



Nitrogen Cycle Related Research in FP6 and Perspectives for FP7

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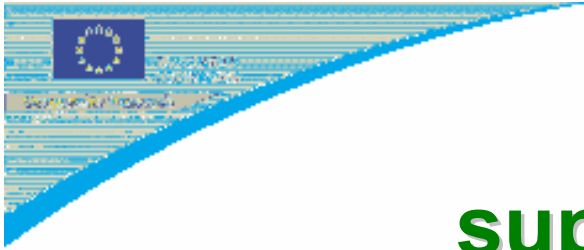
Ongoing GHG Research in FP6 (2002-2006)

Work programme of Area I of Global Change and Ecosystems Programme

Impact and mechanisms of GHG emissions and atmospheric pollutants on climate, ozone depletion and carbon sinks.

- I.1 Carbon and nitrogen cycles: sources and sinks
- I.2 Atmospheric pollutants and their regional impacts
- I.3 Climate dynamics and variability
- I.4 Prediction of climate change and its impacts
- I.5 Stratospheric ozone and climate interactions
- I.6 Adaptation and mitigation strategies





Integrated Projects supported within the FP6 “Carbon and Nitrogen Cycles” area

- CARBOEUROPE - IP: Assessment of European Terrestrial Carbon Balance, started on 01/01/2004, budget: 16.3 M€
- CARBOOCEAN - IP: Marine carbon sources and sinks assessment, started on 01/01/2005, budget: 14.5 M€
- NITROEUROPE - IP: The nitrogen cycle and its influence on the European greenhouse gas balance, under negotiation, started on 01/02/2006, budget: 16.6 M€

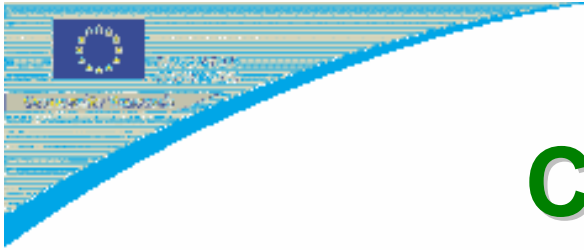




Other projects (SSP) and Specific Support Actions (SSA) within the “Carbon and Nitrogen Cycles” area

- INSEA, a SSP on GHG mitigation in agriculture and forestry, started on 01/01/2004, budget about 1.5 M€
- NEU-CO2-III, a SSA on a network dealing with non-energy use and CO2 emissions, started on 01/09/2004, budget about 0.3 M€
- PAN-AMAZONIA, a SSA on networked science on carbon cycle in Amazonia, started on 01/01/2004, budget 0.4 M€





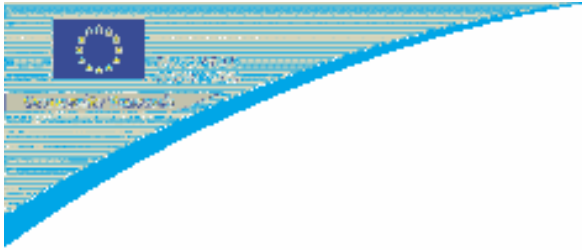
CARBOEUROPE-IP

4 Project Components

1. Ecosystem carbon budget
2. Continental atmospheric measurements
3. Regional carbon budget
4. Integration of scales and carbon data assimilation methods

<u>Co-ordinator:</u>	E. D. Schulze, MPI, Jena
<u>Partners:</u>	about 70
<u>Duration:</u>	5 years
<u>Starting date:</u>	1 January 2004



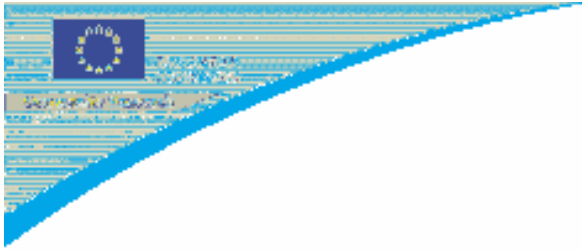


CARBOOCEAN-IP

Marine carbon sources and sinks

- Objectives: To assess the marine carbon sources and sinks within space and time, with focus on the Atlantic and Southern Oceans and between -200 and +200 years from now
- Co-ordinator: Ch. Heinze, University of Bergen, Norway
- Partners: 35 plus 6 American associates
- Duration: 5 years, starting date 1 January 2005





