, water resources and air pollution levels,*
  - > Participation from North African and Middle East countries encouraged,*
  
- 5) Climate changes in central-eastern Europe (two STREPs/CA)**
  - > Quantification of specific climate change impacts*
  - > e.g. changes of weather patterns, extreme events, water resources, consequences on agriculture, forestry, air pollution levels,*

## Area II: Water cycle, including soil-related aspects (1)

- 1) Source control of priority substances (two STREPs/CA)**
  - > *(Water Framework Directive) investigate alternative technologies, management options, monitoring systems,*
  - > *Assessment of the impact of different substitution options (ETAP)*
  
- 2) New concepts and processes in wastewater treatment (one IP)**
  - > *conceptual innovations in wastewater technologies and systems,*
  - > *defining a new set of advanced standards for wastewater treatm. (ETAP)*
  
- 3) Advanced technologies for locating, maintaining and rehabilitating buried infrastructures (two STREPs/CA)**
  - > *development of new technologies for water distribution, sewer networks,*
  - > *improve operation, maintenance, rehabilitation, serviceability, pollution prevention and safety (minimising costs), (industry/SMEs)*
  
- 4) Advances in desalination (two STREPs/CA)**
  - > *Innovative concepts and technological development of (membrane-based) water desalination processes, (industry/SMEs, third countries, ETAP)*

## Area II: Water cycle, including soil-related aspects (2)

### 5) **Water in Agriculture: new systems and technologies for irrigation and drainage** (two STREPs/CA)

- > *new engineering irrigation infrastructures management approaches, research and demonstrations activities, integrating innovative sensors technologies and measurement devices , Decision Support Systems,*
- > *third countries partners requested*

### 6) **Water scenarios for Europe and for neighbouring countries** (one IP)

- > *development of medium-long term model-supported consistent scenarios, based on advanced policy, demography, socio-economic and technological option design strategies,*
- > *support the EU Water Initiative, participation of third countries,*

## Area II: Water cycle, including soil-related aspects (3)

- 7) Twinning European/third countries river basins (two STREPs/CA)**
  - > integrated water resources management research activities in case studies, to be carried out on twinned catchments/river basins from Europe and from South- and East-Asian countries,*
  - > conflict resolution in transboundary catchments,*
  
- 8) Sustainable sanitation in Africa (two STREPs/CA)**
  - > to develop a variety of innovative, adaptable and replicable approaches to sustainable sanitation, aiming at integrating appropriate low cost technologies,*
  
- 9) A knowledge network for solving real-life water problems in developing countries (one CA)**
  - > development of a world-wide knowledge network, share knowledge and best practices in water supply and sanitation, viable technological solutions,*

## Area III: Biodiversity and ecosystems

- 1) **Develop model(s) and simulation(s) to assess and forecast changes in terrestrial biodiversity and ecosystems (one IP)**
  - > *Models and simulations should be designed with co-ordinated campaigns of field observations in key European ecosystems,*
  - > *Models should be sensitive to bio-geographical and socio-economic variations across Europe and forecast the combined effects on biodiversity of the main drivers (e.g. climate change, changes in land-use)*
  - > *Observations, analysis and model outputs should be organised (where possible) to be compatible with global Earth observations in biodiversity,*
  
- 2) **Assess and forecast changes in the Mediterranean and Black seas ecosystems and their ability to provide services (one IP)**
  - > *Models and simulations should be designed with co-ordinated field measurement campaigns, building on existing networks.*
  - > *Models should be sensitive to bio-geographical variations across the sea basins,*

## Area IV: Mechanisms of desertification and natural disasters

### 1) **Combat land degradation and desertification** (one IP)

- > development of concepts and actions for the protection and restoration of fragile ecosystems, including techniques for the protection against ground surface water erosion and soil degradation,*
- > project should take into account the framework set up by the GEO initiative,*

### 2) **Reduction of seismic risks** (two STREPs/CAs)

- > new methods and concepts in order to decrease risks from seismicity,*
- > improve the capacity to analyse and deliver timely integrated information for the preparedness for and the mitigation of the consequences of catastrophic seismic events in particular in large towns and highly populated areas (participation from third countries is encouraged),*

## **Area V: Strategies for sustainable land management, including coastal zones, agricultural land and forests**

- 1) Strategies for sustainable urban, peri-urban and rural land use relationships, with emphasis on understanding, planning and forecasting tools (one IP)**
  - > interaction between growing urban areas, the peri-urban and rural land uses, the environment, the industry, the agriculture production, the multi-purpose utilization of forest resources and coastal zones, the biodiversity,*
  
- 2) Development of tools for impact assessment of land uses policies on the sustainability of developing countries (two STREPs/CA)**
  - > emphasis: development of GEO compatible databases and tools for understanding, planning and forecasting impacts of land use policies on sustainable development,*

