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**Whither the People? Demographic, Tenurial, and
Agricultural Aspects of the Tropical Forestry Action Plan**

Owen J. Lynch

Center for International Development and Environment
World Resources Institute
1709 New York Avenue, NW, Suite 700
Washington, DC 20006

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Owen J. Lynch, Consultant
World Resources Institute
1709 New York Avenue, NW
Washington, DC 20006 USA

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CONTENTS

Introduction	1
I. Selected TFAP Country Level Assessment.....	3
Demographic Issues in the Three TFAPs.....	3
Land Tenure/Common Property Issues	3
Swidden Agricultural Issues	5
II. Important Issues for the TFAP	7
Demography	7
Land Tenure	9
Common (Communal) Property	10
Integral and Non-Integral Swidders.....	12
III. Conclusion and Policy Recommendations for the TFAP.....	15
Notes	17

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O.J.L.

"(S)trategies for reforestation and forest management must involve the millions of people who live within and beside the forests and depend upon them to help satisfy their basic needs." (Tropical Forestry Action Plan, June 1987)

INTRODUCTION

Concern about tropical deforestation, and the array of other social, economic and environmental problems it creates and exacerbates, has led to a variety of responses.¹ One of the most prominent globally has been the ongoing formulation and implementation of the FAO-coordinated Tropical Forestry Action Plan (TFAP).

Since the TFAP was proposed in 1985, the World Resources Institute has played an active role in its development.² WRI is committed to making the TFAP an effective and equitable vehicle for arresting deforestation and promoting sustainable development. This paper, one indicator of that commitment, focuses on the hundreds of millions of people living in or directly dependent on tropical forests.

Section I contains an analysis of how the national TFAPs of Papua New Guinea (PNG), the Philippines, and Tanzania address demographic, tenurial and agricultural issues that affect forest dwellers or people directly dependent on tropical forests. These plans are highlighted because they reflect a greater awareness of the presence, needs

and potentials of forest dwellers than do the TFAPs of many other countries.

Section II explains why demographic, tenurial and agricultural issues are central to efforts to arrest deforestation. The section is comprised of four parts. In part one, the need for accurate demographic and social studies that provide information on the number, location, and general characteristics of forest dwellers is described. In part two, national forestry laws and policies that all too often support expansive claims of public ownership but largely ignore the tenurial rights and claims of tropical forest dwellers are critiqued. In part three, the nature and potential of customary, local, common (communal) property systems of resource management are described and analyzed. In part four, the history of swidden agriculture and the important differences between integral and non-integral swiddeners are discussed.

Section III contains policy recommendations that could help arrest deforestation and, therefore, merit consideration in the future formulation of the TFAP on national and international levels.³

I.

SELECTED TFAP COUNTRY LEVEL ASSESSMENT

Demographic Issues in the Three TFAPs

Section 2 of the TFAP Guidelines calls attention to the importance of involving forest dwellers and their representatives in the promulgation and implementation of effective strategies for arresting deforestation.⁴ Before this can happen, policy-makers need to know of the presence, needs and potentials of people living in forest zones. Step one is taking an inventory—or at least coming up with an accurate demographic estimate—of forest dwellers.

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FAO considers inventories of non-human forest resources “a basic prerequisite” of any plan for commercially harvesting forest resources.⁵ The same principle is not applied, however, to human resources in the forest. Although all three of the national TFAPs analyzed here recognize that there

are gaps in existing data bases concerning forest resources, none of them reflects significant knowledge and understanding of forest dwellers. The Philippine TFAP is the only one that contains even an estimate of the number of people living in the forest zone.⁶ None of the TFAPs calls for demographic surveys in the forest zones or other complementary cultural or socio-economic investigation.

Land Tenure/Common Property Issues in the Three TFAPs

Annex 3 of the TFAP Guidelines contains “general terms of reference” for country-level TFAP missions. It calls for the analysis of trends and prospects pertaining to land use policies, the ownership of heretofore “public” forest resources, and incentives for tree planting and private forestry initiatives. Annex 3 likewise calls for an analysis of “land tenure and land use rights ... and the implications of present land ownership systems to forestry.”

The Papuan, Philippine and Tanzanian TFAPs all comply with this provision, albeit in varying degrees. In some respects, therefore, some countries have at least begun to address the tenurial problems and resource-management potentials of tropical forest dwellers.

