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Edmond Dounias

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Book Reviews

Tropical Forests. Regional Paths of Destruction and Regeneration in the Late Twentieth Century

Thomas K. Rudel, *Tropical Forests. Regional Paths of Destruction and Regeneration in the Late Twentieth Century*, Columbia University Press, New York, 2005, 231+xvi pages, US \$ 76.50, Hardcover, ISBN: 0-231-13194-1, US \$ 34.50, Paperback ISBN: 0-231-13195-X.

The major goal of *Tropical Forests* is to alert researchers to the danger of overgeneralisation surrounding the dramatic issue of tropical deforestation. The problems of deforestation in a particular tropical rain forest can hardly be extended to the broader region or to other forested places of the world. This book by Thomas K. Rudel is an astounding plea against the presumed idea that the conditions at play in the destruction of a tropical forest should apply to all other places in the tropical realm.

In a very well documented introduction, Rudel provides an overview of the major scientific studies dealing with tropical deforestation and points out their strengths and weaknesses. He raises the primary difficulties in evaluating this abundant literature, and he underlines the bias caused by inaccurate estimates of deforestation rates in most agency reports that are repeatedly cited. He comes to the conclusion—which arguably justifies this book—that the many studies published provide poor descriptions of regional processes and seldom serve as guidelines for efficient conservation strategies. He proposes however to use these factual sources of information as a point of departure to elaborate a more extended analysis of regional variations in deforestation processes.

The second chapter of *Tropical Forests* lays the innovative conceptual groundwork that the author has implemented for the analysis of these regional differences. Scientists who investigate individual cases sometimes resort to complex models of conjoint causation that account only for deforestation processes in the case under study. However, extrapolation of this plethora of models to other cases remains a recurrent difficulty. To get beyond the trivial juxtaposition of individual case studies that would not contribute to the analytical potential of a comparative historical approach, Rudel proposes to combine it with a method for arraying and analysing data from multiple case studies.

A major source of influence of Rudel's book is the remarkable effort by the Geosphere-Biosphere Programme to go beyond 'case by case' data. The meeting called in 2000 by H. Geist and E. Lambin has served as a basis for the

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elaboration of a deforestation process model published in 2001 and which is now referred to as a fundamental tentative meta-analysis. Whereas Geist and Lambin report regional differences in a wide-ranging discussion of the different forces that drive deforestation, Rudel defines the regions differently and focuses the analysis on the different regional combinations of driving forces. If both studies meet each other around the idea of conjoint causation, Rudel uses a singular method—a qualitative comparative approach—to identify the particular combinations of forces that drive forest cover change in places. The author seeks simplicity by focusing on specific situations and tries to explain ecologically significant events. His meta-analysis—composed of 270 case studies that were published before 2004—includes studies of forest regeneration as well as forest destruction and pays particular attention to the historical dimension, distinguishing between forest cover changes occurring during the 1970s and 1980s from those occurring during the 1990s.

The iterative process of analysis has outlined the boundaries of seven regional patterns of deforestation: Central America and the Caribbean, the Amazon Basin, West Africa, Central Africa, East Africa, South Asia, and Southeast Asia. In chapters 3 to 9, Rudel explores each of these regional patterns successively and in the tenth and last chapter of his book, he attempts a summary of the different regional patterns and synthesises the major commonalities that arise from the meta-analysis. A systematic undervaluation of environmental services provided by primary forest in market studies, a degrading impact of migration from rural to urban areas on rural enterprise and a renouncement of colonisation projects due to the growing importance of urban political agendas, are some of the main policy-relevant processes of deforestation exposed in this book, that seem to be pertinent in all regions. Rudel also convincingly points out that adaptive co-management strategies that bring indigenous in-holders together with concession holders might provide an appropriate institutional framework for a significantly improved management of these concessions.

But the impact of other large scale factors like globalisation vary significantly from region to region and generate drivers of change that accentuate the difference in forest cover between the seven regions analysed. Rudel suggests that the optimal mix of policies for advancing biodiversity conservation will vary substantially across the seven rain forest regions he analysed separately, and he advocates for a better recognition of variable human ecological conditions by policies, which would gain to build on the variability of these contextual factors that are rarely clarified in academic discussions.

Rudel's meta-analysis shares major conclusions with the study by Geist and Lambin when it identifies distinctive regional configurations of causes – cattle raising complexes in Latin America, logging-initiated processes of deforestation in Southeast Asia, and smallholder agriculture in Africa. The two studies also converge in showing that population increase has been overemphasised as a causal force of deforestation. Nevertheless, Rudel's study looks more at

historical trends in the causal configurations and the qualitative comparative analysis he uses appears to be more sensitive to sub-regional variations in causal configurations than the Geist and Lambin studies that federate cases by continent.

Tropical Forests shows clearly that new conservation policies make sense only in remote and poorly populated forest zones and it is a persuasive demonstration that criteria for assessing conservation efforts should also vary across regions. The author encourages scientists to more middle-range research on change in tropical rain forests as such research is likely to have a better chance of influencing conservation policy-making than research conducted at either global or local scales. The receptiveness of policy makers to policies derived from middle-range analyses may have a geographic basis, because the boundaries of middle-range investigations often coincide with the geographically defined domains of policy makers.

The full-bodied comparative analysis of the assembled case studies is the main achievement of this book. It appropriately contextualises descriptions of tropical forest-change and can contribute to policies relating to tropical forest conservation that fit a particular time and place. The book is further enhanced by an abundant list of nearly 400 bibliographic references—many of which refer to studies carried out by scientists working for the Center for International Forestry Research – and by a long appendix describing each of the case studies that served for the qualitative comparative analysis. This appendix is aimed at readers who may want to inquire into which case studies in particular were included in the analysis and how the causal forces they describe were finally coded for the purpose of the meta-analysis.

Readers interested in this stimulating book are strongly advised to previously consult the report published in 2001 by Helmut Geist and Eric Lambin: *What Drives Tropical Deforestation? A Meta-analysis of Proximate and Underlying Causes of Deforestation based on Sub-national Case Study Evidence*. Land Use and Cover Change (LUCC), Report #4, Louvain-la-Neuve, Belgium.

Edmond Dounias

Institut de Recherche pour le Développement (IRD)
Centre d'Écologie Fonctionnelle et Évolutive (CEFE)
1919, route de Mende
34293 Montpellier cedex 5, France
E-mail: edmond.dounias@ird.fr

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