Worldwide 93.918

DESFIL
Development Strategies for Fragile Lands

Community-Based Natural Resources Management: An Annotated Bibliography

Compiled and written by Ann Hamilton

Submitted to R&D/EID/RAD

Development Strategies for Fragile Lands (DESFIL) Project
Chemonics International Consulting Divisiion
2000 M Street, N.W. Suite 200
Washington, D.C. 20036

Project No. 936-5438
Contract No. DHR-5438-C-00-1090-00

March 1993

TABLE OF CONTENTS

COMMON PROPERTY MANAGEMENT

INDIGENOUS PEOPLES

EXTRACTIVE RESERVES

PROTECTED AREA MANAGEMENT

GENDER

DEFORESTATION/DESERTIFICATION

COMMUNITY-BASED NATURAL RESOURCES MANAGEMENT:

AN ANNOTATED BIBLIOGRAPHY

COMMON PROPERTY MANAGEMENT

Berkes, F., D. Feeny, B.J. McCay and J.M. Acheson
The Benefits of the Commons.
Journal article from *Nature*, Vol. 340.
July 13, 1989, pp. 91-93.

Key words: Communal property/ /Property rights/ /Canada/ /United States/ /Thailand/ /Nepal

The following article begins by stating that it has become a truism that resources held in common are vulnerable to over-exploitation. Garrett Hardin popularized this dilemma--calling it the "tragedy of the commons"--by the use of a metaphorical village common in which each herdsman is "locked into a system which compels him to increase his herd without limit." Hardin and others have subsequently pointed to privatization of common resources as another solution consistent with the analysis of many resource economists. The authors argue, instead, that research carried out in the 21 years since Hardin's article often leads to conclusions that challenge this conventional wisdom. Many case studies show that success can be achieved in ways other than privatization or government control.

The report goes on to summarize selected case studies which show the workings of communal-property systems not recognized in Hardin's model, as well as the limitations to the use of state governance in some situations. The first case discussed concerns wildlife hunting territories in James Bay, Quebec. Beaver hunters in this subarctic area have traditionally used resources communally both for food and for commerce (fur trading). A community-based hunting territory system, with senior hunters and their families acting as stewards of specific territories, at present ensures sustainable use. The beaver resource in James Bay, however, was not always used sustainably. In the 1920s, a large influx of non-native trappers followed and Amerindian communities lost control over their territories. All trappers, including natives, contributed to a "tragedy of the commons." The second and third cases deal with lobster and fisheries management on the east coast of the United States, demonstrating that communal territories exist even in societies that subscribe to the ideal of freedom in the commons. Forests in Thailand comprise the fourth case, in which the authors point out that state ownership of forests fails to provide consistent enforcement, and it also serves to deny users the authority to manage local forests.

These examples--hunters in James Bay, lobsterman in Maine, trawlermen in New York Bight area, and other examples--communal forest users in Nepal and irrigation water users in South India--show that groups are able to exclude other potential users and regulate their own joint use. They are therefore able to reap the benefit of their own restraint.

The authors propose that successful approaches to the commons dilemma are found in complementary and compatible relationships between the resource, the technology for its exploitation, property-rights regimes and the larger set of institutional arrangements. They also suggest that combinations of property-rights regimes may in many cases work better than any single regime. In sum, sustainable common-property resource management is not intrinsically associated with any particular property-rights regime. Successes and failures are found in private, state, and communal-property systems. Recent research highlights the potential viability and continued relevance of communal-property regimes, nested systems, and co-management.

Bromley, Daniel W. and Michael M. Cernea.
The Management of Common Property Natural Resources: Some Conceptual and Operational Fallacies.
Report from the World Bank, Washington, D.C.
1989, 66 p.
ISBN 0-8213-1249-9
Paper copy cost: $7.95

Key words: Natural resources management/ /Property rights/ /Communal resources

In their review of common property management, Bromley and Cernea argue that the term "common property" has been largely misunderstood and falsely interpreted for the past two to three decades. Common property regimes are not the free-for-all that they have been described to be, but are structured ownership arrangements within which management rules are developed, group size is known and enforced, incentives exist for co-owners to follow the accepted institutional arrangement, and sanctions work to ensure compliance.

The authors also state that resource degradation in developing countries, while incorrectly attributed to "common property systems" intrinsically, actually originates in the dissolution of local-level institutional arrangements whose very purpose was to give rise to resource use patterns that were sustainable. When local-level institutional arrangements were undermined or destroyed, the common property regimes gradually converted into open access in which the rule of capture drove each to get as much as possible before others did. While this has been referred to as the "tragedy of the commons," it is, in reality, the "tragedy of open access."

The report reflects the view that development assistance will succeed only if programs and projects become more concerned with the people using natural resources, rather than primarily preoccupied with the particular commodities around which projects have often been organized.

The authors further state that natural resource projects that do not actively incorporate the local users will ultimately fail. Interventions aiming at sustainable agricultural development must explicitly address the social arrangements among people as they interact with each other and with the natural resource base, and help build up forms of social organization conducive to sustainable and productive use of natural resources.

Finally, an essential ingredient in program and project formulation is the system of incentives and sanctions for influencing individual behaviors of those who live in the local area, and who depend upon the natural resource in question. [Author abstract, modified]

Bruce, John W. and Louise Fortmann.
Property and Forestry.
Essay from *Emerging Issues in Forest Policy*, ed. by Peter N. Nemetz, UBC Press, Vancouver, British Columbia, 1992 (Chapter 20, pp. 471-496).
ISBN 0-7748-0401-7 (hardcover)
ISBN 0-7748-0419-x (paperback)

Key words: Forestry/ /Community Forestry/ /Land tenure/ /Forest policy/ /Gender/ /Household analysis

This article explores the relationship between afforestation/deforestation and property rights in the three tenurial situations paralleling the three conventional wisdoms. Each conventional wisdom relates to a basic tenure type: the holding (conventional wisdom: the need for security of tenure), the commons (conventional wisdom: the "tragedy of the commons"), and the reserve (conventional wisdom: the need to exclude local users).

Regarding the "security of tenure" model, the authors state that those familiar only with Western property law often misapply the model by assuming that security of trees is necessarily a function of tenure in the land on which the trees stand. The authors present an important discussion on the role of gender in relation to this model. They argue that the model is misused when it is assumed that a household's holding is under a single management, and that the security of tenure of the household head is the only relevant security of tenure. In household farming systems in developing countries, it is common for a wife or wives to have their own plots which they manage with considerable autonomy. They also point out, however, that a wife's security of tenure may depend in part upon her husband's security of tenure but be subject to additional limitations; a husband may be entitled to shift his plots between wives as he chooses. Insecurity of access for women can also result from life cycle changes (marriage, childbirth, divorce, widowhood), changes in national policies such as land registration, in technology, and in the value of tree products. The authors emphasize that tenure analysis should be adjusted to treat the rights of women managers and users of land and trees as a discrete and explicit category.

In the case of the commons, the conventional wisdom is the "tragedy of the commons," which suggests that resources held in common will inevitably be degraded due to the tendency to maximize individual benefits. Bruce and Fortmann hold that forest commons do not involve open access, but are, instead, the common property of a community which can exclude outsiders and regulate the use of the commons by its members. The authors emphasize that sound planning for community forestry management should involve careful consideration of the workings of customary and local resource management institutions.

The forest reserve is the manifestation of a recurrent theme of colonial forest policy: private and communal tenure of forests pose a threat to their conservation. The authors points out that the state is sometimes an inefficient forest manager and that "soft states" may utterly fail to protect forests. Community management of resources, with ownership vested in communities or on contract from the state, can to some extent replace direct state management.

Finally, the authors stress that the importance of tenure will vary dramatically from case to case, and the elimination of tenure constraints will accomplish little if other incentive elements are not present. Tenure is not the "silver bullet," but because it is the factor most often neglected in addressing forestry issues, it requires immediate and careful attention in the development of forestry policy and programs.

Cabarle, Bruce J.
Community Forestry and the Social Ecology of Development.
Article from *Grassroots Development* 15/3.
1991, 7 p.

Key words: Community forestry/ /Social ecology/ /Land tenure/ /Natural resources management/ /Bolivia/ /Ecuador/ /Peru/ /Mexico

Cabarle's article describes the revival and expansion of community forestry and urges informed participation by local user groups to diagnose problems, propose solutions, and form alliances with outside interests to sustainably manage forest resources.

The author states that community forestry gained acceptance in the mid-1970s as one component of integrated rural development. It is often used interchangeably, and often incorrectly, with "social forestry" or "farm forestry." More recently in Latin America, "extractive reserves" have emerged as a form of community forestry. Cabarle emphasizes that most social forestry and farm forestry activities occur outside of forest zones, within the agricultural landscape, and offer less local control. Community-based management systems that occur in or around forests often afford greater opportunities for local control because of their remoteness from centralized state bureaucracies.

National parks to preserve fragile ecosystems often are understaffed or exist only on paper, and restrict the access of forest-dependent people. The author further maintains that exclusive timber concessions over large tracts by private industrial producers have dwarfed public regulatory capacity, leading to clearcutting and other short-sighted practices that have degraded forests.

Cabarle indicates that recent surveys have identified a number of promising initiatives in natural forest management that are community-based and controlled. The advantages of community control include better policing and husbanding of local forest resources and more equitable distribution of benefits. Cabarle warns, however, that community forestry is not a panacea, as not all communities are equipped politically, financially, and technically to manage expansive tracts. The report describes three interrelated issues which must be addressed if community forestry is to have an impact: (1) land and resource tenure; (2) the development of organizational cohesion and management skills; and (3) the blending of local knowledge with technical assistance to promote sustainable production. Specific cases in Bolivia, Ecuador, Peru, and Mexico are cited in the discussion of the above issues.

In sum, the report proposes that community forestry will benefit from organization building and networking that enables local peoples to define and direct income-generating activities to meet their needs. International NGOs and donor agencies can lend critical support to ensure adequate political space for local groups to function. Special effort should also be made to transfer control of resources to communities, including the recovery, demarcation, and land titling of ancestral claims. Conventional concessions to private interest groups to exploit timber and other natural resources should be avoided where possibilities exist for community management, unless they have the consent of local communities and safeguards in place.

Dorner, Peter.
Latin American Land Reforms In Theory and Practice.
The University of Wisconsin Press, Madison, Wisconsin.
Full-length book.
ISBN 0-299-13160-2 (hardback)
ISBN 0-299-13164-5 (paperback)
1992, 108 p.

Key words: Land reform/ /Agricultural policy/ /Agricultural economics/ /Indigenous populations/ /Peasant organizations

Published in 1992, Dorner's book reviews the political, social, economic, and institutional aspects and the outcomes of land reform attempted in Latin America over the past thirty years. Chapter 1 provides an overview of the politics of reform, including the peasants' role in the evolution of political systems. Land reform and the U.S. policy dilemma are also reviewed in this section. In his second chapter, Dorner summarizes key ideological, theoretical, and socioeconomic ideas and perspectives, as well as arguments and counterarguments about land reform that prevailed going into the 1960s, in addition to those that emerged in the following several decades. Chapter 3 gives a brief summary of the land reforms implemented in Latin America over the past three decades. Dorner also provides information on peasant organizations and production cooperatives in this chapter. In Chapter 4, he reviews demographic and economic trends in Latin America over the past several decades. Chapter 5 discusses measures related to land reform: land registration and titling, taxation, land transfer, and financing mechanisms. Finally, Chapter 6 examines forms of support which outside agencies might supply either to land form per se or to a variety of other measures directed at restructuring land markets and rural institutions.

Dorner argues in his book that the failures of Latin American land reforms are due to lack of political will and commitment exacerbated by inadequate capital resources. Emphasizing the growing complexity of Latin American economies, he demonstrates that solutions successful in one country may fail in another. He concludes that aid and political pressure from the international community can play only a peripheral role. Recognizing that change must come from within, Latin American countries must develop multifaceted approaches to meet objectives based on their own individual experiences.

Lawry, Steven W.
Tenure Policy Toward Common Property Natural Resources.
Land Tenure Center, University of Wisconsin/Madison.
LTC Paper 134.
July 1989, 22 p.

Key words: Tenure/ /Common property natural resources/ /Agricultural policy/ /Local users/ /Sub-Saharan Africa

Lawry's paper considers problems in improving local-level management of common property natural resources in sub-Saharan Africa. The paper reviews some of the major theoretical perspectives on the management of resources used, including the "tragedy of the commons," which suggests that communal resource use inevitably leads to overuse and degradation, and various "common property management" perspectives, which argue that collective use is not necessarily inconsistent with sustainable production. Those who subscribe to the latter view attribute the failure of local management to obtrusive state actions which have undercut the legal authority and political legitimacy of local institutions. This often leads to the recommendation that authority over resources be devolved to local authorities or user groups, which, it is argued, are better placed to regulate local resource use.

The paper takes the position that only in rare cases would local institutions assert effective control over communal resources, even if authority is devolved. Economic incentives for individual participation in common property management arrangements are often weak. Incentives are growing weaker as sources of rural income and employment diversify and as rural households become increasingly reliant upon non-local income sources. Household economic autonomy and income diversification contribute to the breakdown of social relationships needed to sanction collective controls over individual behavior. Patron-client relationships and traditional authorities are losing their force. In the case of some resources, such as low productivity grazing land, direct group regulation of individual management practices is in many respects less efficient than arrangements which permit users to exercise maximum discretion over use and management decisions.

