

Promoting social and environmental benefits of REDD+ in Paraguay

Forests at risk

Paraguay's forests cover approximately 40% of the country. In addition to their role as a carbon store, they provide a number of important ecosystem services. These include soil erosion control; support to biodiversity and livelihoods; and the provision of timber and non-timber products, such as food, medicine and fuel. Paraguay's eastern region is home to the subtropical Upper Paraná Atlantic Forest, which is among the most biodiverse and threatened ecosystems in the world. The Chaco, or western region, has 84% of Paraguay's forest cover, and is part of one of the world's largest remaining areas of dry tropical forest. Over the last few decades, both regions have experienced large-scale deforestation and forest degradation, due in large to past agricultural expansion and population growth. According to scenarios of future deforestation developed by the Tropical Agricultural Research and Higher Education Center (CATIE), these factors will continue to pose threats to Paraguay's forests. Successful REDD+ actions focused on protecting forests at risk, or restoring deforested or degraded land, can have important climate change mitigation impacts, and can provide social and environmental benefits in Paraguay.

Using REDD+ to achieve a variety of benefits

The primary aim of REDD+ is to contribute to climate change mitigation by maintaining and enhancing forest carbon stocks. Well-designed REDD+ actions can also deliver additional social and environmental benefits. Depending on how actions are planned and implemented, they may also pose certain risks. Achieving multiple social and environmental benefits - while avoiding risks - can increase the long-term sustainability of REDD+. This is also in line with the UNFCCC safeguards for REDD+, which have been developed to promote benefits and protect against risks.

Spatial analysis can support the development of national strategies and implementation plans for REDD+. By helping to identify



REDD+ actions can help to deliver social and environmental benefits beyond climate change mitigation alone.

areas with potential to deliver multiple social and environmental benefits from REDD+ actions, as well as those under pressure from deforestation or suitable for forest restoration, spatial information can show where REDD+ actions could potentially deliver benefits in addition to climate change mitigation.

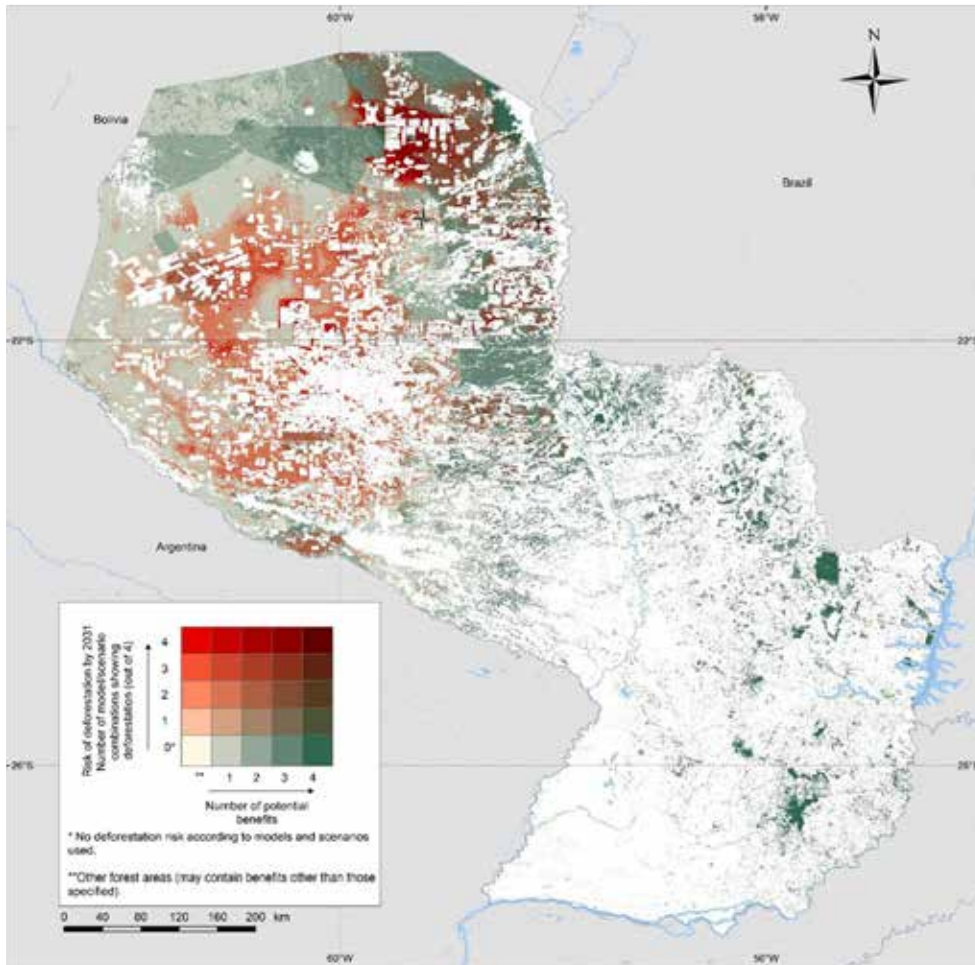
An important additional criterion in REDD+ planning will be the relative costs of different actions. Information on the implementation costs of REDD+ actions, in combination with spatial information on the distribution of benefits and risks, can help decision-makers to design cost-effective REDD+ implementation plans. Work on opportunity costs can contribute to an overview of land value, to help consider potential gains from REDD+ actions in comparison with alternative land uses.



