DIVERSITAS: An international programme on biodiversity science

Introduction

DIVERSITAS, under the auspices of ICSU and UNESCO, delivers policy relevant scientific knowledge on biodiversity, to promote the conservation and sustainable use of biodiversity. The study of the interactions between climate change and biodiversity represents a high priority throughout the DIVERSITAS projects ranging from studying rapid evolution of species in the face of climate change to improving the representation of biodiversity in earth system models that are used to project future climate.

DIVERSITAS along with a wide range of other partners has embarked on several initiatives to improve the observations, experiments and models in order to detect, understand and model climate change impacts on biodiversity as well as the feedbacks of biodiversity change on climate and global biogeochemical cycles.

Research highlights

Integrated biodiversity and climate scenarios

Climate change has been highlighted as one of the main factors driving biodiversity change in the 21st century, and exacerbates impacts of other drivers on biodiversity. In turn, changes in vegetation cover can have considerable impacts on local, regional and global climate. An example is the consequences of deforestation in the Amazon, which leads to drying the regional climate, which in turn contributes to increases in fire and further reduction of forest cover. This type of feedbacks between climate and biodiversity changes can lead to tipping points that may have global consequences.

Integrating biodiversity into (regional land) cover change and climate models contributes to further understand such feedbacks. Furthermore, this integration also allows understanding the mitigating effects of biodiversity and land cover on climate. This has been at the heart of recent work of the DIVERSITAS project bioDISCOVERY, which shows that using such an integrated modelling approach to examine various policy-option scenarios (e.g. the Rio+20 scenarios) allows 1) identifying win-win options for biodiversity and climate changes mitigation, and 2) better informing policy and decision-making fora.

This work has contributed to the recently published IPCC AR5, and to the Global Biodiversity Outlook 4 to be published in October 2014.

In conclusion, this work on integrating climate and biodiversity modelling and scenarios contributes to improve predictions and outcomes of assessments mechanisms in both biodiversity (GBO4, IPBES) and climate (IPCC) fields. This also shows the synergies between these assessment mechanisms as well as the UN Rio Conventions they support, namely UNFCCC and the Convention on Biological Diversity (CBD).

Contact

Anne-Hélène Prieur-Richard, Acting Executive Director, DIVERSITAS, anne-helene@diversitas-international.org

Website: http://www.diversitas-international.org/