Lawry emphasizes that effective management will not emerge by simply devolving authority to weak local institutions. At the same time, direct state regulation is expensive, generally ineffective, and often unfair to resource users. Limited state resources are more usefully applied to extension and technical assistance programs. In the short term, policies are needed which address the respective weaknesses of states and communities in managing communal resources. Recommendations are made for appropriate state and community roles in "co-managing" natural resources. Long-term policies should be based upon an assessment of incentives for individual participation in communal management activities and upon a thorough review of the costs and benefits--social, economic and political--of alternative tenure arrangements. [Author abstract, modified]

Murphree, Marshall W.
Communities as Institutions for Resource Management.
Center for Applied Social Sciences (CASS), University of Zimbabwe, Harare.
(Paper initially presented to the National Conference on Environment and Development, Maputo, Mozambique, October 7-11, 1991)
October 1991, 21 p.

Key words: Common property natural resources management/ /Institution building/ /Land tenure/ /Indigenous peoples/ /Community participation/ /Wildlife management/ /Zimbabwe

Murphree, in his review of community-based resource management, examines the control of resource management, communal management regimes, and institutional building. He uses the example of Zimbabwe and its wildlife policy and practice in communal lands to demonstrate his conclusions.

Murphree states that one of the central tragedies in the history of Southern African land and natural resource management is that the debate on tenure has largely been restricted to a discussion of the relative merits of state or private property regimes. Policy has assumed two options, privatization or nationalization, thus ignoring the further option of a communal property regime. He goes on to stress that both private and state natural resource management regimes have their strengths and may be appropriate for given resources in given contexts. But both have their weaknesses, particularly if they are under-funded, large-scale, and managerially distanced from the resources in question. In such circumstances, the state, or the private owner, purports to be the manager but *de facto* use and management are in the hands of others--the people living with the resources concerned. Not only is this local management resource marginalized, in Murphree's view, but it is also antagonized. As an example, Murphree cites the case of Zimbabwe, where by 1961 approximately 50 percent of the total land surface had been alienated into private hands. The rest was state land--parks, wildlife and forestry lands or communal lands (37 percent). In the communal lands, the ability of traditional structures was seriously eroded by its tenure status. Thus the communal property-rights regime conditions were removed.

Murphree believes that this policy myopia, which sees only privatization or nationalization tenure options, has continued in the post-1980 independence era. The tragedy of this situation lies in two dimensions, he argues. Firstly, neither option will viably address those areas where most of the rural populations live and which are under the greatest environmental pressure. Secondly, focus on the two options ignores the potential for cost-effective collective local management enforced by informal peer pressure and drawing on evolved and detailed knowledge of local ecological dynamics. The author stresses the serious consideration of this option requires far more than decentralized administration or current and trendy plans to "involve" local people in planning and to encourage their "participation" in project implementation. What is required is the establishment of communal property regimes by defined groups in defined areas and with rights of inclusion and exclusion. Such groups should have proprietorship of the natural resources concerned. The report provides more detailed information on the management of natural resources and proprietorship.

The author uses the Zimbabwean experience in wildlife utilization in order to illustrate the principles he describes on resource management. The CAMPFIRE (Communal Areas Management Programme for Indigenous Resources) Programme is described to illustrate successful implementation at local levels. Murphree also discusses two success stories of communities in Zimbabwe (the Kanyurira and Chikwarakwara communities) which have developed as "institutions for resource management." He states that for too long "community development" has been conceptualized in Africa as an extension to local levels of central government institutions. The examples of the above communities are examples of something different--mutually reinforcing resource management and local institutional development.

In his concluding observations, Murphree emphasizes a number of points. Firstly, for most of the rural populations of Southern Africa, the communal context is the context of life and will be so in the future. The communal contexts created by colonialism are not communal property regimes since they have been stripped of the necessary entitlements. The evidence is that communities can become effective institutions for sustainable resource management, but only if they are granted genuine proprietorship (i.e., the right to use resources, determine the mode of usage, benefit fully from their use, and determine the distribution of such benefits and rules of access). Murphree emphasizes a major assertion of his paper, which is that "people seek to manage the environment when the benefits of management are perceived to exceed its costs." Chances of success are enhanced when a communal property resource of high financial value is available and project focus is initially in the sustainable exploitation of that resource. In Zimbabwe, this resource has been wildlife, a resource of high and escalating value. Finally, Murphree's paper argues that communities can be effective institutions for resource management, and that management of common property resources can act as a powerful catalyst for communal institutional development.

Peet, John and Katherine.
With People's Wisdom: Community-Based Perspectives on Sustainable Development.
Dept. of Chemical and Process Engineering, University of Canterbury, Otautahi-Christchurch, Aotearoa-New Zealand.
New Zealand Workers' Educational Association, Inc.
Report from The Ecological Economics of Sustainability Conference, The World Bank, Washington, D.C. (May 21-23, 1990)
1990, 17 p.

Key words: Community participation/ /Indigenous peoples/ /Environment/ /Legal reform/ /Policy/ /Adult education/ /New Zealand

This paper reacts to the New Zealand Government's 1987 review of laws governing land, air, water, and Crown-owned minerals, with particular emphasis on the Maori perspective on the environment. (The Maori, a Polynesian people, are indigenous to Aotearoa-New Zealand). The authors state that they are not criticizing the aims of the public discussion over the governmental review (claimed to be the most extensive consultation process ever undergone in New Zealand law reform). What they are critical of, however, is that the debate was carried out almost entirely among members of a relatively small elite (including environmentalists) and that it was, as far as the community as a whole was concerned, not an informed debate. The principal aim of the paper is thus to suggest how it could have been possible to tap into a vast resource of personal and collective knowledge, and thereby reflect the understanding of a much wider range of people.

After drawing attention to the Treaty of Waitangi, which provides the base for relationships between the Maori and subsequent settlers, the authors review Maori statements about their attitudes toward the environment.

The authors present an interesting discussion of the Maori and their views from an anthropological perspective. The central concept underlying the Maori relationship with the natural environment is *whanaungatanga*, or being related to the natural world. The concept of *mauri*, or the physical life principle is also key to understanding the Maori outlook. Preservation of the *mauri* was all important. In everyday life, use was made of the environment, so there was constant risk of limiting or affecting the *mauri*. To guard against this, a set of rules governing conduct and behavior consistent with their spiritual tribal (ancestral) beliefs had to be followed. The term *taonga* includes values that are peculiar to Maori belief and in many respects are outside a conventional Western economic perspective. *Taonga* embraces the concept of a resource, and refers not just to the usefulness of natural resources to humankind, but ascribes value to the environment because it exists for its own sake.

The section which follows discusses the role of government in environmental-social policy. The criticisms of the authors are directed at the elevation of the "market" ideology to a position where it excludes the collective and spiritual dimensions of people's lives. This process "inverts the participatory democratic process, and enables the ideological tail to wag the democratic dog."

In their discussion of ethical issues, the authors emphasize that the social structures of the

Maori are built upon a network of shared responsibilities and group (tribal or sub-tribal) ownership of resources such as land. They owe little to behavior patterns such as individual ownership of land.

The final sections of the paper review community-based learning initiatives, social tools for public participation, and adult education models. The report goes on to review a number of working models of adult education, including examples from Danish adult education, the Highlander Model of Adult Education in Tennessee and the Sarvodaya Shramadaya Movement of Sri Lanka.

Perl, Matthew A., Michael J. Kiernan, Dennis McCaffrey, Robert J. Buschbacher and Garo J. Batmanian.
Views From the Forest: Natural Forest Management Initiatives in Latin America.
Report from the Tropical Forestry Program, World Wildlife Fund, Washington, D.C.
March 1991, 27 p.

Key words: Natural forest management/ /Forest policy/ /Land use/ /Land tenure/ /Local participation/ /Community natural resources management/ /Indigenous peoples/ /Commercial forestry/ /Central and Latin America

This report, based on a workshop held in December of 1990, assesses the experience of 14 Natural Forest Management (NFM) initiatives throughout Central and Latin America. Section I provides a background into the forest situation in Latin America, discusses the World Wildlife Fund's perspective, and reviews pilot projects in NFM. Section II gives a detailed overview of various project profiles in the following countries: Mexico, Costa Rica, Colombia, Suriname, Brazil, Peru, and Bolivia. Each profile reviews the location, project initiation date, forest and social settings, institutional arrangements, sources of project funding, as well as a short overview and additional comments. Sections III and IV of the report focus on the actual workshop structure and results. The appendices include a project questionnaire and a list of workshop participants.

The report emphasizes that implementing NFM requires not only the technical capability to conduct activities such as classifying land for appropriate uses and determining the composition and distribution of species, but also requires clear links to the social and economic conditions of local inhabitants. Likewise, the commercialization of products must also be closely integrated with the technical and social components of the project.

NFM projects take place under a variety of social and organizational arrangements that include corporate forest industries, government-run forest management operations on national forests, local cooperatives or communally-managed forests, and forest management involving individual landowners.

The report also emphasizes that a long-term commitment to the maintenance of the forest is another central requirement for NFM regardless of the type of organizational structure under which a forest management project occurs. Obtaining security over property rights, either through legal title or acceptance of customary tenancy arrangements, is therefore essential for those who undertake forest management.

The general undervaluation of forests and low stumpage value of timber from natural forests in Latin America must also be addressed in order to establish an adequate investment climate for NFM. Developed countries can help by making incentives for NFM available through development assistance funding and in the form of debt reduction and preferential markets tied to the management of natural forests.

The authors state that the workshop reinforced the belief that efforts to develop appropriate NFM practices in Latin America have already made significant progress. However, several basic changes at the policy and project level will need to take place in order to stimulate more widespread

use of NFM. They include: (1) policy reforms to correct the devaluation of forest resources; (2) consistent, long-term technical and financial assistance; (3) further documentation on the economic and financial results of NFM projects as well as their conservation or environmental benefits; and (4) recognition of the broad range of field approaches currently being made to implement sustainable forest management. [Author abstract, modified]

Rodriguez, Silvia, Alberto Vargas, Serge Dedina and David Stanfield.
An Annotated Bibliography on Community Management of Forest Resources in Latin America.
Annotated bibliography/report.
Land Tenure Center, University of Wisconsin, Madison.
March 1991, 60 p.

Key words: Community-based management/ /Community forest management/ /Central and Latin America/ /Traditional systems/ /Indigenous peoples/ /Gender

This report contains an annotated bibliography of literature dealing with community management of forest resources in Latin America, an analysis of the major findings of that literature, and a set of issues which can be used as a framework for future research.

In Latin America, there are two major types of community management of forests: traditional, and externally linked or commercial. Traditional management of forest resources is based on historically tested techniques and is still common. Two examples presented to illustrate characteristics of traditional management systems are swidden-fallow management by Amazonian groups and an agroforestry system in Mexico.

The commercial model of forest management involves the harvesting of natural forests and the establishment of a few industrial plantations. State agencies are often involved in leasing or managing commercial concessions for the harvest of forest resources.

The authors state that in recent years a new approach for forest resource management has aroused interest in the region. This approach begins with the importance of including local communities in the direct management and control of the forest resources. Several examples illustrate the development and difficulties of this approach, including forest management programs in Mexico, reforestation schemes in Guatemala, cooperative sawmills in Peru and Bolivia, extractive reserves in Brazil, and resin tappers in Honduras. Most of these experiences are still in their early stages and have not been evaluated systematically.

The authors conclude that ten issues are especially important when considering community management of forest resources: 1) the techniques adopted for encouraging the convergence of interests to facilitate communal management; 2) the conditions for empowering local groups; 3) the balance of relations between the state and the community; 4) the links between the community and the sponsoring agencies; 5) the appropriate sources of technical and organizational knowledge; 6) the financial and social incentives favoring communal management; 7) the attitudes of technicians and extensionists regarding the culture and social histories of local communities; 8) the provision of appropriate support systems; 9) the decisions involving long-term investment; and 10) the definition of gender rights and responsibilities. [Author abstract, modified]

Stanley, Denise L.
Communal Forest Management: The Honduran Resin Tappers.
Case study prepared for the Inter-American Foundation, Arlington, Virginia.
University of Wisconsin/Madison, Dept. of Agricultural Economics.
1990, 9 p.

Key words: Community management/ /Forestry/ /Cooperatives/ /Honduras/ /Land tenure

Stanley analyzes the Honduran resin-tapping movement through a two-month-long field study to assess the sustainability of community-based management of forest resources. The report provides an overview of the Honduran Federation of Agroforestry Cooperatives (Federación de Cooperativas Agroforestales, FEHCAFOR), including an organizational history and an analysis of the ecological rationale of resin tapping. The author also conducts an overall economic and social feasibility analysis of cooperatives through in-depth case studies of a highly successful cooperative (the Villa Santa cooperative) and a largely unsuccessful one (the Cooperativa San Juan de Ojojona). Stanley suggests that the main constraints on resin tapper cooperatives are: insecure legal tenure to resin as well as other forest resources, the difficulties encountered in adopting new resin tapping technologies, and uncertain government actions concerning the state forestry corporation and macroeconomic resource policies. [Abstract from "An Annotated Bibliography on Community Management of Forest Resources in Latin America," by Silvia Rodriguez, et al.]

INDIGENOUS PEOPLES

Amazonia Without Myths.
Report from the Commission on Development and Environment for Amazonia.
Inter-American Development Bank, U.N. Development Programme and
Amazon Cooperation Treaty.
1992, 99 p. (includes 7-page bibliography)

Key words: Amazon/ /Indigenous peoples/ /Natural resources management/ /Conservation/ /Biodiversity/ /Ecology

This report explores a variety of myths which have endured regarding the Amazon, examines legislation and institutions for Amazonia, and urges global cooperation for the region. The report further reviews environmental and social processes and impacts, including land and property, impacts of farming, forestry, mining, violence, and lack of security. The remaining sections discuss strategies for sustainable development and biodiversity and propose a new Amazonian ethic.