NITROEUROPE-IP

The nitrogen cycle and its influence on the European GHG balance

Objective: To better quantify the European nitrogen budget and fluxes for the terrestrial biosphere and investigate the coupling with the C-cycle (including methane), through integrated measurements, e.g. N₂O observations and up-scaled modelling

Co-ordinator: M. Sutton, CEH, Edinburgh

Partners: about 65

Duration: 5 years

Starting date: 1 February 2006





NITROEUROPE Components

1. Flux network
2. Manipulation experiments
3. Plot scale modelling
4. Landscape analysis
5. European integration
6. Verification
7. Standards and data management
8. Management
9. Training
10. Dissemination





4th Call, 2005

Deadlines 3 November 2005 / March 2006

GHG related topics

1. Regional carbon and greenhouse gas budgets (STREP/CA)
2. Atmospheric composition change: cycles of methane, nitrous oxide and hydrogen (STREP/CA)
3. European atmospheric observation systems (IP)

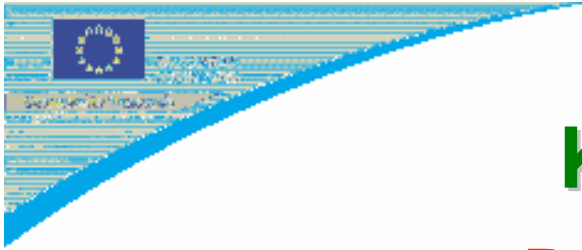




Selected STREP from 4th FP6 Call Under negotiation

- CARBO-North: Quantifying the carbon budget in Northern Russia
Co-ordinator: P. Kuhry, Stockholm University, Sweden
- CARBOAFRICA: Quantification, understanding and prediction of carbon cycle and other GHG gases in sub-Saharan Africa
Co-ordinator: R. Valentini, Tuscia University, Italy
- HYMN: Hydrogen, methane and nitrous oxide: trend variability, budgets and interactions with the biosphere
Co-ordinator: P. Van Velthoven, KNMI De Bilt, The Netherlands





Building the ERA of Knowledge for Growth

Proposal for the FP7 2007 - 2013

Cooperation – Collaborative research

Ideas – Frontier Research

People – Human Potential

Capacities – Research Capacity

+

JRC (non-nuclear)

JRC (nuclear)

Euratom





Cooperation – Collaborative research

9 themes

1. Health
2. Food, Agriculture and Biotechnology
3. Information and Communication Technologies
4. Nanosciences, Nanotechnologies, Materials and new Production Technologies
5. Energy
6. Environment (including Climate Change)
7. Transport (including Aeronautics)
8. Socio-Economic Sciences and the Humanities
9. Security and Space





6. Environment including climate change

Climate change, pollution and risks

Sustainable Management of Resources

Environmental Technologies

Earth observation and assessment tools





Climate change, pollution and risks

- **Pressure on environment and climate:** Functioning of climate and the Earth system: development of integrated research to observe, analyse and predict the evolution of the Earth System; measures of adaptation and mitigation to climate change and its impacts; quantification of carbon and GHG budget; ...
- **Environment and health:** Multidisciplinary research to effectively tackle the health impacts of various environmental stressors; ...
- **Natural hazards:** Improve prediction and integrated hazards – vulnerability – and risks assessment and mapping for disasters related to climate (storms, droughts, floods, forest fires and landslides) and geological hazards (earthquakes, volcanoes and tsunamis); ...



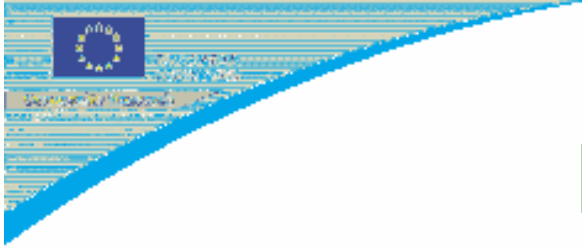


Pressure on environment and climate

Issues to be considered and further developed in the Work Programme

- Interactions between atmosphere, land surface and the ocean
- Changes in atmospheric composition and water cycle
- Budgets of carbon and GHG
- Interactions between carbon, nitrogen and water cycles
- Climate change impacts on biodiversity and ecosystems





Earth observation

- Development and integration of research activities into the Global Earth Observation System of Systems (GEOSS)
- Focus on climate change, natural hazards, ecosystems, natural resources, water, land use, environment and health and biodiversity
- Optimisation of information for understanding, modelling and predicting environmental phenomena

