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# Introduction

# Environmental and development issues in Latin America: moving forward

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For the most part, economic research in Latin America has had a 'macro' orientation (e.g., economic growth, monetary and fiscal policy, hyperinflation crisis). This is perfectly understandable because of the macro instability that has affected the entire region for decades and that still remains in many places. However, the composition of research is gradually changing as more attention is paid to a wider set of problems. Nowadays we see an increasing number of researchers in the region focusing on a variety of economic problems dealing with health, education, poverty alleviation, competition policy and the protection of natural resources and pollution control, among many others. This special issue of *Environment and Development Economics* presents a small sample of four research papers on these latter topics by researchers in established academic institutions in the region.

The first paper, by Marcelo Caffera from the Universidad de Montevideo, Uruguay, provides a political economic analysis of why market-based instruments for pollution control, such as Pigouvian taxes and tradable pollution quotas, have rarely been used in Latin America. The author can only point to three experiences in the entire region and holds little hope that their use can be extended much further without building more institutional capacity.

The second paper, by Juan Camilo Cardenas from Universidad de los Andes, Colombia, Luis Angela Rodriguez from Instituto A. von Humbolt, Colombia, and Nancy Johnson from ILRI, Kenya, reports the results of two field experiments on the collective use of water resources in Colombia and Kenya. In both cases the authors reject the free-riding or no-contribution hypothesis, which is a standard theoretical prediction in

open-access resource games. The authors go on to explain that face-to-face communication is an effective mechanism to enhance cooperation and that this mechanism works particularly well in the case of Colombia.

The third paper, by Raúl O'Ryan from Universidad de Chile and UNDP, Carlos J. de Miguel from CEPAL, Chile, Sebastián Miller from IADB, USA, and Mauricio Pereira from CEPAL, Chile, presents a computable general equilibrium model which permits, among other things, the study of the impact of free trade agreements (FTAs) on employment, particularly of unskilled workers, and on pollution levels. Their study focuses on the FTAs signed by Chile with the EU and the USA and finds that both have contributed to the expansion of sectors intensive in unskilled labor. Somewhat surprisingly, they also find these agreements to have little or no effect on carbon dioxide and particulate emissions. It would be most interesting to extend this analysis to other countries in the region to see whether these results hold more generally.

The final paper in this special issue, by Felipe Vásquez and Jorge Dresner from Universidad de Concepción, Chile, and Renato Aguilar from Gothenburg University, Sweden, uses market wages and housing rents from different cities in Chile to infer how much people value safety environments in terms of low pollution levels and crime rates. The authors point out that their results, which are valuable since little is known from less developed countries, should be interpreted with care because of some methodological problems imposed by data limitations.

These four papers are far from exhausting research needs and opportunities in the region. Below we provide a short list of important areas where we expect more research to be undertaken.

The first area entails improving our understanding of decisions related to adaptation to climate change, focusing on vulnerable agricultural communities in the region. The climate change predictions for the entire region add a layer of increased exposure to slow changes in climate to already impoverished and highly sensitive farming communities. Similarly, a stable prediction for the Central American and Caribbean region is increased exposure to more frequent and damaging tropical cyclones, with far-ranging consequences for coastal communities and urban planning. In these cases, understanding and improving our adaptation capacity and opportunities is likely to have broad implications for poverty alleviation.

The second broad area of research encompasses land use and land use change, including input to the design of programs to reduce emissions from deforestation and degradation, and more broadly to the design of markets for ecosystem services. Once again, improving our understanding of land use change in the face of changing climate variables and market opportunities is likely to have profound implications for the conservation of key ecosystems on the one hand (Latin America is host to six of the world's 17 megadiverse countries), and poverty alleviation on the other.

The third area of research revolves around water issues. Latin America has extremely varied natural endowments of this key natural resource, but whether it is scarce or abundant, management policies for water have been limited and rather poor, the big exception being the Chilean

water markets. Desertification, salinization, appalling sanitation practices, melting of Andean glaciers, increased demand for irrigation in agriculture and increased demand for hydropower are affecting the Latin American and Caribbean (LAC) countries in one way or another. Added to this is the omnipresent need to provide quality drinking water to growing cities in the region.

A fourth area of research is what we can loosely call 'getting companies on board'. Latin American governments have shown little clout for enforcing regulations and a very limited capacity for passing legislation, including market disincentives for polluting firms, which could reduce the competitiveness of local industries. Yet consumers worldwide, and most importantly in Latin America, are increasingly demanding more environmental quality and responsibility. The growing Latin American middle class is urban, educated, young and posh, and as demanding and connected as their European counterparts. Local firms (and politicians) are increasingly feeling the pressure, opening the field to interesting research contributions on certification, voluntary agreements and niche markets.

Rather than aiming for a complete list of topics, our aim here us to highlight a key characteristic of research in environmental economics in general, and the LAC region is no exception: environmental issues are intrinsically linked to development concerns, and the region's capacity to generate wealth (even if measured in GDP terms) is inevitably determined by decisions regarding the use and management of the environmental resource base (e.g., water, land, climate).

**Capacity building in environmental and resource economics**

The Latin American and Caribbean Environmental Economics Program (LACEEP) supports interested scholars in Latin America willing to conduct research in environmental and resource economics. LACEEP (www.laceep.org) is a capacity-building program which provides research grants to LAC researchers, as well as offering advice to grant holders, training courses and networking.