The Coalition of Finance Ministers for Climate Action

Pricing carbon in the tropics: the CP+ model

Environment for Development Initiative

A contribution to the 'Compendium of Practice from a Global Community of Ministries of Finance and Leading Organizations: Economic analysis and modeling tools to assist Ministries of Finance in driving green and resilient transitions'

Topic: Modeling tools relevant to Ministries of Finance

June 2025

Access the full Compendium at www.greenandresilienteconomics.org

This contribution was prepared at the request of, and with guidance from, the Ministry of Finance of Denmark as Lead of the Coalition's Helsinki Principle 4 initiative 'Economic Analysis for Green and Resilient Transitions' and its Steering Group, with input from its Technical Advisory Group. The views, findings, interpretations, and conclusions expressed are those of the authors. While many Coalition members and partners may support the general thrust of the arguments, findings, and recommendations made in this contribution, it does not necessarily reflect the views of the Coalition, its members, or the affiliations of the authors, nor does it represent an endorsement of any of the views expressed herein by any individual member of the Coalition.

In the tropics, greenhouse gas emissions from land use clearly dominate those from fossil fuels. In fact, agriculture, forestry, and other land use (AFOLU) accounts for 60% of total emissions in Colombia. This is particularly challenging from a policy perspective since land-based emissions are diffuse and unregulated in most countries. The Carbon Pricing Plus (CP+) model, developed by the Universidad de Los Andes (Management School and EfD Colombia), the Centro de Estudios Manuel Ramírez (CEMR), and the Environmental Defense Fund (EDF), is a user-friendly model in Excel that brings under the same policy umbrella regulated (carbon pricing) and unregulated emission (+) sources. Using existing marginal abatement cost (MAC) curves estimates for the regulated sector (energy and industry) and the unregulated sectors (forestry) in Colombia, the model considers scenarios where reduced deforestation may be funded by three different sources: the national budget, a national emissions trading system (ETS) coupled with a high integrity (jurisdictional) carbon forest offset mechanism, and international sources of funding. The analysis will be carried out over seven years, specifically for the 2024–2030 period. When reduced deforestation is linked to a national carbon pricing scheme and international results-based payments, the public funding needed to achieve the Nationally Determined Contribution deforestation target in 2030 is about 10 times lower than that in the scenario where only Government funding is used. The CP+ model was shared with modelers from the Ministry of Environment and the National Planning Department in workshops carried out in Bogotá in 2023. The model is being generalized, so applications to other tropical countries can be implemented.

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