Paraguay's forests provide a range of important ecosystem services, which are threatened by deforestation and forest degradation.

Risk to forest areas of potential importance for multiple benefits of REDD+

This map shows forest areas important for various combinations of potential benefits, highlighting those at risk of future deforestation. The benefits included in this analysis are: carbon sequestration, biodiversity conservation (considering Important Bird and Biodiversity Areas and threatened species richness) and soil erosion control. Areas that are of potential importance for multiple benefits, but that are also at risk of future deforestation, are shown in burgundy. These areas could be priority locations for REDD+ actions to reduce deforestation.



Data sources: Hijmans (2005), GWSP Digital Water Atlas (2008), Lehner et al. (2008), PNC ONU-REDD+ Paraguay (2011), Saatchi et al. (2011), Birdlife and Conservation International (2012), IUCN Red List of Threatened Species (2013), CATIE (2014), IABIN Dams of Paraguay compiled by TNC. For a full method description, please see: Walcott, J. et al. (2015). *Mapping multiple benefits of REDD+ in Paraguay: using spatial information to support land-use planning*. Cambridge, UK: UNEP-WCMC. Available online at <http://bit.ly/paraguaymultiplebenefits>



Deforestation reduces the capacity of soil to retain water, which may cause soil erosion and make parts of Paraguay more prone to flooding.



In addition to their role as carbon stores, Paraguay's forests provide social and environmental benefits.



Both the Chaco and east of Paraguay harbour species of regional and global importance, which are threatened by deforestation.

Forest restoration

Information on historical and current forest cover, land use, human pressures and infrastructure have been used in consultation with national stakeholders to identify potential restoration opportunities in Paraguay, highlighting areas that may be suitable for wide- or small-scale restoration, as well as seasonally flooded areas with restoration potential. REDD+ actions to restore forests can not only enhance forest carbon stocks, but may also support the provision of additional social and environmental benefits. Potential benefits of forest restoration in Paraguay identified by stakeholders include: support to livelihoods; conservation and enhancement of biodiversity; and soil erosion control.

Ongoing work

Paraguay's UN-REDD National Joint Programme is focused on implementing REDD+ in alignment with the country's conservation and development objectives. This work is undertaken with collaboration between the Ministry of Environment (SEAM), the National Forestry Institute (INFONA) and the Federation for the Self-Determination of Indigenous People (FAPI). Particular attention is paid to the needs of forest-dependent and indigenous communities. Recent analyses on multiple benefits that can be achieved through REDD+ actions, along with studies on stakeholder mapping, deforestation scenarios and opportunity costs of REDD+, are contributing to this work, as well as to the development of a national REDD+ strategy.

Prepared by UNEP-WCMC on behalf of the UN-REDD Programme, 2016

Mapping multiple benefits of REDD+ in Paraguay: using spatial information to support land-use planning is available for download here: <http://bit.ly/paraguaymultiplebenefits>

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