Section I seeks to dispel a number of myths about the Amazon: (1) the homogeneity of the Amazon; (2) the myth of the empty Amazon; (3) the myth of the riches or, by the same token, the poverty of the Amazon; (4) the myth that the Amazon is the "lung of the earth"; (5) the myth of the indigenous peoples as "an obstacle to development"; (6) the myth of the Amazon as a panacea for national problems; and (7) the myth of the "internationalization of the Amazon."

The report analyzes the great heterogeneity of climates, geological formations, biodiversity, and populations which are present in the Amazon. In addition to narrative form, the document includes a number of useful tables, charts, and maps to illustrate the great diversity of the region, both in terms of natural resources and indigenous populations.

In presenting recommendations for a new Amazonian ethic, the report stresses that principles should aim at the consideration of the needs of the region's inhabitants, compensation for environmental services received, equitable distribution of land, respect for human and ecological rights, repatriation of information, reciprocity with respect to technology in exchange for the region's genetic legacy, and more information from the developed countries.

Among the key factors in assessing the needs of the region's inhabitants are the rights of the Indian and other peoples of the forest to the resources on which their economy is based, including the establishment of territorial options for management of extractive reserves. Top priority should be assigned to control of exaggerated market demand for certain products.

The report stresses that governments in the basin must make a major effort to institute sustainable development. The economic and social problems of the peripheral areas must be solved in situ rather than transferred to Amazonia. Emphasis should also be placed on the area of the Amazon itself where there has already been colonization and intervention, using appropriate technologies to boost production and revive deteriorated resources.

Lastly, the Commission urges that the grave injustices in the peripheral areas must be addressed. The report maintains that some politicians have preferred to ease social pressures by opening up the Amazon to mass colonization rather than giving consideration to the possibilities of sustainable development.

Clay, Jason W.
Indigenous Peoples and Tropical Forests: Models of Land Use and Management from Latin America.
Cultural Survival, Cambridge, Massachusetts.
Cultural Survival Report 27.
ISBN 0-939521-38-5 (hardback - cost: $19.95).
ISBN 0-939521-32-6 (paperback - cost: $8.00).
1988, 116 p. (includes 37-page bibliography)

Key words: Indigenous peoples/ /Tropical rain forests/ /Land use/ /Land tenure/ /Ecology/ /Extractive reserves/ /Conservation/ /Latin America/ /Brazil/ /Colombia/ /Venezuela/ /Peru/ /Mexico

In his book, Clay summarizes the research undertaken to date on activities used by indigenous peoples in Latin America to sustain their populations and the environment: gathering forest products, hunting, aquaculture, swidden agriculture, permanent agriculture, and upgrading of the natural resource base. The books examines indigenous systems in Brazil, Colombia, Venezuela, Peru, Mexico, Panama (including the Kuna Indians), and Ecuador (including the Awa-Coaiquer Indian population which occupies the Colombian-Ecuadorian border).

Clay concludes that indigenous land-use methods in the rain forests of Latin America are based on the view that the environment is the source of life for future generations and should therefore not be pillaged for short-term gain and long-term loss. The author cites a number of guidelines for development in tropical rain forest areas: (1) local agriculture must be adapted to the specific ecological zones and variations of flora, fauna and soils; (2) agricultural development in rain forests should utilize more of the indigenous cultigens that are already adapted to the environment; (3) research must begin to show the relevance of ecological balance to each individual living in a region so that all will have a stake in conservation. Clay stresses the need for further research regarding indigenous models of land use which provide for the present needs of traditional inhabitants without destroying the resource base. Related to this is the need for research on to what extent indigenous models of resource management can be transferred into current technology, and how willing officials and planners might be to accept lower production from rain forest areas in return for the maintenance of tropical rain forest ecosystems.

Cox, Paul Alan and Thomas Elmquist.
Indigenous Control of Tropical Rain Forest Reserves: An Alternative Strategy for Conservation.
Article from *Ambio* magazine 20(7).
November 1991, 5 p.

Key words: Rain forest/ /Preserves/ /Indigenous peoples/ /Parks management/ /Samoa

In their article, Cox and Elmquist discuss three significant rain forest preserves which were created in Samoa using alternative strategies under indigenous control: (1) A U.S. National Park in American Samoa which involves the long-term lease of customary lands with local chiefs forming an advisory board on park policy; (2) in the Falealupo peninsula in Western Samoa, a covenant was established between the villagers who pledged to preserve and manage a large rain forest, and private donors who provided funds for the construction of an elementary school; (3) in Tafua, Western Samoa, a covenant was established between the village, which vowed to preserve and manage the forest, and the Swedish Society for Nature Conservation (SNF) which provided funds for an elementary school and public works.

Cox and Elmquist begin by discussing the typical existing strategies for creating rain forests and their advantages and disadvantages. Most are based largely on private or governmental land ownership, and have been adapted from principles used in national park creation in North America and Europe. The first strategy is to declare government or crown land a National Park, either by legislative action or by executive order.

A second typical strategy to create rain forest reserves involves purchase of land from private owners. A third, and more recent strategy has been proposed, based on "debt swaps." A fourth potential strategy is for the government to use its power to obtain land for reserves.

The authors discuss as an alternative strategy the creation of tropical reserves which explicitly recognize the needs and concerns of indigenous peoples. The first case cited as an example is the American Samoa National Park. Under this scheme, villages will lease their lands for 50 years to the U.S. National Park Service for development of a national park subject to certain constraints. For example, the National Park Service is forbidden to build roads into the forests, to disturb graves or other important cultural sites, or to allow construction of hotels on leasehold land. In addition, the villagers retain rights to forage for forest plants for medicine and other culture purposes, to construct small plantations in specified areas, and to continue non-commercial reef foraging. In addition, the National Park Service has pledged to manage the park in close consultation with the traditional chiefs and leaders of Samoa.

The article also reviews two additional examples of alternative strategies for rain forest reserves: the Falealupo Rain Forest Reserve and the Tafua Biological Reserve, which have both proven to be successful.

Although the authors support the idea of leasehold reserves, they indicate that there are several disadvantages. Infrastructure developments may not be permanent, since the reserve status of the land may change at expiration of the leasehold. Leasehold reserves, which by definition are temporary in

nature, conflict with Western conservation concepts which have traditionally sought the establishment of permanent reserves.

Despite the above precautions, the authors believe that the cases in Samoa demonstrate that leasing land for tropical rain forest preservation has several advantages. First, leases explicitly recognize indigenous land rights. Secondly, indigenous values can be considered in leasehold, and thus traditional foraging or even hunting activities can be permitted. Thirdly, the affinity of the people to their land is not broken; they still own title to the land and feel an attachment to it.

Davis, Shelton H., with the collaboration of L.E. Aranda, P. Bennagen, D. Irvine, G. Lochgan, T. Macdonald, Jr. and K. Matampash.
Indigenous Views of Land and the Environment: A Report for the World Development Report 1992.
Report from the World Bank, Washington, DC.
November 1991, 90 p.

Key words: Indigenous populations/ /Community participation/ /Ecuador/ /Kenya/ /Philippines

In preparation for the 1992 World Development Report, a number of individuals affiliated with NGOs who work with indigenous peoples were asked to provide report on indigenous peoples' views of land and the environment. Specifically, the reports sought to describe the environmental situation of three different indigenous groups: the Quichua-speaking Indians in the rainforests of eastern Ecuador; the Maasai and Samburu nomadic pastoralists of Kenya; and, the indigenous swidden farmers of the upland areas of the Philippines. Each report responded to three questions: (1) What are the traditional views held by indigenous peoples about land and the environment? (2) How have national laws and government policies either corresponded or conflicted with these views? (3) What types of policies, programs, or projects could more adequately take indigenous views of land and environment into account?

Firstly, the reports indicated that indigenous peoples--in contrast to Western economists and development planners--do not view land as a "commodity" which can be bought and sold in impersonal markets; nor do they view the trees, plants, animals, and fish as "natural resources" which produce profits or rents.

The authors also highlight the desire of indigenous peoples to participate in development and environmental programs planned for their lands. The nature of this participation, however, goes beyond the simple idea of "beneficiary participation" reflected in several of the integrated rural development programs of previous decades or some of the contemporary conservation programs in the "buffer zones" which surround nature reserves. Indigenous peoples want to be the active designers of their own destinies, and they wish to create alternative futures which would include the best of the traditional cultures and knowledge of their ancestors, along with the new techniques. [Author abstract, modified]

Macdonald, Ted.
Working with Indigenous People in Latin America: Towards Social Equity in the Conservation of Fragile Lands and Protected Areas.
Cultural Survival, Cambridge, Massachusetts.
Report prepared for USAID, Bureau of Research and Development, Washington, DC.
January 1992, 30 p.

Key words: Indigenous populations/ /Social equity/ /Fragile lands/ /Conservation/ /Protected areas

In his examination of social equity for indigenous people in Latin America, Macdonald states that Latin American Indians and their organizations have reason to be cautious, and indeed suspicious, of individuals and organizations which claim to work on their behalf. Recently, Indian organizations have been established to: (1) defend their member communities' rights to land and resources; and (2) to expand and strengthen their organizations. These groups regularly challenge government agencies, churches, and national and international development organizations to make sure that development programs do not mask efforts to weaken their organizations.

Macdonald first outlines some of the historical and institutional background which has led to the current situation of indigenous people, and reviews ways in which government and NGOs have worked with indigenous groups.

The second section of the paper focuses on the role of development planners in relation to indigenous groups and strategies for doing so. The third section offers case studies which illustrate positive and negative indigenous responses to programs of conservation and resource management. The paper concludes with guidelines and suggestions for working with these new social sectors.

Macdonald suggests that for those involved in development and environmental issues, the essential link with Indian peoples will require a shift in their understanding of community. The emergence of ethnic federations has significantly expanded Latin American Indians' definition of community. That community must now be viewed as a political sector within national, and in some contexts, international society. As a political entity, it, like all others, will seek and demand recognition as a participant. Consequently, new interpretations and approaches to such widely accepted concepts as "local participation" and "community involvement" will be necessary. [Author abstract, modified]

Poole, Peter.
Developing a Partnership of Indigenous Peoples, Conservationists, and Land Use Planners in Latin America.
Report from The World Bank, Latin America, and Caribbean Technical Department, Washington, DC.
August 1989, 96 p.

Key words: Indigenous peoples/ /Conservation/ /Land use/ /Wildlife/ /Parks management/ /Reserves/ /Economic policy/ /Rain forests/ /NGOs/ /Papua New Guinea/ /Australia/ /Nepal/ /Kenya/ /Canada/ /Alaska/ /Brazil/ /Chile/ /Peru/ /Mexico/ /Bolivia/ /Panama/ /Ecuador/ /Colombia/ /Paraguay/ /Costa Rica/ /Honduras

Drawing from a body of case material from Canada, Latin America, Africa, and Asia, Poole suggests certain principles for incorporating indigenous peoples and their environmental knowledge into wildlands and native area planning.

His report reflects a shift away from the traditional view--represented by certain national parks and similar protected areas--that indigenous peoples be allowed to occupy and use an area's resources following rules set by conservationists. Under the new paradigm that is developing, indigenous peoples are seen as an integral part of protected area planning through agreements worked out in partnership with conservation authorities. An example of this new approach is the role of indigenous peoples in the design of biosphere reserves.

Poole argues that recognizing the land rights of indigenous peoples, far from hindering the rational occupation and development of these lands, allows better use of their environmental knowledge. His findings apply only in areas where resident indigenous populations and protected wildlands areas overlap.

Based on the research, Poole recommends that non-governmental organizations (NGOs) be given more responsibility for reconciling the often conflicting interests of national land-use planners and indigenous communities (native groups being more likely to trust NGOs than large public sector organizations).

The report contends that the World Bank should pay close attention to these collaborations with NGOs, especially those in threatened rainforest areas. Poole also suggests that the World Bank and other development organizations pay more attention to "vernacular economies"--economies based on local resources, used either for subsistence or as a source of revenue. These mixed subsistence-cash economies--many of them based on the management and extraction of wild resources--do not easily conform to prevalent models for either development financing or ecosystem management.

Vernacular economies correspond to the "third option" for economic evolution that may emerge when indigenous and industrial economies come into contact. Mixed cash-subsistence economies that often result from such contact are seen by some as a transitional phase in an inevitable process of assimilation--and by others as an evolutionary process in which features of indigenous and

industrial economies are combined in an assimilative system that eludes conventional economic analysis.

Poole recommends more research into the economics and resource implications of these local activities to harvest wild resources, especially in environmentally delicate areas such as tropical rain forests.

Drawing on a series of case studies, Poole illustrates clashes between animal protectionists and indigenous hunting societies in a number of regions (such as Alaska) and also presents material on indigenous involvement in conservation area management in Papua New Guinea, Australia, Nepal, and Kenya. Part II of the report focuses on Latin America, and discusses national parks and conservation areas/projects in Brazil, Chile, Peru, Mexico, Bolivia, Panama, Ecuador, Colombia, Paraguay, Costa Rica, and Honduras. [Report abstract, modified]

Shepherd, Gill.
Managing Africa's Tropical Dry Forests: A Review of Indigenous Methods.
Overseas Development Institute (ODI), London, England.
ODI Agricultural Occasional Paper 14.
ISBN 0-85003-139-7.
1992, 117 p.