## **Area VI: Operational forecasting and modelling including global climatic change observation systems (1)**

- 1) European underwater ocean observatory system (one NoE)**
  - > implementation of a sustained European ocean margin observatory network, extending into deep water,*
  - > the network should have capability for documenting global change processes but with real time monitoring of short and medium term events providing immediate warnings related to natural hazards.*
  - > it would form the sub-sea segment of GMES and contribute to the GEO initiative*
  
- 2) Integrated development of European coastal and regional seas forecasting systems (one IP)**
  - > support of existing networks (remote sensing and in-situ observations),*
  - > system to make systematic measurements of oceanic parameters, including biological parameters, in the regional and coastal seas of Europe,*
  - > system is targeted at detecting environmental and climat changes (taking particularly into account the GMES and GEO initiatives),*

## Area VI: Operational forecasting and modelling including global climatic change observation systems (2)

### 3) European atmospheric observation systems (one IP)

- > continuation, analyses of long-term ground based atmospheric observations complementary to satellite measurements,*
- > improvement in the coordination between ground-based and satellite measurements,*
- > optimization of the European observing capabilities related to atmospheric composition, and climatic change,*
- > strengthen the ground based segment in observation of atmospheric climate parameters, composition and chemistry,  
( the project will contribute to the GEO aims for atmospheric composition and climate change)*

## Area VI: Operational forecasting and modelling including global climatic change observation system (3)

- 4) **Framework for economic and social aspects of the implementation plan of the GEO (two STREPs/CA)**
- > *the economic and social benefits are considered as the final objectives of the GEO initiative,*  
*(nevertheless they have still to be defined and structured following each area of the implementation plan)*
  - > *Methods and tools need to be defined and developed in order to provide quantitative and qualitative assessment of these benefits,*
  - > *aggregation of results will have also to be considered,*

## Area VII: Complementary research (1)

- 1) Validating, disseminating and exploiting best practices and decision-support tools for environment and health assessment and policy support (one CA)**
  - > This network shall focus on the dissemination of knowledge and best practices gained in research activities supporting the implementation of the European Environment and Health Action Plan,*
  - > Network will validate and exploit necessary methods and tools (e.g. software, models) to adapt data and results from European research projects on environment and health,*
  
- 2) Development of methods and tools for environment impact assessment and cost-benefit analysis for building and assessing future environment and health scenarios (one IP)**
  - > Identifying relationships between sources of pollution-emissions-concentrations- human exposure-health impacts including the monetary valuation of environment and health effects (e.g. air pollution, water, noise, combined exposures),*

## Area VII: Complementary research (2)

### 3) Health, economic and social impacts of extreme events (one IP)

*> Develop methodologies and systems to assess overall health, economic and social impacts of extreme events and to foster the development of early warning. Project should integrate and utilize data from different sources taking also into account concepts identified in the Implementation Plan of the Group on Earth Observations.*

### 4) Intelligent (smart) testing strategy for chemicals (one IP)

*> For chemicals that lack data on toxicological and exposure potential, the challenge is to create the means to efficiently and credibly predict toxic potency and levels of exposure to make reasonable decisions as to whether or not empirical studies are required to further refine a risk assessment.*

# Area VIII: Cross-cutting issue: Sustainable Development concepts and tools

## 1) Elaboration of new accounting frameworks of environmental externalities (one IP)

*> objective is to quantify within an accounting framework environmental impacts in the EU25 (air, soil and water pollution, soil and biodiversity losses, toxics, odours and waste). Framework will improve the quantification of the impacts to be used in cost-effectiveness and cost-benefit analyses to support impact assessments of policies, of technologies and of measures involving current and alternative sustainability standards.*

## 2) Verification testing networks (two STREPs/CA)

*> Creation of sectoral networks of testing centres for environmental technologies (ETAP) to evaluate the reliability of specifications provided by the producers. The successful actions should develop testing protocols...*

## 4. Call Information „Global Change and Ecosystems“

**Date of publication: 19.07.2005**

**Closure date: IP and NoE : Herbst 2005 (first stage)**  
**STREP and CA :**  
**SSA :**

**Total indicative budget: 205 M€**

**IP and NoE : M€**  
**STREP and CA: M€**  
**SSA : M€**

**Evaluation procedure: IP and NoE: two-stage procedure**

### Budgetaufteilung 7. RP - Bereich 'Zusammenarbeit'

Angaben in Mio. € für 2007 - 2013

(auf Basis des KOM-Vorschlags vom 6. April 2005)



Grafik: EU-Büro des BMBF

## Informationen zum 6. RP und Umwelt + 7.RP

- <http://www.cordis.lu/sustdev/environment/home.html>
- <http://www.eubuero.de>  
EU-Büro des BMBF für das Forschungsrahmenprogramm
- <http://www.rp6.de/inhalte/rp7>  
Vorbereitung des 7. Europäischen Forschungsrahmenprogramms (EUB)