Nevertheless, although recent rhetoric provides some cause for encouragement, country level TFAPs must be read as a whole. The Philippine TFAP demonstrates why. This plan refers repeatedly to the need for increased participation of local communities in the management of forest resources. It calls for a consultative dialogue to resolve issues concerning "claims to ancestral lands" and for sufficient resources to delineate ancestral-domain perimeters.⁷ It even recommends that "The DENR [Department of Environment and Natural Resources] should consider suspending TLAs [Timber License Agreements] or other activities operating on lands seriously claimed by ethnic minorities."⁸

At the same time, the Philippine TFAP reflects the traditional perspectives of foresters, concessionaires and government bureaucrats who, despite the nation's forest crisis,⁹ still benefit in the short term from the rapid overexploitation of a potentially renewable resource. Indeed, the Philippine TFAP calls for continuation of the current concession system, including ongoing timber exportation, and it implies customary property rights will be recognized only in forest areas not covered by TLAs.¹⁰ Many ancestral domains, however, are located within timber license agreements and, under the existing bureaucratic system for allocating legal rights, other ancestral domains may likewise be included in future TLAs.¹¹

The Papuan plan is more promising insofar as peoples' rights and participation are concerned. It acknowledges that 98 percent of all land in the country is covered by customary property rights.¹² It states that the "key to successful negotiation of rights and interests is legal identification of landowners, and registration of their interests under custom law."¹³ It also calls for the delineation of customary holdings, the documentation and registration of customary land rights, and the determination of what those rights entail.¹⁴

Despite these statements, taken as a whole the PNG plan gives insufficient attention to customary property rights. Indeed, even though they "own" most of the forest, customary rights

holders had little involvement in the TFAP's formulation. Instead, the plan states, "It is beyond the scope of this review to deal substantively with [customary ownership] issues".¹⁵ As a result, procedures for securing customary property rights in forest areas are not defined, even in general terms, in the PNG plan. Specific customary rights apparently are documentarily recognized only in leases on alienated land. As for the registration of customary ownership rights, the TFAP acknowledges that according to "current trends, registration ... is a long way off."¹⁶

Ambiguity about the nature and extent of customary property rights in PNG contributes to misunderstandings between the government and customary "landowners." The most important misunderstanding concerns the arbitrary issuance of timber licenses by customary landowners who do not consult the Papuan government or other co-owners before the licenses are issued or their proceeds are disbursed. These licenses also make no provision for environmental safeguards or long range planning. As such, they underscore the need for a cooperative and mutually beneficial partnership between national governments and forest communities.

Unlike in Papua New Guinea, misunderstandings between holders of customary property rights and the Tanzanian government reflect the general patterns in the Philippines and other tropical forest countries. The Tanzanian state claims public ownership of all forest land, reserves the exclusive right to make decisions about land use, and has theoretically invalidated all customary property rights. Nevertheless, as in many countries, the Tanzanian TFAP acknowledges that "villagers still appear to have a strong feeling of security under the traditional tenurial system."¹⁷

The Tanzanian TFAP admits that national land-tenure laws are "fragmentary and incomplete."¹⁸ In another section, however, it overlooks customary tenure systems and states that "Tenurial rights have to be established for all land being used."¹⁹ It proposes to do this by creating perpetual individual tenures and reorienting current forest policies so that they

8

emphasize estate management and promote forestry initiatives on private land.²⁰

The Tanzanian government is now delineating village boundaries, and current legislation has empowered it to establish 13 million hectares of forest reservations on "public" land. The relationship between these forest reserves and rural villages is not made clear in the TFAP. In view of the government's expansive claims of state ownership, however, it seems likely that at least some villages will be designated as being on "public" forest land.²¹ This, in turn, is likely to further undermine customary property rights within forest communities.

Swidden Agricultural Issues in the Three TFAPs

Many, if not most, forest dwellers survive by subsistence farming, especially swidden agriculture, which is also known as shifting cultivation or "slash-and-burn" agriculture. Over

the past three decades, many studies have demonstrated that in some areas, and among some forest dwellers, swidden farming can be environmentally sustainable.²²

Nevertheless, all three national TFAPs largely neglect issues pertaining to swidden agriculture. This oversight is accompanied by references to the agricultural practices of forest dwellers which are indiscriminately negative. The Tanzanian TFAP, for example, cited unsustainable crop production and overgrazing as the primary causes of forest destruction.²³ A background paper for the Philippine TFAP identified swidden agriculture as the "major cause of large scale degradation and destruction of Philippine forests."²⁴ The Philippine paper also indiscriminately labeled every occupant of the forest-zone as "kainginero," a Hispanicized native word that evokes an image of small farmers who mindlessly burn forest resources.