Key words: Tropical dryland forest management/ /Indigenous peoples/ /Woodland management/ /Community natural resources management/ /Agroforestry/ /Land tenure/ /Policy/ /Africa/ /Niger/ /Sudan/ /Somalia/ /Kenya

This report presents the results of an extensive literature search and analysis of indigenous forest management practices in dryland Africa. Part I offers an overview of indigenous management methods, including woodland management. It also discusses the role of the state in woodland management, as well ownership issues. Four woodland management projects are reviewed in this section: (1) the Guesselbodi of Niger; (2) the Rawashda forest of Eastern Sudan; (3) the Bay Region of Somalia; and (4) the Turkana rural development project in Kenya. In each of the projects, the author discusses the project rationale, area identification, the interest of local people in a management role, authority structures, attempts to understand indigenous tenure, and lessons to be drawn from the cases. Part II of the report provides detailed bibliographic abstracts of a number of works relating to dryland forest management in Africa, with particular emphasis on indigenous methodologies.

Shepherd provides conclusions on the four particular woodland management projects reviewed in Part I, particularly regarding the nature of indigenous management. He states that in these examples, there have been strong capable managers in charge of woodland management and the exploitation of trees. Many of these managers have a lifetime commitment to the area and are often related to some or all of the people on whose behalf they issue management rules. Most management rules, as a result, are very well attuned to local needs and constraints, and have arisen in apt response to some perceived problem. Secondly, management is as simple as possible. Unless the resource has some value or scarcity, management will not be undertaken. Thirdly, management is for a set of interlocking benefits. It is quite hard to separate out woodland management from swidden-fallow management, herd management, and annual crop management. Moreover, wood is far from being the only resource for which woodlands are managed. Fourthly, rising population density is turning pastoralists into farmers, long swidden-fallow into short, the usufruct of clan land into individual title. Therefore, the management focus has narrowed and in many areas the numbers of locally born and locally significant decision-makers above the level of household heads are dwindling. Finally, political and economic authority has passed from indigenous managers to the state in most places. The elders left can no longer command the respect they used to, and it is difficult for them to hope to manage forests or woodlands in any very complex way.

The report also emphasizes that centralized political authorities continue to deny, on the whole, the ability of local decision-making bodies to manage their environment, and government legislation has become necessary for the smallest changes. Because local laws are not in effect any more, degradation within the forests has resulted. Management has thus changed from use-rights

based on clan membership to the exercise of state-granted privileges and management by restriction and exclusion.

Shepherd believes that these case studies suggest strongly that local resource management stands a better chance of success somewhere relatively remote (such as the Bay Region) than within the catchment of a town, like Guesselbodi or Rawashda. Remoteness, a low population density, and often relatively low rainfall, are the keys to areas in which successful local woodland management might take place. In nearly all the cases, the most promising focus for local people is on the creation of tree resources on the farm, leaving patches of environmental reserve to the state.

In terms of suggestions for further research, Shepherd proposes three woodland management research topics: (1) experimentation is needed in devising land-use systems which combine the management of off-farm tree resources shared by small groups, with normal on-farm tasks; (2) research into the approach to all forest reserves still found in Africa and the extent to which should be retained by the state and which should be broken up and allowed to become farmland; and (3) additional data on indigenous knowledge of fire as a management tool.

Warren, D. Michael.
Using Indigenous Knowledge in Agricultural Development.
The World Bank, Washington, D.C.
World Bank Discussion Paper 127.
ISBN 0-8213-1884-5.
1991, 46 p.

Key words: Indigenous peoples/ /Natural resources management/ /Community participation/ /Resource centers/ /Farming systems/ /Africa/ /Latin America/ /Asia/ /Near East

This World Bank discussion paper highlights the importance of indigenous knowledge in its review of various development projects and case studies in Africa, Latin America, and Asia. Case studies of indigenous knowledge and decision-making systems are also analyzed. Additionally, Warren provides information on the recent efforts to establish a global system of indigenous knowledge. The final section of the paper recommends actions and strategies for the World Bank for taking indigenous knowledge into account in its projects.

The initial portion of the paper is devoted to an analysis of case studies on indigenous knowledge and decision-making systems. The author examines indigenous mixed cropping systems, forest gardens, tree management, and pest management. The role of indigenous organizations in decision-making for development is also analyzed.

The major section of the paper reviews three types of project scenarios: (1) projects where local knowledge provided an improved approach to managing natural resources than proposed project technologies (looking at cases in Zambia, Chad, Mali, Peru, Bolivia, Niger and Kenya); (2) projects that inadvertently ignored indigenous structures (looking at cases in Bali, West Africa, the Sahel, Sierra Leone, the Senegambia region and Yemen); and (3) projects whose success at meeting their objectives can be linked to deliberate incorporation of indigenous knowledge components (looking at cases in Ghana, India, Niger, Rwanda and Southern Sudan).

Another important section in the paper regards the recent establishment of a global system for indigenous knowledge. The author states that some 3,000 development professionals and institutions in 124 countries are now linked by an international network operating through CIKARD (the Center for Indigenous Knowledge for Agriculture and Rural Development). CIKARD, established in 1987 at Iowa State University, is designed to strengthen the capacity of domestic and international agencies to improve agricultural production and the quality of life in rural areas. CIKARD is facilitating a decentralized approach to recording and utilizing indigenous-knowledge systems through a growing network of regional and national indigenous knowledge resource centers. The Leiden Ethnosystems and Development Program (LEAD), established in 1988 at Leiden University in the Netherlands, is working closely with CIKARD to produce CIKARD News and a variety of monographs dealing with indigenous knowledge. In 1989, agreements were made to establish regional centers in both Africa and Asia. The Africa Resource Centre for Indigenous Knowledge (ARCIK) has been established at the Nigerian Institute of Social and Economic Research in Ibadan. The Regional Program for the Promotion of Indigenous Knowledge in Asia (REPPIKA) is housed at the International Institute of Rural Reconstruction in the Philippines. A sub-regional Latin American center was established in

1990 at the Postgraduate College in Chapingo, Mexico. Each regional center will have a documentation unit, a training and consultancy unit, and a research unit. Negotiations are under way for the establishment of sub-regional centers for the Andean nations and for East Africa.

In his final section, Warren discusses ways in which the World Bank can take a leading role in promoting use of indigenous knowledge for development. Among the key areas include: (1) support to systematically record and preserve indigenous knowledge for development efforts at national resource centers; (2) provision of training opportunities to incorporate indigenous knowledge components into educational institutions; (3) conducting participatory research on indigenous knowledge systems; and (4) establishment of systems for global networking and electronic exchange of indigenous knowledge.

EXTRACTIVE RESERVES

Browder, John O.
The Limits of Extractivism.
Article from BioScience, Vol. 42, No. 3.
March 1992, 9 p.

Key words: Extractive reserves/ /Amazon/ /Indigenous peoples/ /Rain forests/ /Non-timber forest products/ /Agroforestry/ /Community natural resources management/ /Brazil/ /Bolivia

Browder's article examines a number of assertions on extractive reserves as they apply to the Brazilian Amazon, as well as challenges the growing view among conservation groups and donor organizations that extractive reserves will help save tropical forests on a meaningful scale. Browder emphasizes the difference between extractive reserves as a conservationist concept and extractivism as a social reality. Although extractive reserves may play a useful role in natural forest conservation for a small proportion of the Amazon's forest area and human population, Browder stresses that much greater emphasis must be given to strategies that go beyond the limits of extractivism, in order to stabilize the precarious economic and ecological situations of small- and medium-scale farmers and ranchers, the principal agents of forest destruction in the Amazon.

Browder points out that a major impediment to the development of a replicable model of extractive systems is a lack of a single role model of extraction among rural Amazonian households. When the profitability of sustained yield extraction declines, forest-dwelling populations, whatever their social orientation, are likely to deplete a renewable commercial resource or shift to other, more profitable activities, regardless of their ecological effects.

Like every other form of labor, extractive activities do not exist in a social vacuum. The behavior and incomes of rural people who extract forest products are typically determined by social and economic forces over which they have little control. Most extractors are not independent agents but live under various regimes of economic and social dependence to large landowners, merchants and private companies that regulate prices and marketing opportunities for rainforest produce. Many extractors, living in long-established traditions of debt peonage, typically earn a cash income barely sufficient to ensure household subsistence.

Browder cites the findings of three ethnographic studies of rubber-tapper communities in three distinct parts of the Amazon Basin: Xapuri, Acre; Carauri, Amazonas (both in Brazil); and an area in the Beni province of Bolivia near Riberalta. In all three cases, Browder points out that the vast majority of rubber tappers are financially indebted to land owners, bosses, and middlemen. Natural resource degradation by local rural inhabitants occurs and may be accelerating in many rubber-tapping areas.

In looking beyond extractive reserves, Browder proposes a number of suggestions. The first of these is diversification and secondary forest recovery. Expanding agroforestry on bush fallows could serve as the basis for increasing farm income over the medium term. Forest timber enrichment

(the planting of commercially valuable tropical hardwoods) in secondary forests could provide the basis for increasing farm income over the long term. These activities, combined with short-term income activities (e.g., beekeeping and fish farming), could go a long way toward breaking the dependence of farmers on short-cycle cropping that entails forest conversion.

Another suggestion is the intensification of farm cultivation, including continuous cropping with natural rather than artificial fertilizers. Browder points out that little attention has been given to the techniques employed in traditional and indigenous Amazonian soil management activities. Yet, recent research suggests that some of these traditional systems are more efficient and ecologically more appropriate than conventional smallholder agriculture.

Finally, Browder illustrates that with a few exceptions, the research literature on neotropical forest extraction has focused on non-timber products. He states that the omission of timber resources from discussions of sustainable extraction in the case of Brazil seems incomprehensible. He concludes that if it is the goal of international conservationists to make tropical forest conservation through extraction economically feasible, then timber extractors, like colonists, in Amazonia can hardly be ignored.

Fearnside, Philip M.
Extractive Reserves in Brazilian Amazonia.
Article from *BioScience*, Vol. 39, No. 6.
June 1989, 7 p.

Key words: Extractive reserves/ /Forest management/Brazil/ /Amazon/ /Indigenous peoples/ /Rubber tappers/ /Non-timber forest products/ /Ethnobotany/ /Tropical forests

In this article, Fearnside reviews the situation of extractive reserves in Amazonia, discusses the economic value of extractive products, and reviews the role of extractive products for the future.

Written in 1989, Fearnside's article discusses the provisions for extractive reserves which were included in Brazil's new constitution which took effect in October of 1988. Fearnside states that the reserve proposal is attractive for several reasons related to social problems. It allows the rubber tappers to continue their livelihood rather than be expelled by deforestation. However, it is unlikely that sufficient land will be set aside as extractive reserves to employ all the tappers. Displaced rubber tappers swell the ranks of urban slum dwellers in Brazil's Amazonian cities, and they have become refugees in order to continue their profession in the forests of neighboring countries, such as Bolivia. Fearnside argues that the extractive reserve proposal should not be viewed as a means of supporting a dense population or of absorbing people migrating from other locations. He also warns that great care must be taken that the terms "extractivist projects" or "extractivist reserves" do not become euphemisms for the type of settlement that has already become discredited on the Transamazon Highway and in Rondonia.

Acre and Rondonia, regions that are undergoing rapid deforestation, have the greatest proportion of free, or autonomous, rubber tappers and the strongest rubber-tapper organizations. Most tappers elsewhere are still under the *aviamento*, or debt peonage, system. Rubber tappers under such a system sell their products to, and buy their provisions from, a rubber baron or *seringalista*. The tappers are "held captive" by the ever-increasing debts they owe the *seringalista*.

In Fearnside's view, the first priority for use of any funds received for extractive reserves must be to demarcate quickly as many reserves as possible. Development of infrastructure to improve living conditions in the reserves should come later and be kept as modest and locally supported as possible. Fearnside believes that timber management projects and extractive reserves should be promoted as alternatives to deforestation, and that the forest remaining in the region is ample for both. Forest management projects, from his perspective, do have fewer advantages compared to extractive reserves. Extractive reserves produce salable goods on a sustainable basis, using known harvesting techniques.

In terms of extractive products in the future, Fearnside suggests that the rubber tappers would be wise to make a major effort to diversify the products that they extract and sell. This strategy would require collaboration with researchers (such as pharmacologists, chemists and botanists) to develop new products, especially from medicinal plants. Marketing mechanisms for new products need to be developed and institutional arrangements need to be made to assure that extractivists

receive royalties from the future sale of the products, including synthetic copies and subsequent modification of plant compounds.

Biological information is cited as a valuable extractive resource, although the monetary value of genetic material and potential pharmaceutical compounds is difficult to assess. The lack of substantial effort by pharmaceutical companies to screen Amazonian plants for new compounds is frequently put forward by governmental agencies as evidence that the forest's potential usefulness is low. The tepid response, maintains Fearnside, is better explained by the costs and risks of the search for new compounds and the long process of testing. Similarly, some firms are more interested in the Amazonian forest's potential for providing ingredients for soaps and cosmetics. Part of the attraction of cosmetics is the more rapid and inexpensive process of gaining approval for marketing, as compared with drugs, which are encumbered by requirements for extended clinical testing. These non-medicinal uses, although providing some potential income, lack the important moral appeal that pharmaceutical compounds have in justifying the maintenance of forests.

