

INFORMATION NOTE

Update on recent research activities of the EU 7th Framework Programme for Research and Technological Development in the field of Climate Change

This information note has the scope of complementing the extensive information provided to the Secretariat of the UNFCCC by the EU's 7th Framework Program for Research and Technological Development (FP7), for the purpose of the thirty-sixth session of the Subsidiary Body for Scientific and Technological Advice, Bonn, 14–25 May 2012 (document *FCCC/SBSTA/2012/MISC.3*). In particular, the current document provides information on three recently started projects in the area of adaptation and a brief summary from recent research highlights and conclusions from the FP7 project CARBOEXTREME (*The terrestrial carbon cycle under climate variability and extremes: a pan-European synthesis*). This complementary information is provided in relation to the upcoming session of the Research Dialogue that will take place during the 38th session of SBSTA (3-14 June 2013, Bonn, Germany).

Adaptation to climate change:

Research into the manifold dimensions of impacts, vulnerability and adaptation to climate change continue to receive significant support by the FP7. Three new projects have now been funded in the area of adaptation:

The **ToPDAd**¹ project (*Tool-supported policy-development for regional adaptation*) focuses on the development of state-of-the-art socio-economic methods and tools to support the integrated assessment of climate change impacts and adaptation decision-making. Emphasis is placed on the energy, transport, tourism sectors, but also on the health, environment and the socioeconomic domains. The toolset to be developed by the project will support the estimation of the multiplier effect of initial damage throughout an economy and the rate of recovery of that economy following a climate event or long term changes. Analyses will address the meso and macro-economic levels, but also the economic impacts of planned and autonomous adaptation responses.

The **BASE**² project (*Bottom-up Climate Adaptation Strategies towards a Sustainable Europe*) focuses on reconciling the bottom-up nature of adaptation with top-down strategic policy making through novel combinations of models and qualitative analyses. Through the analysis of over 20 cases, the project will aim at improving adaptation knowledge availability, integration and utilisation, at the promotion and strengthening of stakeholder participation in adaptation decisions and policies, and at supporting coherent, multi-level and multi-sector adaptation policy development. The project has a strong economic assessment component which includes: (a) the employment of top-down approaches to assess the economic benefits and costs of adaptation to society as a whole; and (b) the economic valuation of the costs of climate change impacts and of potential adaptation measures in selected case studies

The **RAMSES** project (*Reconciling Adaptation, Mitigation and Sustainable Development for Cities*) focuses on EU and international cities with the aim to develop an analytical framework for the implementation of adaptation measures and strategies, within the context of wider sustainability goals/programmes. The project will also provide an evidence-based frame for adaptation decision-making. Research will focus on climate change impacts and on the full economic costs and benefits associated with adaptation; the developed framework will be converted into a user-friendly guide for stakeholders, responding to their need for prioritising adaptation and mitigation decisions.

¹ www.topdad.eu

² <http://base-adaptation.eu>

Impacts of climate variability and extremes on carbon stocks of terrestrial ecosystems

Recent results of the project **CARBOEXTREME**³ indicate that the impacts of climate extremes on the carbon balance of terrestrial ecosystems have the potential to accelerate climate change. Annual global losses of carbon stocks and fluxes associated with extreme weather conditions are at least as high as the current land carbon sink. Globally, extremes in the water cycle, in particular droughts, have the strongest effects on the terrestrial carbon cycle, for instance exceeding that of temperature extremes. The most profound impacts are expected in forests, where fire induced by drought and heat waves can rapidly lead to large carbon losses and where tree mortality may cause a long-term legacy of committed carbon emissions. When considering future carbon management strategies, more attention must be given to the role of climate variability and extremes, in particular as related to the water cycle.

³ <http://www.carbo-extreme.eu>