II.

IMPORTANT ISSUES FOR THE TFAP

The foregoing review of national TFAPs from Papua New Guinea, the Philippines, and Tanzania makes clear that, in current form, the plans reflect only a limited awareness of the presence, needs and potentials of forest dwellers. At the same time, each plan gives some attention to land tenure issues.

The TFAP of Papua New Guinea explicitly recognizes the widespread presence of customary property rights, while the plans of Tanzania and the Philippines at least acknowledge the potential importance of customary rights. (Peru, with one of the largest number of indigenous peoples in Latin America, skirted the issue altogether in its TFAP.)²⁵ Yet, none of the plans contains any short- or long-term strategy for addressing tenurial issues so as to promote afforestation or meet the needs and safeguard the livelihoods of forest dwellers.

This section explains why issues pertaining to demography, land tenure and swidden agriculture are important for the TFAP. It also provides insights and suggestions for addressing these issues in the future formulation of the TFAP nationally and internationally.

Demography

No effort to involve and assist forest dwellers in sustainable development strategies can succeed if policy-makers don't possess an adequate degree

of knowledge and sensitivity about forest dwellers. The urgency of the need to at least learn of the number and location of people living in or directly dependent on the tropical forest is underscored by independent global estimates which range between 200 million to 500 million people.²⁶

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The most densely populated tropical forests are in Africa and South Asia. Some 27 million people are believed to reside in and around the Himalayan forests alone. In insular Southeast Asia, the number of people living in upland forest zones is conservatively estimated to be 30 million.²⁷ (Regional estimates for Africa apparently have yet to be made.)

Despite these huge numbers, there are almost no complete, accurate, and up-to-date country-specific demographic studies of forest-zone populations. Nor do the TFAP Guidelines call for demographic or other related studies.

Without such knowledge, governments lack vital information about where their most remote rural citizens live and how they are surviving. This informational dearth prompts serious doubt about the viability of many current strategies for conserving and sustainably developing forest resources.

Demographic and social studies could provide a broad overview of the whereabouts and general characteristics of the people most directly affected by, and positioned to respond to, tropical deforestation. The information generated would help policy-makers, program designers, and project implementors better understand the full magnitude of population and economic pressures on forest resources. Such information would also enable them to design programs and policies that more adequately respond to local peoples' needs, concerns and potentials.

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The importance of accurate demographic studies has been demonstrated in the Philippines. The Forestry Management Bureau of the Philippine Department of Environment and Natural Resources annually publishes a compilation of forestry statistics. Up to 1986 the compilation included an official estimate of the number of people living within the upland forest zone; that year the estimate was 1.33 million people. An independent researcher using official census data concluded, by contrast, that in 1980 a

credible number was 14.4 million. Considering that the annual growth rate of the forest-zone population is an estimated 2.5 to 2.8 percent, as of 1990 the number of Filipinos living in the forest zone has probably grown to about 18.6 million.²⁸

Regrettably, the independent Philippine study has yet to prompt any measurable change in that country's forest policies and programs. Nevertheless, the Philippine TFAP reflects at least a growing awareness within the government of the need to recognize the presence and potentials of forest dwellers.

Certainly, it is in the government's own interest to know more about forest dwellers and other people dependent on forest resources. The World Bank-sponsored Chico River hydro-electric dam project in the forests of northern Luzon, for example, was ultimately blocked during the late 1970s by forest dwellers who had not been consulted, or considered, by project planners. More recently, a nationwide contract-reforestation project funded by the Asian Development Bank and the Government of Japan is encountering resistance in many upland Philippine communities because the project planners failed to consider the presence and local concerns of most forest dwellers.