In conclusion, Fearnside states that finding ways to make sustainable uses profitable and nonsustainable ones unprofitable is essential. Efforts to do so may include identifying new products attainable from the forest, finding sustainable economic uses for timber trees, demonstrating the feasibility of sustained forest management, and documenting the environmental costs of forest loss. Other actions could include altering the relative prices of sustainable and nonsustainable products to favor the sustainable ones, as well as changing the discount rates used in evaluating forest-use options. Fearnside also maintains that pointing the government's activity in the direction of sustainable forest use will require disposing of traditional economic calculations rather than tinkering with their input parameters.

Gray, Andrew.
Indigenous Peoples and the Marketing of the Rainforest.
Article from *The Ecologist*, Vol. 20, No. 6.
November/December 1990, 5 p.

Key words: Indigenous peoples/ /Marketing/ /Rainforests/ /Rainforest products/ /Extractive reserves/ /Amazon/ /Brazil/ /Peru

In his analysis of indigenous rainforest dwellers and marketing, Gray reviews traditional patterns of trade, indigenous priorities, control and utilization of resources, and control of the marketing process. He also discusses the impact of the World Resources Institute's Biodiversity Conservation Strategy and its impact on indigenous peoples.

Gray states that the marketing of "sustainably-produced" rainforest products is being touted by environmental and development organizations as a key to saving the rainforests. In doing so, there is a danger that the opinions of the indigenous inhabitants will be ignored. If indigenous peoples do not have control over the marketing of rainforest products, Gray warns that they will become dependent on outside forces over which they have no control. This will inevitably lead, in his view, to the destruction both of the indigenous societies and the rainforests.

In his discussion of control of resources, Gray emphasizes that the territories of indigenous peoples are constantly under the threat of invasion. The primary problem for indigenous peoples is the securing and defense of their land base. Gray believes, however, that land in itself is not the answer, and that until indigenous peoples obtain recognition of their rights to the territories, any form of survival will remain precarious.

A common assumption of those who see indigenous peoples and the rainforest being saved through the market economy is that the market is a changeless phenomenon. Marketing is actually a part of exchange activities between and within communities. It has several aspects based on the extent to which the community is independent of, or integrated into, the broader industrial market economy. These features include: (1) exchange of goods between communities; (2) local markets existing in the form of trading posts, or nearby town where indigenous and other forest peoples can bring their produce to a central place and sell or exchange it for other goods; (3) chains of exchange which link the indigenous community to the national and international economy. Through these chains, goods such as rubber, wood, or other products are sold or exchanged to middlemen or merchants who sell them to outsiders, usually at a considerable profit. When the marketing of the rainforest is discussed, it usually concerns this third aspect of the market economy.

Gray provides examples which show the range of effects the market economy can have on indigenous peoples in the Amazon, from the genocidal and ethnocidal to the less disruptive and potentially beneficial. He also provides examples of Amazonian peoples who have managed to deal with the market economy on their own terms. The Panare are one group who have refused to replace their subsistence economy with cash-cropping, and instead exchange handicrafts with the local Criollos, and are still able to continue with their subsistence economy. In Peru, the Amarakaeri have developed their gold economy on a sustainable basis. By controlling their territories with recognized

land titles and emphasizing their subsistence economy, they have largely escaped the devastating impact of the market economy.

Gray states that examples of indigenous peoples controlling their own marketing are hard to find. In the Pichis of Peru and the Rio Negro of Brazil, indigenous peoples are looking at marketing as a process rather than the selling of produce. They are trying to gain control of transportation, thereby cutting out the middlemen who gain so much profit.

In terms of control of the market process, Gray cites the views put forth by the Union of Indigenous Nations in Brazil, which focus on indigenous control over the processing of products before they go to market, control over the transportation of commodities to market, and the use of their own contracts through their national and international organizations to gaining marketing outlets.

The article provides a section on utilizing resources and discusses the World Resources Institute's Biodiversity Conservation Strategy, which hopes to wed "development" to biological diversity conservation. Gray believes that the approach ignores factors which are even more important than economic questions. The first factor is that "sustainable development" in itself is not necessarily culturally appropriate. Prohibitions and social production patterns could all affect how a community reacts to being persuaded to sell rainforest produce. The second element is the "political dimension of development." Gray points out that it is mistakenly believed that indigenous peoples organized in communities naturally tend to form cooperatives. The imposition of cooperatives from outside could be disastrous to the unity of the community, which is frequently kept together by respecting internal divisions.

In his concluding remarks, Gray emphasizes that marketing is not the top priority of the indigenous peoples of the Amazon, and that we must not force our priorities on them. Finally, he concludes that if we do not listen to indigenous groups, we will turn the marketing of rainforest products into a commercial sideshow as we witness the destruction of the rainforest and the extinction and assimilation of indigenous and forest peoples.

Lamb, David.
Combining Traditional and Commercial Uses of Rain Forests.
University of Queensland, Dept. of Botany, Brisbane, Australia.
Article.
9 p. (publication information/date not included in article)

Key words: Community participation/ /Indigenous peoples/ /Rain forests/ /Commercial forestry/ /Timber harvesting/ /Asia-Pacific/ /Solomon Islands/ /Philippines/ /Samoa/ /Australia/ /Malaysia/ /India/ /Papua New Guinea

Using a series of case studies from the Asia-Pacific region, Lamb assesses the conflict of commercial timber harvesting with traditional uses. Lamb states that the traditional users see the forest as a source of resources that has sustained them, and some also see the land and forest as their spiritual home. By contrast, the timber industry usually views forests simply as sources of cellulose whose value is the price set by international markets. Between those two attitudes are governments, who commonly view forests as sources of development capital. The end result has commonly been that either the traditional forest users have suffered by having their resource base destroyed, or the companies have been forced to abandon their operations in the face of protests.

Lamb cites a variety of case studies of forestry operations and the effects on indigenous and forest-dwelling peoples in the Asia-Pacific areas: New Georgia, Solomon Islands; Luzon, Philippines; Savaii, Western Samoa; Arnhemland, Australia; Sarawak, Malaysia; Bastar, India; and Madang, Papua New Guinea.

Lamb offers a number of lessons learned from the above case studies. In several of the studies, it is clear that the governments had little concern about the effects of logging on forest-dwelling people. But in most cases, the governments facilitated or permitted the project in the belief that it represented a balance between satisfying national needs and protecting local interests. However, not one of the case studies was an outstanding success in terms of these two objectives.

Lamb presents the following specific lessons as a result of the studies: (1) forest-dwelling people need to be involved in the planning and implementation of logging operations; (2) sufficient areas should remain unlogged so that people can continue their traditional forest-based activities; (3) forest-dwelling people must benefit from the operation; (4) the operation must lead to viable, long-term economic opportunities; (5) immigration into the area after logging must be strictly controlled; (6) the logging operation should respect high environmental and silvicultural standards; (7) large-scale logging may sometimes be incompatible with the requirements of traditional users. Lamb provides an additional assessment of the difficulties of implementing the above lessons learned.

Peters, Charles M., Alwyn H. Gentry, and Robert O. Mendelsohn.
Valuation of an Amazonian Rainforest.
Article from *Nature*, Vol. 339.
June 29, 1989.
2 p.

Key words: Rainforest/ /Amazon/ /Non-timber products/ /Extractive reserves/ /Indigenous peoples/ /Economics/ /Forest policy/ /Peru

This article begins by stating that most financial appraisals of tropical forests have focused exclusively on timber resources and have ignored the market benefits of non-wood products. The results from these appraisals have usually demonstrated that the net revenue obtainable from a particular tract of forest is relatively small, and that alternative uses of the land are more desirable from a purely financial standpoint. Thus there has been a strong market incentive for destructive logging and widespread forest clearing.

The authors contend that a detailed accounting of non-wood resources is required before concluding *a priori* that tropical deforestation makes financial sense. As an illustration of their view, they present data concerning inventory, production, and current market value for all the commercial tree species occurring in one hectare of species-rich Amazonian forest. The authors stress that these data indicate that tropical forests are worth considering more than has been previously assumed, and that the actual market benefits of timber are very small relative to those on non-wood resources. Moreover, the total net revenues generated by the sustainable exploitation of "minor" forest products are two to three times higher than those resulting from forest conversion.

The findings of the article are based on an appraisal of an area along the Rio Nanay near the small village of Mishana, to the south-west of Iquitos, Peru. The inhabitants of Mishana are detribalized indigenous people who make their living practicing shifting cultivation, fishing, and collecting a wide variety of forest products to sell in the Iquitos market.

Based on the assumption of sustainable timber harvests and annual fruit and latex collection for perpetuity, the authors estimated that the tree resources growing in one hectare of forest at Mishana possess a combined financial worth of $6,820. Fruits and latex represented more than 90 percent of the total market value of the forest, and the relative importance of non-wood products would increase even further if it were possible to include the revenues generated by the sale of medicinal plants, lianas and small palms.

Recognizing that not every hectare of tropical forest will have the same market value as the plot studied in Mishana, the authors argue that the results of their study clearly demonstrate the importance of non-wood forest products. They contend that the sustainable exploitation of non-wood forest resources represents the most immediate and profitable method for integrating the use and conservation of Amazonian forests. Regarding the question of why so little has been done to promote the marketing, processing, and development of these resources, the authors hold that the problem lies not in the actual value of the resources, but in the failure of public policy to recognize it. Tropical timber is sold in international markets and is a highly visible export commodity controlled by the

government and supported by large federal expenditures. Non-wood resources, on the other hand, are collected and sold in local markets by an incalculable number of subsistence farmers, forest collectors, middlemen, and shop-owners. The authors point out that these decentralized trade networks are extremely hard to monitor and easy to ignore in national accounting schemes.

Ryan, John C.
Goods from the Woods.
Article from *Worldwatch* magazine 4(4).
1991, 8 p.

Key words: Extractive reserves/ /Non-timber forest products/ /Tropical forests/ /Local users/ /Indigenous peoples/ /Marketing/ /Ecology/ /Amazon/ /Brazil/ /Peru/ /Guatemala

In his essay, Ryan discusses the critical role that tropical forests play in the lives of rural people as sources of nutrition, health care, raw materials, and cash income. All the goods they provide, however (except for wood), are commonly considered to be "minor" forest products. Ryan argues that non-timber forest products form a major but undervalued part of Third World economies.

Because most of these forest riches are used for subsistence or traded locally, they are largely overlooked by foresters and economic planners focused on national export earnings. Ryan believes that fruits, resins, and many other products provide a promising alternative to deforestation or the degradation which can result from logging, but the creation of a sustainable and equitable trade based on these products will not come easily.

The usual lot of extractors is continued poverty, as the profits from their work are siphoned off by powerful middle-men and elites. Brazil-nut gatherers, for example, receive about four cents a pound for their labors, just 2 to 3 percent of the New York wholesale price. Three-fourths of the Brazil-nut market is controlled by three companies, owned by three cousins. Ryan indicates that for many rubber tappers, conditions are nearly as miserable today as during the rubber boom. Most are chronically in debt and exploited by middlemen. Ryan also points to the violence which is prevalent against those who threaten the economic dominance of landowners.

Ryan states that breaking out of this cycle of human and environmental suffering is no easy feat, but a number of groups have begun to show that it can be done. He cites the Brazilian rubber tappers as an example. Through collective action, they have pressed the Brazilian government for rights to their lands and have worked to reverse the inequity in land ownership. Funding from groups such as Cultural Survival is flowing into the Amazon to help forest extractors develop new markets and reduce the control of middlemen.

Outside of Brazil, similar progress can also be seen, for example, in a number of Peruvian Amazon peasant communities. Lake and forest reserves have been set up on a small scale to provide fish, rubber, fruits, and other products on a sustainable basis. Ryan also cites the Guatemalan Maya Biosphere Reserve as another example where local residents have expertise in forest use (although they lack the political organization the rubber tappers to date).

Ryan believes that the obstacles to success are only partly problems of marketing. The chief breakthroughs needed are political reforms, such as increasing local control over natural resources, and adherence to the ecological limits imposed by tropical environments. Marketing can be used to improve the welfare of forest dwellers as long as the fundamental political obstacles facing these people are resolved. Amazonian Indians, for example, have full legal title to less than 30 percent of

their lands. Ryan quotes Steve Schwartzman of the Environmental Defense Fund, who suggests that extractive reserves are best seen as a grassroots bid for social change rather than a business venture. Ryan stress that concentrating solely on exports without supporting local markets and subsistence uses could end up harming those who are supposed to benefit.

In Ryan's view, the dangers of market-oriented extractive economies can be minimized by carefully choosing the species and ecosystems to be used. For example, products that command high prices for small quantities, such as fragrances and flavors, may be easiest to produce profitably within minimal environmental impact. Some tropical forest areas are already thick with commercially promising species. Ryan cites the flood plains of Peru as an example, which have large stands of *camu camu*, a cherry-sized fruit that has vitamin C concentrations 30 times higher than oranges.

Ryan warns that though overshadowed by the appeal of extractive reserves, inviolate biological reserves (or indigenous reserves with low population densities) are still crucial for protecting the full range of ecosystem, species and genetic diversity. Extractive reserves cannot play this role, according to the author. Nor can non-timber forest products provide for all the needs of the rural poor. Agriculture and forest extractive usually go hand-in-hand, yet relatively little attention has been paid to this connection.

