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**THE SOCIAL ORIGINS AND IMPACT
OF DEFORESTATION
IN CENTRAL AMERICA**

by

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Preface

An important aspect of UNRISD's work on the social dynamics of deforestation in developing countries has involved carrying out case studies in Brazil, Nepal, Tanzania and Central America. This paper presents a preliminary assessment of the social origins and impact of deforestation in Central America. It is based on a wide body of secondary sources and several interviews with government officials, development and forestry specialists, and representatives of peasant and environmental groups.

The paper examines the principal processes underlying deforestation in the region. It focuses not only on the immediate "causes" of deforestation, such as the land clearance practices of graziers and shifting agriculturalists or the activities of logging companies, but also links these to broader processes of social, economic and technological change which characterize a particular style of development centred on agro-export production. In addition, it highlights the role played by government policies and land tenure systems in deforestation.

The author identifies a number of changes which have occurred in the mechanisms underlying deforestation during the 1980s and 1990s - changes associated, for example, with militarization, agrarian reform, and economic stabilization and adjustment policies.

The paper goes on to describe the way in which deforestation has affected the livelihood systems, living levels and lifestyles of different social groups and how people have responded individually and collectively when their livelihood and forest resources have been threatened. In order to examine the social impact of deforestation, the author describes three very different scenarios: the situation of peasant groups in agrarian frontier regions, traditional indigenous groups experiencing encroachment by logging companies and farmers, and the case of local populations in urban or more densely populated rural areas affected particularly by shortages of fuel wood.

The paper also refers to the experience of forest protection initiatives in the region and assesses briefly some of their strengths and weaknesses from the point of view of contributing to environmental rehabilitation and social development.

It concludes by outlining the content of a second phase of the research programme to be conducted during the first half of 1991, which will consist of several case studies in specific areas of Costa Rica, Guatemala, Honduras and Nicaragua. These studies will provide additional information on aspects associated with the social impact of deforestation processes and the role played by different types of forest protection initiatives in promoting sustainable development.

The author of this paper, Peter Utting, did his graduate work at the University of Essex. He has worked for a number of years on the problems of food security, agrarian reform and structural adjustment in Nicaragua and Third World countries. The project on the social dynamics of deforestation is being co-ordinated at UNRISD by Krishna Ghimire, with Solon Barraclough as senior consultant.

May 1991

Dharam Ghai
Director

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Introduction

Throughout the 1960s and 1970s, Central America experienced one of the highest rates of deforestation in the world. Since the mid-1960s, the extent of forest cover in the region has been reduced from approximately 60 per cent to a third of the total land area. The scale and environmental consequences of this process of natural resource destruction are dramatic in every country in the region.

Panama is considered to be one of the Latin American countries most affected by soil erosion associated with deforestation. By the mid-1980s, some 90 per cent of the total land area suffered erosion while 16 per cent was seriously affected (FAO, 1986). The future existence of the country's economic lifeline - the Panama canal - is seriously threatened by sedimentation caused by deforestation in the upland areas of the canal zone watersheds (Alvarado, 1985; Rubinoff, 1982; Wadsworth, 1982).

In Costa Rica, the percentage of total land area covered by dense forest was reduced from approximately 75 to 20 per cent between 1940 and the mid-1980s (Silliman, 1981; Chacón, García and Guier, 1990). The exploitable forest area remaining outside of national parks and reserves amounts to just a quarter of a million hectares or 5 per cent of the national territory (Hedstrom, 1990). It is estimated that the commercial supply of forest resources could be exhausted by the mid-1990s if current trends persist (Finegan and Sabogal, 1988; MIRENEM, 1990).

During the 1960s and 1970s, Nicaragua experienced the highest rate of deforestation in the region, losing each year approximately 100,000 hectares of forest. In October 1988, Hurricane Joan destroyed 560,000 hectares of dense rain forest, 17 per cent of the country's total forested area. Deforestation has resulted in major environmental damage on the Pacific side of the country, causing serious erosion, flooding and changes in micro-climate.

Between 1964 and 1986, Honduras lost a quarter of its forest area. Average annual deforestation was of the order of 80,000 hectares (SECPLAN, DESFIL and USAID, 1990). Fires in pine forest areas in 1987 and 1988 destroyed an average 95,000 hectares each year. The environmental consequences of deforestation have contributed to serious water shortages in the capital city, Tegucigalpa.

