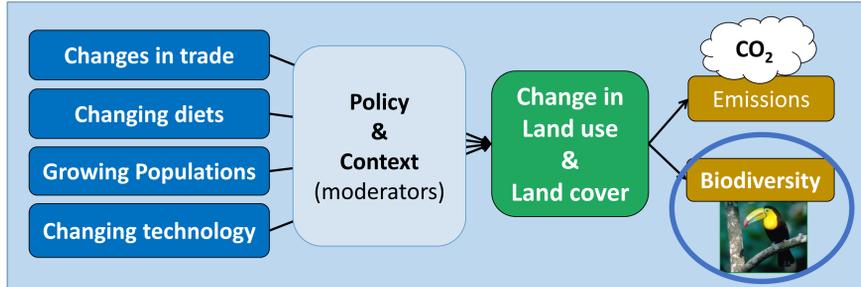


## Background

REDD+ policies will have major impacts on future land use and in turn biodiversity. These have implications for countries' commitments to addressing and respecting the UNFCCC REDD+ safeguards as well as their efforts to achieve the Aichi Biodiversity Targets set out by the Convention on Biological Diversity (CBD). Therefore, understanding how different policy options may influence land use and biodiversity is essential to inform decision-making.

**REDD+** Reducing Emissions from Deforestation and forest Degradation plus sustainable management of forests and conservation and enhancement of forest carbon stocks

Models can help to assess potential future land use change given different drivers



In the REDD-PAC project we are assessing the potential impacts of REDD+-relevant policies on biodiversity in Brazil and the Congo Basin by using an economic land use model (GLOBIOM) to project future land use and changes in land cover under different scenarios<sup>1</sup>. The potential impacts on biodiversity of the projected land use change are assessed in relation to ecological regions, nationally and regionally identified priority areas for biodiversity conservation, and species ranges.

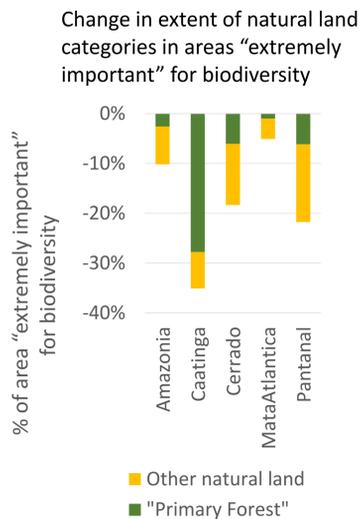
<sup>1</sup>See also poster "Congo Basin forests under pressure: the role of increasing population and strong international palm oil demand" and presentation "Pathways for sustainable REDD+ policies in Brazil"

## Initial Results - Brazil

In Brazil, the recently revised Forest Code and varying approaches to its implementation are among the policy options for reducing deforestation. GLOBIOM-Brazil has been used to model implementation of its different provisions, which differ among biomes, along with different levels of enforcement. The results give projections of land use change over 2010-2050, which have been used to assess potential biodiversity impacts.

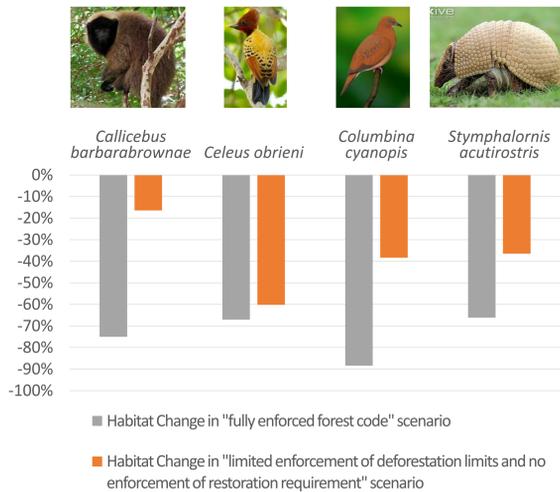
Focusing on areas identified by the Ministry of the Environment as "extremely important" for biodiversity (MMA 2007) under a scenario of full enforcement of the Forest Code, the analysis showed that:

- Relatively little conversion is projected for the remaining natural areas in Amazonia and Mata Atlantica suggesting positive biodiversity outcomes in these biomes.
- The Caatinga, Cerrado and Pantanal biomes face greater potential land use change pressure. Over 30% of the area identified as "extremely important" in the Caatinga may face conversion.



