

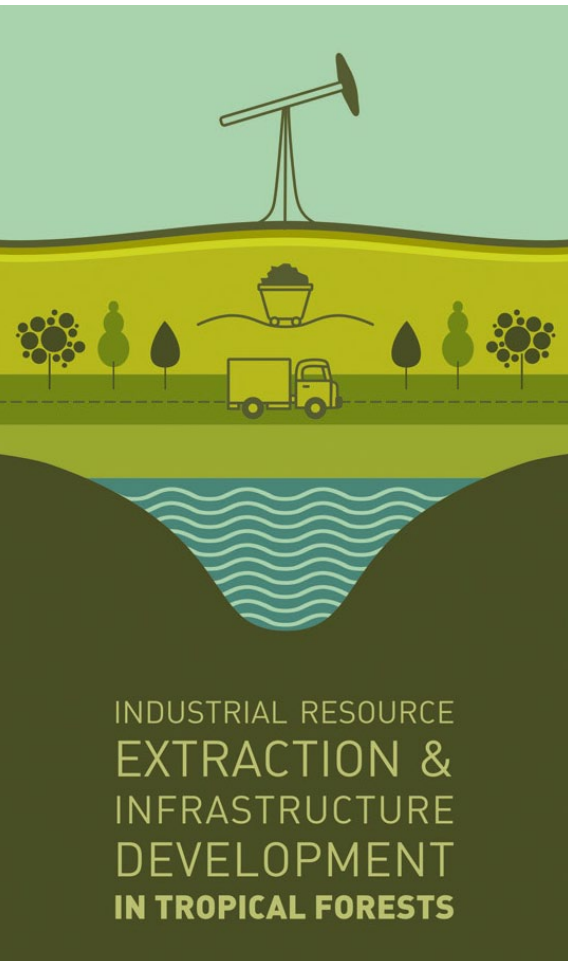
CONFERENCE REPORT

## Industrial Resource Extraction and Infrastructure Development in Tropical Forests

Panama City, Panama  
April 26-27, 2012

A conference jointly organized by:  
Environmental Leadership & Training Initiative (ELTI)  
Proyecto de Reforestación con Especies Nativas (PRORENA)

**Background:** According to the United Nations Environment Programme (UNEP)<sup>1</sup>, Central America and Mexico (Mesoamerica) had 73 million hectares of forested land in 2000, representing 7.5% of the forested area in Latin America and the Caribbean. While Latin America's annual rate of deforestation is 0.48%, one of the highest in the world, the Mesoamerican sub-region has an even higher rate of 1.2% per year. Currently, conventional (e.g. cattle ranching, agricultural expansion) and emerging (e.g. resource extraction, infrastructure development) changes in land use continue to take a significant toll on the region's remaining forests, impacting biodiversity and potentially affecting the livelihoods and welfare of its human inhabitants.



In recent years, the increase in economic interests in resource extraction and infrastructure construction on tropical forested lands has been significant. Due to global demand for oil and minerals, billions of dollars have been invested in drilling, mining, and improving road access to remote areas. Additionally, infrastructure concessions have encouraged the harnessing of rivers for hydroelectricity, flood control, and drinking water reservoirs. While these activities can bring about economic development they also endanger forests, the services they provide, and the livelihoods of the people that depend on them. Hydroelectric dams have been associated with loss of forested habitat, biodiversity, and ecosystem services due to flooding, degradation of upstream catchment areas, and sedimentation of waterways. Mining and oil exploration and exploitation have also been related to the destruction of large forest tracts and soil as well as water contamination. Given the aforementioned reasons, the development of these economic activities in the tropics has been subject to strong criticism from the scientific and NGO community.

Nonetheless, some examples show that profits derived from these activities can have a significant impact in protecting tropical forests. Investing those profits into protected areas infrastructure and management within and adjacent to resource extraction concessions, can take the pressure off of cash strapped state institutions to finance conservation and restoration

1. Global Environmental Outlook 3: State of the Environmental and Policy Retrospective 1972-2002  
2. Wunder, S. and W. D. Sunderlin. 2004. Oil, macroeconomics and forests: assessing the linkages. World Bank Research Observer 19:231-257.

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initiatives. In addition, a study by the Center of International Forestry Research (CIFOR)<sup>2</sup> argues that appropriate domestic policies that direct oil wealth to urban spending could reduce the price-competitiveness of land clearing for agriculture and logging, taking pressure off the forest.

