Progress in Dynamics of Terrestrial Carbon (IGCP-404)

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The aim of the IGCP 404 is to better quantify the variation in terrestrial carbon fluxes and storage in vegetation, soils and water during the glacial/interglacial climatic changes. Ice cores record have shown a clear covariation between atmospheric temperature and carbon gas concentration at the millenium time scale. But changes in global terrestrial carbon depends on the amount of change in each of the ecosystems that cover all continents. IGCP-404 working groups are organised to study the main ecosystems and fluxes.

Progress has been done in the following area: weathering fluxes changes; fluxes from the dissolution/precipitation in karst area of China (IGCP 379 group); new estimates in the peat carbon reservoir and in the associated methan fluxe. Carbon in lakes and underground water are now beginning to raise interest as a new interdisciplinary research. Isotopic composition changes of the continental carbon (at the millenia time-scale) may alter our views of the whole carbon cycle. Quantitative change in the equatorial forests ecosystems is still debated and needs further extended field studies. Several estimates of the changes in the terrestrial organic carbon stored on the shelf and destroid during post glacial sea level rise have been made in collaboration with IGCP 396. Tentative maps of changing ecosystems and desert margins show the necessity of more interdisciplinary studies focused on additional transects collaboration with IGCP413 should help in this endeavour.

Finaly we believe that a better understanding of the "missing sink" for anthropogenic greenhouse gases will be possible once we solve the problem of the "missing source" of carbon during a climatic glacial to interglacial changes..