Salafsky, Nick, Barbara L. Dugelby, and John W. Terborgh.
Can Extractive Reserves Save the Rain Forest? An Ecological and Socioeconomic Comparison of Non-Timber Forest Product Extraction Systems in Peten, Guatemala and West Kalimantan, Indonesia.
Draft of paper submitted to *Conservation Biology*.
School of the Environment and Center for Tropical Conservation, Duke University, Durham, NC.
July 22, 1991, 21 p.

Key words: Extractive reserves/ /Conservation/ /Tropical forestry/ /Guatemala/ /Indonesia/ /Non-timber forest products

This study offers a comparison of existing non-timber forest product extraction systems in Peten, Guatemala and West Kalimantan, Indonesia, and identifies key ecological, socioeconomic, and political factors important in the design and implementation of extractive reserves. Background descriptions of extractive systems of the Peten and West Kalimantan are reviewed, and ecological factors such as the density of exploited species, temporal availability of products, and product/ecosystem sustainability are examined. The authors base their descriptions of the two extractive systems compared on research visits to Guatemala and Indonesia in 1990. In Guatemala, field work was conducted in the Department of Peten in villages located in the Maya Biosphere Reserve. In Indonesia, field work was conducted in the province of West Kalimantan, focusing on several villages which border Gunung Palung National Park.

The extractive industries of the Peten have prospered for decades because the target resources have so far not been overexploited. Individual chicle trees have been tapped for decades with seemingly minimal harmful effects, and likewise, xate harvest theoretically seems sustainable. In Kalimantan, there is little or no available evidence concerning the long-term sustainability of non-timber forest product harvest practices. There is some indication, however, that some of the current harvest practices may be unsustainable, as they either destroy the harvested individual or remove reproductive parts. For example, both *gaharu* and *medang* (bark from Litsea spp. used in the production of mosquito repellant coils) harvests, as currently practiced, involve cutting down the tree to obtain the desired product.

With regard to socioeconomic and political factors, the authors point out that an important problem in many extractive systems is the lack of incentives for individuals to conserve available resources for long-term use. Instead, individuals respond to perverse incentives to overharvest resources that are often rooted in existing land and resource tenure regimes. Many forest products are open-access resources that are publicly owned, yet their use is not governed by formal or even informal rules. In such situations, individual harvesters have little or no incentive to conserve or manage the resource. In contrast, traditional societies with established rules governing resource use, operate under a managed type of common property, a system that can potentially provide incentives for conservation.

The report goes on to discuss physical and social infrastructure in relation to extractive
s, as well as market demand and pressures for alternative land use and political power.

The authors conclude that although extractive reserves can play a significant role in preserving tropical forests as a part of a broader land-use spectrum, their effectiveness is highly dependent on prevailing local ecological, socioeconomic, and political conditions. Ultimately, extractive reserves should be one component of an overall approach to the problem of tropical deforestation.

PROTECTED AREA MANAGEMENT

Hannah, Lee.
African People, African Parks: An Evaluation of Development Initiatives as a Means of Improving Protected Area Conservation in Africa.
Conservation International, Washington, D.C.
Prepared under a grant from U.S. Agency for International Development.
Printed with assistance from the Biodiversity Support Program.
1992, 76 p.

Key words: Parks management/ /Reserves/ /Buffer zone management/ /Indigenous peoples/ /Conservation/ /Forest management/ /Local participation/ /Community-based natural resources management/ /Wildlife/ /Africa

This study is intended to address the lack of information on pioneer parks management projects in Africa from the early 1980s. After providing an overview of the study methods used in the examination of protected areas and pressures, the report reviews a number of project profiles in Africa (in Kenya, Rwanda, Burundi, Niger, Madagascar, and Zambia). Section II reviews a number of case studies which compare top-down vs. bottom-up methods in two cases in Kenya, and reviews national and local support for Afromontane forests in Rwanda and Burundi. A section is also provided on designing a national protected area system in Madagascar. Section III gives recommendations and suggestions for future work.

Hannah states that today there are over 30 people and parks projects in Africa, yet the pioneer projects of the early eighties have barely been revisited. Many of the current projects have been designed with no knowledge of some of the less publicized pioneering efforts. New projects continue to be designed with little reference to past successes and mistakes, drawing only on fragmentary, out-of-date information and misleading promotional materials. This study reviews the implementation record of projects addressing rural development as part of protected area management in Africa.

In terms of the study methodology used, the report states that three phases were included: interviews with conservation professionals and organizations; field visits to select projects; and analysis. Interviewees were in general conservation professionals in positions of authority with major international conservation NGOs.

The project profiles include: 1) the Amboseli National Park Plan in Kenya; 2) the Mountain Gorilla Project in Rwanda; 3) the Bururi Forest Project in Burundi; 4) the Air-Tenere Project in Niger; 5) the Wildlife Extension Project in Kenya; 6) the Rumonge Agroforestry Project, near Lake Tanganyika; 7) the Nyungwe Forest Project in Rwanda; 8) the Beza-Mahafaly Project in Madagascar; 9) the Andohahela reserve in Madagascar; 10) the Kafue Flats Project in Zambia.

With respect to conclusions and recommendations as a result of the study, Hannah highlights a number of factors. Successful people and parks initiatives in Africa require long-term donor commitment, a sound policy environment (area of influence planning), and a focused, well-designed

project approach which includes technical assistance. Long-term sustainability of the benefits of the people and parks approach may require donor sharing of recurrent costs through the establishment of a conservation endowment or trust.

Hannah goes on to stress that a good people and parks project must address an entire protected area with adequate resources to be effective. Projects which address only a portion of a protected area cannot ensure the integrity of the area. Projects which address an entire protected area with very limited resources are highly unlikely to have any significant effect. These seemingly obvious points have been missed repeatedly in early people and parks efforts. In addition, several design factors emerge as important determinants of project effectiveness. Factors that stand out in the analysis of this study are: technical assistance, fit of development methods to local conditions, public support at both local and national levels, enforcement, and adequate project timeframe. The report provides additional details on these factors, using particular examples from the project profiles.

Hitchcock, Robert K.
Ranches or Reserve? Indigenous Peoples, Development, and the Future of the Central Kalahari Game Reserve.
(Report - No date or publication information provided)

Key words: Reserves/ /Parks management/ /Indigenous peoples/ /Land tenure/ /Conservation/ /Migration/ /Gender/ /Botswana/ /Kalahari

Hitchcock's article provides a detailed background of the Central Kalahari Game Reserve (CKGR) and examines changes in environmental, social, economic, and political aspects relating to the reserve and the indigenous peoples who live there. The article also examines various recommendations for future management of the area, including the conservationist strategy, the conservation with development strategy, and the development with production strategy.

Hitchcock begins his article by stating that the Government of Botswana is pondering what steps should be taken with regard to the Central Kalahari Game Reserve, an area which was originally established as a sanctuary for both people and wildlife. In the past two decades, pressure on the land has increased in the Kalahari. Both human and livestock numbers have grown, new water sources have been established, and agricultural and mineral development projects have been initiated. The plains of the Kalahari contain two resources upon which the rapidly expanding Botswana economy depends: grazing and minerals.

The article provides a historical perspective with regard to the establishment of the area as a game reserve and discusses the enforcement of hunting laws, the introduction of permanent water sources, the construction of cordon fences, the introduction of new technologies, and the expansion of remote area development activities.

A substantial portion of the paper also reviews the important demographic and socioeconomic shifts among resident populations. Data is provided on the breakdown of ethnic composition in the area as well as trends in socioeconomic change among the people. The author quotes Vierich, who identified three categories of Basarwa in the south of the CKGR. She broke the population down into three classes: independent, semi-dependent, and dependent. Independent groups relied completely on hunting and gathering for their subsistence and income. Semi-dependent ones were characterized by people supporting themselves main by foraging, but who were supplementing their subsistence by working for others or getting handouts. The dependent groups were ones which lived in associations with other groups and provided goods and services in exchange for food, clothing and cash. Many CKGR bands are, or were until recently, self-sufficient units, but as resources have declined and food relief programs have increased, the numbers of people who can be termed dependents have risen.

One of the most important socioeconomic trends is that people are becoming less mobile, owing to the introduction of permanent water in the region, competition for residential space, demographic pressure, and the introduction of social services. There has also been a collapse in the breakdown in the division of labor, with men carrying out tasks such as gathering and women becoming more involved in domestic maintenance activities. More and more children are also being brought into the labor force.

In the past, the traditional answer to resource degradation was either increased mobility or intensification of foraging labor. Now, with more people, livestock and development, these options are no longer as open as they once were. People have begun to turn more toward herding, agriculture, and wage labor. Over the past eight to ten years there has also been a process of outmigration from commercial areas as ranchers have forced people who are not employed to leave their land.

Hitchcock cites several researchers who believe that the increasing rate of change in the CKGR is due primarily to the remote area development policy of the Botswana government. Although the setting up of the CKGR originally can be seen as an attempt to allow people to maintain their traditional existence, Hitchcock states that the restrictions placed on the kinds of activities allowed has been construed by residents as a means of preventing them from developing along the lines they have chosen.

With regard to recommendations for future management of the area, the author discusses a number of approaches which have been suggested. In terms of the suggestion that people should simply be left alone, Hitchcock argues that given the increasing pace of development in the Kalahari, this position is unrealistic. Another group favors a strategy in which people are integrated into the society through being brought into the villages. With respect to this position, the author points to the impact of settlement schemes and the problems which are incurred. A third group believes that remote area groups should receive special attention and have rights designated specifically for them. The Remote Area Development Program has espoused the latter approach with particular stress being placed on securing land and providing a means of making a living for indigenous people.

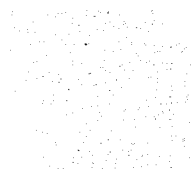
Hitchcock discusses three additional specific strategies for the CKGR. The first of these is the "conservationist" strategy, which recommends that at least a part of the CKGR should become a national park. Hitchcock points out that a major drawback to turning the area into a national park, from the standpoint of the local population, is that it would require most if not all of the people to move out. An extension of the conservation through forced removal of people argument is one in which people who are judged to be "traditional" will be allowed to stay in the CKGR. The author discusses a number of problems related with this position, including how to define who is "traditional."

A second recommendation, the "conservation with development" strategy proposes that the reserve be divided into two parts, with the small northern portion being turned into a national park and the larger southern part continuing to be classed as a game reserve. The reserve portion might be used as a settlement area for Basarwa and Bakgalagadi who could operate game cropping schemes, among other activities. The drilling of additional boreholes has been another related proposal, which Hitchcock feels may only add to the overgrazing and overstocking around water points in the Kalahari. The proposal by some government planners and researchers of a Wildlife Management Area (WMA)--a region where wildlife utilization and management represent the primary forms of land use--is also discussed. The author examines potential problems with the WMA concept, including the prevention of population growth.

The third strategy discussed is the "development with production" strategy. Many planners in Botswana believe that the quickest way to promote economic growth in the country is to expand the two industries which have the highest rate of return: mining and livestock. The author warns that

one of the biggest dangers inherent in an expansion of mining and livestock production is that the environment could be damaged irreparably. There is also concern that local people will be displaced or put at a severe social and economic disadvantage as a result of commercially-oriented activities.

Rocheleau, Dianne, Karen L. Schofield and J. Njoki Mbuthi.
People, Property, Poverty and Parks: Story of Men, Women, Water and Trees at Pwani.
ECOGEN Case Study.
Clark University, Institute for Development Anthropology, and
Virginia Polytechnic Institute and State University.
U.S. Agency for International Development, Bur. for Science and
Technology, Division of Rural and Regional Development.
U.S. Agency for International Development, Women in Development
Office.
July 1991, 45 p.



Key words: Natural resources management/ /Gender/ /Gender analysis/ /Participatory rural appraisal/ /Kenya/ /Community participation/ /Parks management/ /Household analysis

This case study, one of five undertaken in rural Kenya by ECOGEN (Ecology, Community Organization, and Gender), focuses on a recently populated resettlement village, Pwani, located in Njoro Division, Nakuru District. The village is adjacent to the Lake Nakuru National Park. The objectives of the research in Pwani were to understand the ways in which natural resources are managed in the community and within the household, with emphasis upon the institutions and individuals who make and carry out management decisions, particularly as distinguished by gender.

ECOGEN's underlying premise is that it is essential to understand the role that gender plays in determining access to and control over natural resources. Furthermore, sustainable production requires attention to the particularities of local ecosystems. A participatory rural appraisal was conducted in Pwani to address the importance of gender in the participation process, as well as the value of gender analysis in the resulting Village Resource Management Plans. The initial household and group interviews outlined the history, geography, and community organization of Pwani, the various kinds of households, and the shape of peoples' daily lives. The second phase of the appraisal focused on problems and opportunities related to resource management at household and community levels, and the development of a village management plan.

After providing an initial community profile of Pwani, the report provides several sections on gender, households, and livelihood in Pwani. In the discussion of gender and community-wide resource management, the authors review water scarcity/quality, fuelwood, sustainable agriculture, livestock health, and the Nakuru Park in relation to the people of Pwani. Section V gives an overview of community responses and progress to date, and also discusses future prospects, including the strengthening of local institutions and linkage of local groups with government. Section VI discusses policy implications, including settlement and land tenure policy, extension services, and management of park boundaries.

The report includes a number of interesting personal case studies of individual women in Pwani and their household situations.