This plurality of perspectives and interests around these activities motivated ELTI and PRORENA to host a conference designed to provide a forum for scientists, decision makers, academics, government officials, representatives from NGOs and the private sector, and community and indigenous leaders to learn about and discuss key issues surrounding industrial land uses in forested regions in the tropics. These topics are of relevance throughout the region, including Panama, given that resource extraction and infrastructure development projects play a key role in the development model of many countries.

**Objectives:**

- Provide a forum to present and share scientific research related to resources extraction and infrastructure development activities, including mining, oil exploitation, and hydroelectric dam and road construction, and their implications on forests and people in the Neotropics.
- Advance the understanding of mitigation options available to these industries, including forest restoration opportunities.

**Format:** The conference took place over a period of one and a half days in April 2012. Mr. Javier Mateo Vega (ELTI) and Dr. Eldredge Bermingham (STRI) provided official Opening Remarks. Dr. Guillermo Castro, from the City of Knowledge Foundation, offered the keynote presentation addressing Panama’s environmental history and its impacts on social systems since the period before the isthmus was conquered. Next, the conference was organized in four panels; the first one introduced the economic and environmental dimensions of resource extraction and infrastructure development. The following three panels explored the global, social and regional impacts road construction, mining industry, and hydroelectric (and other) dams have on tropical forests.

On the introductory panel, Dr. Sven Wunder (Center for International Forestry Research – CIFOR) talked about wealth, macroeconomic policies and potential impacts on forests. Dr. Alfonso Alonso (Smithsonian Conservation Biology Institute) followed, presenting on the challenges and opportunities of collaborating with oil companies in conservation and restoration efforts.

During the second panel, “Roads and Tropical Forest”, Dr. William Laurance (James Cook University) addressed the impacts of roads and linear clearings on



tropical ecosystems; Ms. Elsa Mendoza (Amazon Environmental Research Institute – IPAM) discussed the impacts of paving the Inter-Oceanic Highway in the MAP region (Madre de Dios-Peru, Acre-Brazil, Pando-Bolivia) in the Southwestern Amazon; and Ms. Irene Burgues (Conservation Strategy Fund – CSF) talked about the tools that allow the incorporation of social and environmental impacts into the evaluation of infrastructure projects.

On the third panel, “Mining Industry and Tropical Forests”, Dr. Jeffrey Bury (UC Santa Cruz) started the session by discussing mineral operations, communities, and environmental change in Latin America. Dr. Vladimir Gil (Pontifical Catholic University of Peru & the Earth Institute, Columbia University) followed with a presentation on mining, territoriality, conflict, and development in the tropical Andes, with focus on Peru; Dr. Robert Stallard (US Geological Survey and the Smithsonian Tropical Research Institute – STRI) discussed mining in humid tropical landscapes using gold as a model; and Ms. Cristina Villegas (Estelle Levin, Ltd.) presented on the international social and environmental standards in industrial mining.

The fourth and final panel was titled “Hydroelectric and Other Dams and Tropical Forests” and was opened by Dr. Cecilia Tortajada (Third World Center for Water Management) who discussed global perspectives addressing dams on tropical regions. To explore some of the social and environmental implications of damming in the tropics, Mr. Jason Rainey (International Rivers) discussed whether standards and social and environmental safeguards protect rivers and sustainable livelihoods in tropical forests. Dr. Rollin Hotchkiss (Brigham Young University) discussed the design and operation of dams in tropical climates, while sociologist Francisco Herrera (University of Panama) examined some of the implications hydroelectric dams have had for people in Panama. The last presentation was given by Mr. Silvano Vergara (National Environmental Authority – ANAM) who discussed the impacts the construction of hydroelectric dams in Panama could have on biodiversity.

After each panel, there was a Q&A session that allowed participants to interact with the speakers and share questions, comments, and their own experiences with the larger audience. This conference was coordinated by Cecilia del Cid-Liccardi (ELTI) in collaboration with Dr. Jefferson Hall (PRORENA) and organized by Cecilia del Cid-Liccardi and Saskia Santamaría (ELTI).

**Outcomes and Conference Follow-up:** The conference is an annual event that addresses a relevant issue affecting forests in Panama and the region. It differs from other ELTI events in purpose and duration, and its main objective is to provide a balanced space where multiple and sometimes conflicting perspectives can be presented to our audience.



*This event was possible thanks to Arcadia Fund, whose Environmental Conservation grants support programmes that protect and enhance biodiversity, and provide field training and academic research.*