GCP Activities/Outcomes

Scientific framework:
The GCP establishes research priorities and enhances coordinated carbon research based on its science framework and consultation with the scientific and policy communities.

Scientific networks:
The GCP implements its research agenda through collaborative efforts with national and international carbon programmes and funding agencies.

High level synthesis:
The GCP delivers high-level syntheses of information on the carbon cycle aimed at the research and assessment communities.

Pioneering research:
The GCP leads and facilitates a limited number of difficult and highly interdisciplinary new research initiatives that are feasible within a 3-5 year framework.

Conferences and workshops:
The GCP organises focused scientific and policy relevant conferences and workshops around the global carbon theme.

Support to international policy process:
The GCP contributes to SBSTA and COP events of UNFCCC from a scientific and science-policy perspectives.

Scientific information base:
The GCP develops scientific information aimed at researchers, policymakers, educators, students and media. Web-based resource center have been developed with information focusing on global carbon cycle and its management at multiple levels.

Capacity building:
The GCP develops a number of capacity building activities on the development of a new generation of young, senior scientists and scientists from developing countries trained in the highly interdisciplinary topics of the carbon-climate-human system.

GCP's Plan for Carbon Neutral

The Global Carbon Project is committed to reduce carbon emissions from its operation followed by carbon offset.

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Global Carbon Project

www.globalcarbonproject.org

for better understanding

and

management of
the global carbon cycle

The GCP

The Global Carbon Project (GCP) was established in 2001 to assist the international science community to establish a common, mutually agreed knowledge base supporting policy debate and action to slow the rate of increase of greenhouse gases (GHGs) in the atmosphere.

The GCP provides an internationally consistent framework for the coordination and integration of regional and global research on carbon cycle science including natural science and social science towards better understating & management of carbon-climate-human system.

Science Themes

The goal of the GCP is to develop comprehensive, policy relevant understanding of the global carbon cycle, encompassing its natural and human dimension and their interactions. This will be accomplished by determining and explaining three themes:

1. **Patterns and Variability:** What are the current geographical and temporal distributions of the major pools and fluxes in the global carbon cycle?
2. **Processes and Interactions:** What are the control and feedback mechanisms - both anthropogenic and non-anthropogenic - that determine the dynamics of the carbon cycle?
3. **Carbon Management:** What are the dynamics of the carbon-climate-human system into the future, and what points of intervention and windows of opportunity exist for human societies to manage this system?

Implementation Strategy

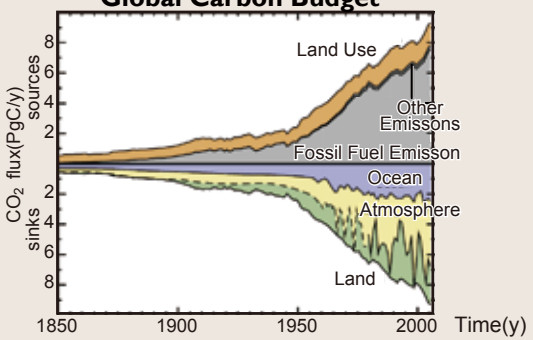
The implementation strategy of GCP is organized around the three science themes.

Theme 1: Patterns and Variability

Quantify current geographical and temporal distributions of the major carbon pools and fluxes through compiling new sectoral and regional budgets and developing model data fusion. Major areas of research include:

- Enhancing observations of carbon in atmosphere, ocean & terrestrial ecosystems
- Model-data synthesis to validate & enhance models with observation
- Regional and global carbon budgets
- Global emission patterns and drivers

Global Carbon Budget



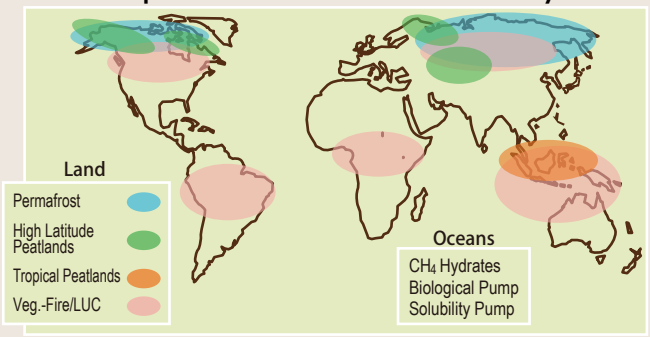
Data and data sources are available from:
http://lgmacweb.env.uea.ac.uk/lequere/co2/carbon_budget.htm

Theme 2: Processes and Interactions

Promote new research and syntheses to increase understanding of the controls on natural and human-driven sources and sinks of carbon, and the spatially explicit links between causes and effects, with particular emphasis on understanding the interactions among mechanisms and feedbacks among components of the coupled carbon-climate-human system. Major areas of research include:

- Sink/Source mechanisms (segregation of anthropogenic carbon into various sources and sinks)
- Emergent properties of the carbon-climate system
- Vulnerabilities of the large scale carbon pools in peatlands, vegetation fire, permafrost & methane hydrates

Vulnerability of the Carbon Cycle in the 21st Century Hot Spots of the Carbon-Climate-Human System



Source: Gruber et al. 2004; Canadell et al. 2007

Theme 3: Carbon Management

Identify and quantify points for intervention and windows of opportunity in the carbon cycle to steer the evolution of the coupled carbon-climate-human system. Major areas of research include:

- Points of intervention and options for mitigation
- Carbon management in the context of the whole earth system
- Carbon consequences of development pathways

Urban and Regional Carbon Management (URCM) Initiative

GCP launched the Urban and Regional Carbon Management (URCM) initiative in 2005. URCM is a place-based and policy-relevant scientific initiative aimed to support carbon management and sustainable urban development.

(http://www.gcp-urcm.org/)

Bio-energy

Research syntheses towards important publication/s and identifying major opportunities and constrains for bio-energy in the context of earth system sustainability.

Source:
Kim Worm Sorensen

Avoided Deforestation

Research syntheses relating climate change mitigation and avoided deforestation clarifying the potentials of avoided deforestation globally to improve carbon sink and issues surrounding it.