Section VII provides a number of conclusions. Firstly, from veterinary medicine to human health, and from livestock management to water tank construction, the gender lines are shifting, but

they are not disappearing. In many cases women are taking on roles that were formerly men's jobs, which is creating a new rationale for the way that men and women divide and share work and resources. Resource management programs with rural women who manage farms on behalf of absentee wage laborer husbands will still require an understanding of who controls the resource and the terms of shared access and authority. Full and equitable participation by all land user groups in the community is essential. Men and women may prefer to work separately or together, or their preference may vary depending on the particular issue or task. The key ingredient for appropriate structures and process is flexibility of format and method to suit the people, the place and the task. The choice of participating organizations and the selection of group representatives is critical, whether the topic is settlement, tenure, extension services, or park boundary issues.

Wells, Michael and Katrina Brandon, with Lee Hannah.
People and Parks: Linking Protected Area Management with Local Communities.
Report funded by the World Bank, World Wildlife Fund, U.S. Agency for International Development.
1992, 99 p.
ISBN 0-8213-2053-X
Paper copy cost: $10.95

Key words: Parks management/ /Reserves/ /Community participation/ /Protected areas/ /Conservation/ /Economic development/ /Local users/ /Africa/ /Central & Latin America/ /Asia

The report begins with the premise that most protected areas were originally established with little or no regard for local people, and in fact, park management has emphasized a policing role aimed at excluding local people--sometimes characterized as the "fences and fines" approach. Recognition is growing that management of protected areas depends on the cooperation and support of local people, and that it is often neither politically feasible nor ethically justifiable to exclude the poor--who have limited access to resources--from parks and reserves without providing them alternative means of livelihood.

In response, a new set of initiatives, known as integrated conservation-development projects (ICDPs) has been launched. These projects attempt to ensure the conservation of biological diversity by reconciling the management of protected areas with the social and economic needs of local people. The smaller ICDPs include biosphere reserves, multiple-use areas, and a variety of initiatives on the boundaries of protected areas, including buffer zones. Larger projects include the implementation of regional land use plans with protected area components, as well as large-scale development projects with links to nearby protected areas.

This study examines the early experiences of twenty-three such projects in Africa, Asia, and Latin America. The authors explore the social, ecological, technical, and institutional issues that arise from these attempts to link protected area management with local development. The report identifies the vital elements in the design of ICDPs and assesses the effectiveness of field experience. Lessons are also provided for future programs. The report also provides a number of detailed maps of various national park sites and forest reserves.

To achieve their objectives, ICDPs engage in three distinct types of operations: (1) protected area management activities; (2) buffer zone establishment; and (3) local social and economic development activities. Efforts to promote social and economic development among communities adjacent to protected area boundaries represent the central concern of the ICDP approach and distinguish it from other conservation approaches.

The authors conclude that the case study projects have resulted in numerous benefits for local people, principally through income gains and improved access to social services. From a strictly development-oriented perspective, several of the projects appear quite promising. In virtually all of the projects, however, the critical linkage between development and conservation is either missing or

obscure. Thus it is questionable whether many of the project activities have generated local benefits that have reduced pressure on the parks or reserves they are trying to protect.

Among the lessons learned, the authors state that ICDPs cannot address the underlying threats to biological diversity, many of which originate far from park boundaries. ICDPs have managed to achieve remarkable results, despite having to combine the most difficult aspects of conservation and park management with rural development. While traditional enforcement will continue to play a critical role, it will have to be coupled with efforts to benefit local people.

Recommendations for future ICDP initiatives are made in several areas: (1) projects as part of a larger framework that includes such preconditions as adequate political support, enabling legislation, realistic institutional arrangements, and compatibility with regional development, resource tenure; (2) scale of projects; (3) participating organizations; (4) site selection; (5) local participation; (6) financial resources; and (7) design and implementation.

GENDER

Kainer, Karen A. and Mary L. Duryea.
Tapping Women's Knowledge: A Study of Plant Resource Use by Women in Extractive Reserves.
Department of Forestry, University of Florida/Gainesville.
Article submitted to *Human Ecology.*
July 1991, 22 p.

Key words: Amazon/ /Extractive reserves/ /Gender/ /Forest products/ /Ethnobotany/ /Brazil

This paper discusses plant resource use by women in the newly formed extractive reserves in Acre, Brazil. The objectives of this study were to (1) construct a list by plant use categories of the most common species exploited by women in the extractive reserves; and (2) document specific information such as how the plants are processed and used, where they are located within the area and who cares for and collects them.

The authors found that in addition to their ability to identify, cultivate, manage, and process over 150 wild and domesticated species in their communities, the women also display a great desire to enter into the market economy, and have begun to test potential market products on a small scale.

The report states that little is known about extractive activities by women in the forest communities in Acre. The report refers to L. Simonian's documentation of the extensive involvement of women in all aspects of rubber production from tree selection to tapping, collection, smoking, and transport of rubber. She also observed that any reduction in rubber prices was accompanied by diminished rubber extraction by women and a greater allocation of their time into agricultural production.

The data which Kainer and Duryea compiled was collected while living with rubber tapper families in the *seringal* from August to November 1989. The field research was divided into two phases: (1) information gathering and plant collection with key informants during the first six-week phase, and (2) structured interviews with women from 14 families in the second phase. In addition, more than 30 informal interviews were held throughout the entire period in the rubber tapper areas of Cachoeira, Floresta, and Xapuri. During the first six-week phase, the authors composed an extensive list of plants used in the *seringal*, tested the plant survey, and collected plant specimens. In the second phase of the study, structured interviews were conducted solely in the Cachoeira area with a diverse cross section of women and residence locations. Fourteen women were selected based on age, kinship, distance from the main road, and proximity to one another. The survey included the following plant use categories: (1) food, (2) beverages, (3) spices, (4) medicines, (5) animal feed, (6) firewood, (7) construction materials, and (8) miscellaneous.

The remainder of the report provides more detailed information on the plant information which was collected. In conclusion, the authors found that women in the *seringais* possess particular proficiency in plant processing, especially of species used for food, spices, beverages, and medicines.

They also report that plant processing skills are crucial for development of economically useful plant products. The women of the rubber tapper movement also demonstrate a great desire to enter into the market, and responded enthusiastically to product fairs which were held. Several key local institutions and organizations are already in place to assist the women in product diversification and marketing--the Rural Workers Union of Xapuri and the Center for Amazonian Workers. Finally, the authors state that the triumph of extractive reserves as a new development model therefore also depends on recognition and positive exploitation of gender roles.

Paulson, Susan.
Women in Mizque: The Heart of Household Survival.
Institute for Development Anthropology, Binghamton, New York.
IDA Working Paper No. 76.
November 1991, 105 p.

Key words: Gender/ /Household analysis/ /Agricultural production/ /Migration/ /Labor/ /Indigenous peoples/ /Bolivia/ /Land use

Paulson's report aims to describe the social and economic conditions of women in the province of Mizque, Cochabamba, and to analyze the role that women play in the productive and cultural life of their households and of the region. The paper is designed to complement CEFOIN's 1990 report "Producción y Vida Rural en las Provincias Mizque y Campero" (Production and Rural Life in Mizque and Campero Provinces), which focuses on men's activities and on community- and institutional-level organizations. Paulson addresses the central concerns and terms of references elaborated by PDAR and CEFOIN, namely, to obtain information and data on rural life with respect to (1) family structure and patterns of residence and migration; (2) production; (3) division and distribution of labor; (4) market participation; and (5) management of natural and capital resources. The information presented is based on eighteen months of ethnographic research carried out in the province of Mizque between September 1988 and May 1990 as part of a Ph.D. dissertation program in anthropology at the University of Chicago.

After establishing the historical and geographical context for the study, Paulson begins with a discussion of family structure and patterns of residence and migration, based on 55 household surveys. The following two chapters explore women's roles in managing resources and activities within the household, with discussions of (1) human resources; (2) natural resources; (3) capital resources; and (4) social capital. The fourth chapter examines women's roles in socialization, and explores the problems that economic insecurity and the distribution of reproduction over various noncontiguous spaces dominated by conflicting lifeways pose for the reproduction of households. Chapter five offers conclusions about the conditions of women farmers in Mizque, and a set of guidelines and suggestions for improving the conditions of the women. At the end of the report, Paulson provides an appendix with photographs of the communities and households of the region.

The basic unit of analysis in Paulson's paper is not the individual woman, but rather the household, which is the most important productive, sociocultural and juro-political unit in the region.

Paulson states that the activities of Mizque women are not only inseparable from the whole of household and community life, they cannot be divided into economic, social, or recreational spheres, nor into work and leisure. Because rural women do a great deal of agropastoral work in addition to domestic labor and care of their families, some analysts have commented on their "double work day." While this concept may effectively express the burden of Western professional and proletarian women who perform income-generating labor in addition to caring for their homes and families, it does not fit the much more integrated work day of women in Mizque. Activities of rural Andean women are much less specialized and individualized than those of men and women in industrialized societies, and they need to be approached in a more holistic way. Paulson believes that rural women manage their

own time and resources in order to accomplish a wide variety of integrated tasks, none of which can be classified as strictly economic or exclusively family-oriented. A woman's productive activities take place not only out in the working world, but in the very heart of her home and family, while nurturing and care-taking is extended beyond her home to animals, crops, and reciprocal relations.

Paulson's paper demonstrates that women fill many important roles in rural Mizque. A significant portion of on-farm tasks are carried out by females, and women complement and sometimes replace men in primary crop agriculture. For development efforts, however, Paulson stresses that women are perhaps more important for their roles in administering resources and managing production, consumption and reproduction at the household level. Rather than finding new occupations for rural women, development efforts should focus on providing skills and knowledge to improve women's capabilities and labor-saving techniques to increase their efficiency.

DEFORESTATION/DESERTIFICATION

Bedoya Garland, Eduardo.
The Social and Economic Causes of Deforestation in the Peruvian Amazon Basin: Natives and Colonists.
Institute for Development Anthropology, Binghamton, New York.
IDA Working Paper No. 60.
March 1991, 26 p.

Key words: Deforestation/ /Indigenous peoples/ /Community management/ /Settlement/ /Natural resources management/ /Agricultural production/ /Narcotics/ /Peru/ /Amazon

This article addresses the accelerated deforestation presently occurring in the Amazon which has inspired literature from multiple perspectives ranging from the forest sciences and ecology to the social sciences. Bedoya Garland states that the literature, diverse as it is, offers no consensus on the criteria we should use to evaluate a problem of such magnitude. In his paper he demonstrates that the natural resources of various production systems are managed in specific ways that in turn influence the rate of deforestation. An analysis of the colonists and indigenous groups of the Amazon, in Bedoya Garland's view, reveals that the rate of deforestation by colonists is greatly affected by a high level of market integration, their relative access to land, labor and capital, and the formal land tenure system. For the Peruvian indigenous groups, the significant factors are the degree of access to land, the size of the productive unit, and the availability of family labor.

The first part of the discussion briefly describes agricultural expansion in the Peruvian Amazon Basin and its relation to deforestation. The second section discusses the relationship between intensification, deforestation, and the limits of the institutional changes brought about by the deeding of land titles. In this section, the author determines the impact of coca expansion and its relation to deforestation and agricultural intensification in the Upper Huallaga, using information from a 1981 survey of settlers. Section III compares settler production systems with those of three native groups. Section IV, in addition to presenting the author's conclusions, delves into the issues of indigenous peoples and deforestation. In this section, the author cites the work of the Center for the Investigation and Promotion of the Amazon (CIPA), which conducted a study between 1984 and 1985. The CIPA study, which the author uses as the baseline comparative data for his paper, examines the impact of the market economy on the indigenous communities of Satipo, Lower Urubamba, and Madre de Dios (including 94 family units from those areas). The author compares the three communities in the context of deforestation and agriculture production. He also presents an interesting comparison of the natives versus the colonists in terms of economic orientation, labor division, organization of human resources, and natural resource management.

In his concluding remarks, the author argues that in the case of the colonists in Upper Huallaga, we cannot limit the analysis of the intensification of agriculture and deforestation to a description of the characteristics of slash-and-burn agriculture. The effects of the illegality of coca, its high production costs, and above all, the high income it generates, provide proof that structural factors such as prices for agricultural products and their inputs are determinant variables and even more important than legal land deeding in the process of intensifying land use. The legal system may

improve the conditions of production for farmers, but a change in land tenure laws alone is not sufficient to modify land use patterns radically.

Likewise, in the case of the indigenous groups of the three regions under study, the greater or lesser availability of natural resources decidedly influences the level of deforestation in each case, but it is only one factor in a larger group of variables. The greater access to resources, permitted, for example, in Madre de Dios by lower population pressure, must be viewed in the context of their economic orientation.

Bedoya Garland emphasizes that we continue, nevertheless, to blame Andean colonists, Brazilian peasants and the technological requirements of shifting agriculture for the deforestation of the Amazon. The problem of deforestation, according to him, does not originate with individuals or systems of extensive agriculture. It is rooted in a determinant class structure that corresponds to the model of regional and national accumulation. The agriculture system and the destructive behavior of peasants is only an expression of a much more profound problem in the structure of society.

Collins, Jane L. and Michael Painter.
Settlement and Deforestation in Central America: A Discussion of Development Issues.
Institute for Development Anthropology, Binghamton, New York.
IDA Working Paper No. 31.
November 1986, 36 p.

Key words: Deforestation/ /Human settlement/ /Central America/ /Land tenure/ /Tropical forests/ /Smallholder agriculture

The authors state that while concerns about environmental destruction in Central America, and particularly about the concomitant processes of settlement and deforestation, have been increasing in recent years, the relevant literature on the region remains surprisingly scanty and narrowly focused. Few books or articles are based on detailed fieldwork conducted specifically for the purpose of gathering reliable data on settlement and deforestation.