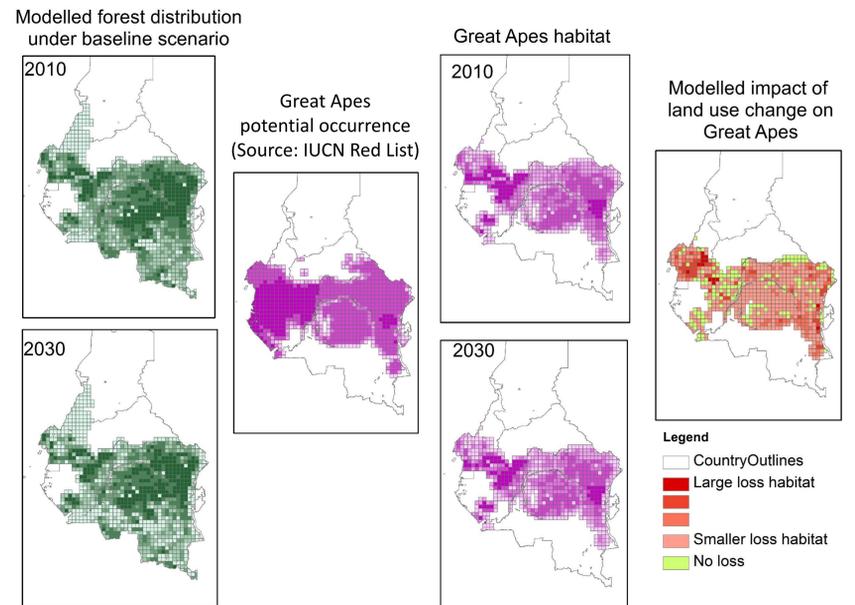
Projected land use change under different scenarios can also be used to assess potential impacts on **threatened species** and compatibility of these scenarios with achieving Aichi Biodiversity Target 12 on reducing extinction of threatened species. Such analysis could also inform assessments of species threat status.

Potential impacts on the habitats of threatened species differ under two scenarios of Forest Code implementation. Some species, mainly in Caatinga and Cerrado, are projected to lose a large proportion of their potential habitat. The larger projected loss under stronger enforcement of the Forest Code is due to displacement of land use change pressures from Amazonia to other biomes.



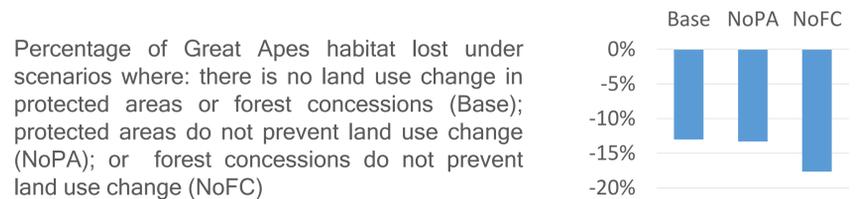
## Initial Results - Congo Basin

In the Congo Basin, the management of Forest Concessions (FC) and Protected Area (PA) are potentially important REDD+ policy options. The model projections show that, even assuming full enforcement of the current protected areas and forest concessions (i.e. no land use change within them), land use change is likely to cause substantial adverse impacts on biodiversity and related ecosystem services by 2030.



The Congo Basin contains several threatened Great Ape species, which have the potential to support the development of ecotourism activities, a key ecosystem service. Likely changes in Great Apes habitat are assessed by combining information on projected change in forest cover (2010-2030) with information on potential species occurrence.

To examine further the impact of forest concessions and protected areas, the model was run for scenarios in which FCs or PAs respectively do not constrain land use change. The results suggest that the role of FCs in maintaining forest cover may play an especially important part in conserving Great Apes' habitat. Expanding the network of protected areas as a means to reduce deforestation would also contribute to achieving Aichi Biodiversity Target 11 on protected area coverage.



## Conclusions

The specific policy options selected to achieve REDD+ objectives will determine the impacts of REDD+ on biodiversity and ecosystem services. The nature of the impacts will vary for the different aspects of biodiversity and ecosystem services that may be of interest. Therefore, it is important to explore the range of potential impacts of the different REDD+ options under consideration on other policy objectives. Land use change models and associated biodiversity assessments can help identify those REDD+ policy options that can contribute to the objectives of the CBD and the achievement of the Aichi Biodiversity Targets, and support the Cancun Safeguards for REDD+. To this end, REDD-PAC has undertaken and planned further work to expand on the analyses presented here.