CASE STUDY

Carbon capture in tropical forests

Investigating the biodiversity, climate change and ecosystem services nexus in Latin America

CUSTOMER

European policy-makers and natural resource managers in Latin America

DELIVERABLE

Decision-support tools and methods to quantify climate change and biodiversity

OUTCOMES

Improved processes for land-use decision-making that incorporate biodiversity and climate change

> *"The outcomes of the ROBIN project are timely, relevant and examplary."*
>
> **Kurt Vandenberghe**
> Directorate-General for Research & Innovation, European Commission

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The challenge

Tropical forests are critical for supporting human life. Their wide range of biodiversity allows them to provide foodstuffs, fibres, and medicines, filter and control water flow, and remove and store carbon from the atmosphere, helping to regulate climate change.

Despite their importance tropical forests are increasingly under threat from deforestation, conversion to farmland and the impacts of our changing climate. By improving our understanding of how both forests and people adapt to environmental pressures we can ensure that forests continue to mitigate climate change and provide all the other ecosystem services we rely on.

The research

The Centre for Ecology & Hydrology (CEH) coordinates ROBIN (Role Of Biodiversity In climate change mitigatioN), a multinational project working towards better climate change mitigation and biodiversity protection in Latin America.

By developing decision-support tools for policy-makers, ROBIN provides an avenue through which biodiversity's role in lessening climate change can be incorporated into land-use decisions. The tools take into account the different ways of managing forest carbon for their effectiveness, their unintended effects on other ecosystem services and their consequences for people and biodiversity.

One such tool, the 'QUICKScan' Decision Support Tool, provides a rapid assessment of policy options and their environmental and socioeconomic ramifications. It is therefore invaluable to a wide range of groups including researchers, policy-makers, resource managers, NGOs and other stakeholders.

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> *"I'm quite convinced that... nature-based solutions... are the most cost-effective ways to both mitigate and adapt to climate change. So I'm very happy that the ROBIN project seems to confirm what I've been saying, and this shows how important projects like ROBIN are in underpinning our policy, to really make this case in the European Union."*
>
> **Stefan Leiner**
> Directorate-General
> for Environment,
> European Commission

Photo - Manuel Maass

Photo - Ian Simpson, CEH

CEH also undertakes the complex modelling for ROBIN, thus providing an integrated understanding of key social and ecological processes.

The outcomes

ROBIN is a vital resource for policies that lessen climate change and protect biodiversity. As well as providing indicators to the Convention on Biological Diversity, ROBIN will also produce practical guidance for natural resource managers in Latin America that can provide for their economic growth without compromising the forests' carbon storage.

The key products from ROBIN will include:

- new maps showing, for example, the current distribution of some fundamental biodiversity indicators and the potential contribution of biodiversity to climate change mitigation under predicted scenarios.
- tools for assessing the value of biodiversity in climate change mitigation, decision-support tools for local and national implementation of REDD+ or similar Payment for Ecosystem Services schemes, and tools for improved carbon and biodiversity monitoring.
- improved methods for monitoring carbon and biodiversity indicators, and enhanced biodiversity-based climate change mitigation solutions that can incorporate trade-offs with other ecosystem services.

Through ROBIN, CEH works to ensure increased storage of carbon in forests and multi-functional landscapes, decreased rates of biodiversity loss and due consideration to other ecosystem services involved in human wellbeing.

ROBIN partners

Comisión Nacional para el Conocimiento y Uso de la Biodiversidad • Empresa Brasileira de Pesquisa Agropecuaria • Instituto Boliviano de Investigación Forestal Asociacion • Instituto de Ecología • Universidad Nacional Autonoma de Mexico • Guyana Forestry Commission • Alterra • Wageningen University • University of Klagenfurt • Potsdam Institute for Climate Change • University of Madrid

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