The issue that dominates the Central American literature is the conversion of tropical forest to pasture through the process of smallholder settlement. This phenomenon is widespread, affecting tropical forest areas throughout the region. The literature reviewed implicates several factors as responsible for driving the conversion of tropical forest to pasture. At a national policy level, beef cattle production for the export market has proven to be an attractive way to generate revenue for investment and to meet foreign debt obligations, and commercial beef consumers in the U.S. have come to see Central America as an attractive source of inexpensive meat. Larger landholders are thus expanding their enterprises, which frequently leads to a highly speculative land market whereby poor farmers sell their land in order to acquire the cash needed to satisfy immediate consumption needs.

To the smallholders, ranching seems attractive because it is less labor-intensive than farming once pasture has been established. Unfortunately, the opportunities that ranching offers turn out to be illusory for most smallholders. While a small percentage of smallholders do succeed in making the transition from subsistence to small-scale capitalist ranchers, most exhaust their resources before they are able to establish pasture and acquire cattle. They frequently sell out to wealthier interests able to complete the conversion of land they have cleared of trees into pasture and move deeper into the forest.

The authors state that the search for alternative forms of land use is hampered by a lack of technically feasible production options. The most basic need in terms of the physical environment is to conduct detailed land capability surveys that establish what types of production activities may be conducted on a sustainable basis in a given area. Considerable land use survey work has been done, but not in a comprehensive way.

A second shortcoming is that little attention has been given to developing sustainable production systems that can yield acceptable revenues within the constraints imposed by land use capabilities. Throughout Central America, national governments have tended to limit their support to ranching and conventional agriculture, with a heavy focus on production for export markets. Efforts by international agencies to promote environmentally appropriate forms of land use have tended to produce equally conventional forestry projects. While less destructive than ranching, the authors

believe that these projects accomplish nothing in terms of solving problems such as income and employment, labor scarcity, and tenure insecurity that are closely related to the inability of settlers to establish themselves permanently in an area. At present, a settler who asks, "What can I do to earn a living if I don't turn this land into pasture?" is unlikely to receive an answer.

The authors propose that institutional support for Central American countries needs to occur at several levels. First, the agencies responsible for determining and regulating appropriate land use need to be aided in acquiring the skills necessary to assess land use potential. Second, this training needs to go beyond narrowly defined technical training to sensitize personnel to the broader social and economic issues outlined above. At present, there are few people in positions of responsibility who understand that questions such as labor availability and land tenure are as central to successful development as soil properties or climate. The report also urges education of host country governments and national populations about the economic importance of sustainable production. [Author abstract, modified]

Gorse, Jean Eugene and David R. Steeds.
Desertification in the Sahelian and Sudanian Zones of West Africa.
The World Bank, Washington, D.C.
World Bank Technical Paper No. 61.
ISBN 0-8213-0897-1
1987, 62 p.

Key words: Desertification/ /Traditional production systems/ /Natural resources management/ /Indigenous peoples/ /Agricultural policy/ /Land use/ /CILSS/ /World Bank/ /Sahelian-Sudanian zones/ /West Africa

In this World Bank technical paper, Gorse and Steeds review the desertification problem in the Sahelian and Sudanian zones of West Africa, describe traditional production systems and pressures upon them, review past development activities, and present elements of a strategy for better resource management. Finally, they suggest implications for action by CILSS, governments, financiers, and the Bank group in particular. The authors also include a number of statistical appendices on land distribution, soil, population distribution, as well as carrying capacities of natural forest cover, traditional livestock practices, and traditional rainfed cropping practices.

The authors present the view that desertification in the Sahelian and Sudanian zones is the result of pressures both human (increased population) and climatic (variable rainfall and long-term changes in climate). The traditional production systems have increasingly been disrupted, above all by rapid population growth; other pressures include changing social institutions, centralized political authority and urban-biased economic policies.

The report points out that past development efforts in the region have largely focused on promoting productivity improvements in a single sector--crops or livestock or forestry--without paying much attention to the contexts in which traditional production systems developed.

Three traditional production systems exist in the Sahelian and Sudanian zones: (1) agrosylvicultural; (2) agrosylvopastoral; and (3) sylvopastoral. The various ethnic and indigenous peoples who utilize these production systems are discussed in Section II.

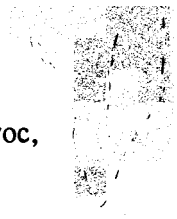
In order to address the desertification problems, the authors believe that certain elements of a strategy are clear. In general, the design approach should be holistic, based on probable instead of average outcomes and based on popular participation. Actions should be determined on the basis of the ratio of actual population to carrying capacity in any given area. A key element in anti-desertification strategy must be to encourage resettlement from the Sahelian and Sudanian zone into the Sudanian-Guinean zone.

Research should be focused on more drought-resistant, high-yielding millet and sorghum, and on more fast-growing drought-resistant multipurpose tree/shrub/bush species. Research of a multi-disciplinary nature and training should focus on site-specific anti-desertification action programs. The authors suggest that for this relatively new work, an agrosylvopastoral unit and a forestry unit with regional mandates should be set up in the area.

The authors feel that the policy environment can be improved, but not as much as often supposed. The main area for improvement is legal, where present land law does not sufficiently promote conservation.

In their implications for action on the part of CILSS, governments, financiers and the World Bank, the authors provide a number of detailed suggestions. They particularly emphasize that desertification has not only demographic, social, technical, and economic dimensions, but it also has a political dimension. Since solutions will have to be sought principally by a participatory approach to better resource management, this will require the political will to: (1) delegate authority from central government to local decision-making bodies, and (2) change laws, regulations, policies and prices to increase the incentives for better resource management.

Schmink, Marianne.
The Socioeconomic Matrix of Deforestation.
University of Florida/Gainesville, Center for Latin American Studies.
Paper presented at the Workshop on Population and Environment, Hacienda Cocoyoc, Morelos, Mexico, January 28-February 1, 1992.
12 p. (plus socioeconomic matrices and bibliographic references)



Key words: Forestry/ /Tropical forestry/ /Deforestation/ /Local users/ /Community participation/ /Indigenous peoples/ /Migration/ /Land tenure/ /Forest policy/ /Gender/ /Household analysis/ /Amazon/ /Brazil/ /Ecuador/ /Peru/ /India

This essay focuses on the ways in which deforestation is defined and explained, beginning by adopting a social definition of deforestation and linking it to the livelihoods of local populations in forested areas. The main objectives of the paper are: (1) to reorient thinking about deforestation to a focus on multiple users, especially the local resident population; (2) to analyze international and national market trends and policy actions, migration, and land tenure as primary elements of the socioeconomic matrix of deforestation; and (3) to emphasize the importance of social dynamics (household and interest group strategies, conflict, and cooperation) that contribute to deforestation.

In terms of the definition of deforestation, Schmink argues that definitions of deforestation are not technical, but rather social. Since forests are always being modified, and even burned, by natural forces as well as human interference, deforestation becomes a problem only when perceived as such by a given society. The working definition used by Schmink emphasizes degradation of tropical forests to the detriment of their use by local populations who depend on them for a significant portion of their livelihood.

In her discussion of the socioeconomic matrix, Schmink follows the approach adopted by Blaikie and Brookfield (1987:3), focusing on the intersection between, on one hand, the strategies of particular forest managers, and on the other hand, the changing social, political and economic circumstances, or matrix, that frames their behavior.

The initial focus of this approach is on the individuals or small groups who make management decisions about use of forests in a particular local site. There are three key aspects to the approach: focus on multiple users and their interactions, contextual analysis at different levels of social structure, and attention to historical dynamics. What is unique about Schmink's approach is the focus on the social dynamics that can either accelerate or retard pressures for deforestation. There are two sources of indeterminancy: one is the interaction over time between different social groups occupying a forest area, and the other is the modification of the socioeconomic matrix through historical change.

The essay presents two case studies of deforestation, the first in Amazonia (based on information from Brazil, Peru, and Ecuador), and the second in India. The content of each level of analysis (global, national, local/regional, or household/community) varied in each case, but Schmink believes that theoretically it would be possible to review all the literature on deforestation and come up with a synthesis of macro-level scenarios leading to deforestation.

In the case of Latin America, Schmink shows that most conflicts took place between different social groups, with the state serving as mediator. The state was not neutral, however. In most cases, state mediation favored elite classes over the interests of relatively powerless local populations whose claims threatened to impede the government's development plans. In India, forest conflicts took place between local villagers and state agencies, allied with the logging industry, who sought to exploit local forests for tax revenues and profits. Resistance movements emerged among rural people who had little alternative but to defend their livelihood.

Schmink states that the Indian example has some elements in common with other Asian cases. The imposition of colonial land tenure concepts and institutions at the turn of the century caused the deterioration of the communal management that villages previously had practiced. In long-settled areas, direct state intervention led to grassroots resistance from ethnic minorities. After independence, the same policies were continued with the goal of promoting the national good, even at the expense of local villagers.

The author believes that the Amazonian and Indian cases share structural features in terms of policies. In both cases, policies to encourage large-scale logging operations, cattle ranching, and export agriculture were fostered at the expense of under-valued natural forest resources. These goals were to be achieved, if necessary, at the expense of local populations. The two cases also demonstrate similar strength of resistance by local movements.

In terms of household analysis, the author found that in the Amazonian case, household-level decisions about resource use and deforestation were linked to access to land for subsistence and to other resources. Most households had only uncertain access to land, which contributed to their instability. Complex internal migration patterns also tended to separate families for long periods. When men migrated, wives were often left with the care of the family's property and livelihood. In the case of India, communal village forests usually were entrusted to the *panchayats* that consisted of higher status village men who dominated decision-making. Households competed amongst themselves for access to common property resources. Women were the main subsistence providers in some regions, especially when men migrated out for wage work. They were also active participants in resistance such as the Chikpo movement, which led to disputes between women and men. (Chikpo, in which people hug trees to keep them from being cut down, epitomizes the non-violent grassroots environmentalism that stems from local peoples' efforts to defend their source of livelihood).

In conclusion, Schmink suggests that future research should focus on the social dynamics of local-level interactions related to deforestation, where very little information currently exists. The remainder of the report includes charts providing socioeconomic matrices of deforestation from the various contexts (household/community, regional/local, national, and global) in the case of India and the Amazon.

Schoonmaker Freudenberger, Karen.
Mbegué: The Disingenuous Destruction of a Sahelian Forest.
International Institute for Environment and Development (IIED), London, England.
Dryland Networks Programme - Issues Paper No. 29.
(Originally appeared in *Development Anthropology Network*, Vol. 9, No. 2, Fall 1991, published by the Institute for Development Anthropology, Binghamton, New York).
September 1991, 28 p.

Key words: Forest management/ /Reserves/ /Pastoral societies/ /Indigenous peoples/ /Commercial agriculture/ /Sahel/ /Senegal

In the following issues paper, the author explores the history behind the forest of Mbegué of Senegal and discusses the subsequent destruction of the forest for commercial production.

The forest of Mbegué was classified as a reserve in 1936 as part of the colonial policy to limit the expansion of peanut culture in areas where it posed the greatest ecological peril. In 1949, a borehole was sunk in the middle of the forest to serve the pastoral populations. In 1952, the classification of the forest was changed from "forest reserve" to "sylvo-pastoral zone", meaning that it could be used by pastoralists for grazing and planting crops for their own consumption but could not be used for commercial agricultural activity. The forest has for forty years played a central role in pastoralist strategies in northern Senegal, and has been used since 1949 primarily by the NduruunaaBe FulBe faction of the JeerinkooBe, numbering some 6,000 people. In 1991, the government established a "contract to cultivate" with the Khalifa-General of the Mourides, giving the brotherhood permission to put 45,000 hectares of the 73,000 hectare sylvo-pastoral reserve into commercial production. At the end of April 1991, the Khalifa called on his followers to clear the 45,000 hectares. The author indicates that the Mbegué was a remarkably rich and diverse forest which from all evidence was razed following no plan, and without wind or water erosion prevention measures put in place. Most of the FulBe have taken refuge in the eastern part of the reserve, 28,000 hectares of which have at least for the moment been maintained for sylvo-pastoral use. This area represents not only a small fraction of the forest previously occupied, but it is also inferior from the pastoralists' perspective. The FulBe anticipate major conflicts in the agricultural seasons to come when their animals will seek old ponds and pastures now lush with peanuts.

The author emphasizes that the environmental implications of the transition from an extensive, semi-nomadic agro-pastoral production system to a sedentary agricultural production system are extremely worrisome in the marginal Sahelian belt. The Mourides, having mined and discarded lands more appropriate for agriculture with their extractive agricultural practices, continue to push men and machines into increasingly marginal and fragile environments.

In terms of donor and public response to the destruction of the forest, Schoonmaker Freudenberger states that USAID did not react negatively to the actions. The author cites the support of Senegal to the allies in the Gulf war as one possible reason for the U.S. lack of criticism against the Diouf government. The World Bank, in contrast, has been notably more outspoken and has criticized the government action in strong terms. The author also characterizes NGO organizations as

being oddly silent on the issue of Mbegué. There has been no organized protest nor systematic attempt to respond to the needs of displaced pastoralist populations.

The author proposes a number of actions, including the involvement of international and local NGOs to assist agro-pastoral populations to understand their legal rights and to organize to pursue those rights without recriminations from more powerful interests. Academics and development analysts must continue to document changes in both social and ecological systems. Finally, international donors may be the only institutions capable of providing a counter-weight to Mouride influence on issues like Mbegué.