El Salvador is generally regarded as the most environmentally degraded country in continental Latin America. Only 240,000 hectares of largely degraded forest remain (Mansur, 1990) while just 3 per cent of the country's original forest cover still exists. At current rates of deforestation, the country's entire stock of forest resources will be depleted by the year 2005. Erosion affects an estimated 77 per cent of the national territory (USAID, 1985; CESTA). Every major watershed and river basin is degraded. Floods and landslides are commonplace

and sedimentation threatens the country's hydroelectric system (Hall and Faber, 1989).

In 1960, 77 per cent of Guatemala was under forest cover; by 1980, only 42 per cent remained (Bradley et al., 1990). The country currently experiences one of the highest rates of deforestation in the region with some estimates putting the annual loss of forest area as high as 90,000 hectares (Bradley et al., 1990). An estimated one third of Guatemala's land mass is seriously eroded or degraded.

The economic and social crisis which has affected much of the region throughout the 1980s is intimately related to this process of environmental destruction. This paper presents a preliminary analysis of the social origins and impact of deforestation in Central America.¹ It is based on research that was conducted in Costa Rica, El Salvador, Guatemala, Honduras, Nicaragua and Panama, during the latter half of 1990. The information derives from a considerable body of secondary sources as well as interviews with government officials, development and forestry specialists, academics and representatives of peasant, indigenous and ecology groups.

Part I examines the way in which "modernization" processes and "survival strategies" have contributed to extensive deforestation throughout this century. In addition, it considers the way in which contemporary phenomena such as military conflict, agrarian reform and economic stabilization policies have affected the use and abuse of forest resources. This section also examines some of the crucial institutional and policy determinants of deforestation, notably, agrarian structures, land tenure systems as well as government policies and legislation concerned with agrarian development and land use.

Part II analyses the social impact of deforestation, briefly examining processes of social differentiation and changes in living levels and livelihood of various social groups. Also treated is the question of how certain groups affected by deforestation have responded collectively when their livelihood and interests are threatened.

Part III looks at some of the initiatives that have been taken in the area of forest protection and comments on the strengths and weaknesses of certain programmes, policies and legislation.

A final section briefly outlines the nature of several local level studies being sponsored by UNRISD in the region. The findings of these studies will be presented in a more comprehensive report on the social dynamics of deforestation and forest protection initiatives to be finalized during the second half of 1991.

1. The author would like to thank Solon Barraclough and Krishna Ghimire for their comments on an earlier draft. This paper concludes the first phase of an ongoing research project on the Social Dynamics of Deforestation in Central America. Several of the issues addressed here will be examined in more depth in studies that will be conducted during 1991. As such, the ideas and analysis presented here provide a preliminary assessment of the situation in the region. The author would welcome any comments and criticisms which readers might have.

I. Deforestation in Central America

FAO data on land use in Central America indicate that the area under forest and woodland decreased from 56 per cent of the total land area during the first half of the 1960s to 35 per cent in 1986. Estimates of the current extent of forest cover and rates of deforestation are presented below. These are derived from data obtained at the country level and generally refer to both closed and degraded forest cover.

Central America: Estimates of Forest Cover			
Country	Area (000 hectares)	Percentage of total land area	Annual deforestation (hectares)
Panama	3,147 (1)	41	50,000 (7)
Costa Rica	1,475 (2)	29	50,000 (8)
Nicaragua	4,140 (3)	30	70,000 (9)
Honduras	4,731 (4)	42	80,000 (10)
El Salvador	240 (5)	12	14,000 (11)
Guatemala	3,762 (6)	35	90,000 (12)
TOTAL	17,495	36	354,000

(1) Estimate for 1990 based on 1987 figure of 3,305,300 hectares cited in INRENARE, 1990.

(2) Estimate for 1989 cited in MIRENEM, 1990.

(3) Refers to closed and degraded forest (MAG, 1990).

(4) Estimate for 1990 based on COHDEFOR (SECPLAN, DESFIL and USAID, 1990).

(5) Mansur, 1990. Figures refer to closed and degraded forest.

(6) Government of Guatemala, 1990.

(7) INRENARE, 1990.

(8) MIRENEM, 1990.

(9) MAG, 1990.

(10) SECPLAN, DESFIL and USAID, 1990.

(11) Mansur, 1990.

(12) Bradley et al., 1990.

While most authors generally agree on which agents are directly responsible for cutting down trees, they often disagree in their assessment of the appropriateness of land use patterns which

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