Similarly, the Philippine government's Integrated Social Forestry Program cannot, at current levels of funding and staffing (which are justified in large measure by the low estimate), do its job. It can't even process and document tenurial rights within a twelve month period for more than 15,000 qualified citizens, or less than one percent of the credibly estimated forest-zone population.²⁹

In short, most people living or directly dependent on tropical forests—whether indigenous or migrant, peasant or tribal, swiddeners or pastoralists—are politically invisible.³⁰ They have little, if any, influence over the formation and development of state laws and policies that concern their cultures and the natural resources they depend on to live. Yet, the laws and policies promulgated by national government often have devastating effects on the lives of

people living in forest zones, as well as upon the forest resource.³¹

Land Tenure

In most tropical countries, forest land is predominantly state-owned.³² As a result, most forest-zone occupants whose presence is acknowledged are considered, regardless of their length of occupancy, to be squatters on "public," (i.e., state-owned) land.³³ In some countries, as in Indonesia and throughout much of Latin America, squatter status is obscured by legal provisions that theoretically protect undocumented customary rights. But these rights are often ignored within national legal systems which effectively promote expansive claims of public ownership.³⁴

Ironically, by insisting that forest lands are owned by the state, national governments oftentimes encourage in-migration and greater population density.³⁵ After all, "public" land ostensibly belongs to no one in particular but to everyone in general.³⁶ This official ambiguity becomes a magnet that pulls landless farmers onto "public" forest land.

Migrants often make a rational choice when they stake a claim to "public" forest land. Laws and policies in many countries even encourage them to do so.³⁷ Migration frequently provides the easiest and most immediate means to alleviate social and political pressures in densely populated urban and agricultural regions. But in many tropical forest zones, migration undermines efforts to save and sustainably develop the local natural resource base.

Compounding the irony is the largely overlooked fact that in most tropical countries, forestry bureaucracies lack the human, financial, and technical resources needed to manage and protect forests. Grandiose claims of state ownership push these limited bureaucratic capacities to utterly unrealistic limits.³⁸

At the same time, many countries have no procedures by which forest dwellers can acquire official recognition and documentation of their customary property rights. Existing procedures tend to be overly complex, time-consuming, and

expensive.³⁹ Some outsiders, meanwhile, use these procedures to acquire legal rights over forest resources which are already occupied. Making matters worse, in many countries "Rules of land tenure ... confer title to forest lands on parties who 'improve' it by clearing the forest for some other use."⁴⁰

Already beleaguered by accelerating rates of deforestation, many forest dwellers are also thus threatened with arbitrary and state-sanctioned displacement. The threat ripens into eviction, and sometimes even violence, when the boundaries of documented titles or commercial concessions granted to outsiders overlap with pre-existing settlements.⁴¹

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Government policies that promote the tenurial insecurity of forest dwellers largely ignore a fundamental premise of capitalism. The premise is that rational human beings rarely make long-term improvements and sustainably manage their local resource base when they lack assurance that they and their successors will profit from their investments. Security of tenure provides this assurance. As such, security of tenure generally provides an incentive for sustainable resource management, principally by encouraging long-term planning and greater investments of labor and resources.⁴²

The failure of national governments to recognize existing customary property rights, in many instances, undermines this basic incentive to protect the forest. It also keeps indigenous peoples and long-term migrants living on "public" forest land from legally benefiting from

12

commercial exploitation of the local natural resource base. Not surprisingly, the legal and economic marginalization of forest dwellers generates animosity between foresters and forest dwellers.⁴³

Despite these problems, there are some hopeful stirrings. Forest communities in many nations are organizing to resist and prevent environmental degradation,⁴⁴ and some local and national non-government organizations (NGOs), such as the Lima-based COICA, are helping forest dwellers defend their rights and better manage their natural resource bases.⁴⁵ Other NGOs have participated—sometimes with great difficulty and limited success—in a number of TFAP country exercises.⁴⁶

On the international level there is growing recognition that government forest bureaucracies in many tropical nations lack the capacity to manage “public” forest estates that are unreasonably large yet generally inhabited. This development coincides with growing appreciation of the relationship between land tenure and sustainable resource use.⁴⁷ In the words of two land-tenure specialists:

The development community has gradually come to realize that it will not be successful in addressing resource degradation at the local level so long as the very nature of property and authority systems over natural resources are seriously misunderstood in policy formulation and the design of donor assistance programs.⁴⁸

One sign of hope is that the importance of land tenure is being recognized by some international development agencies and specialists.⁴⁹ On the project level, a recently negotiated US\$25 million loan agreement designed to stabilize critical watersheds on the island of Mindoro obligates the Philippine government to recognize, survey, and document the tenurial rights of forest dwellers within the project area.⁵⁰

Still, these recent promising developments represent isolated examples. Most forestry policies and projects continue to overlook land tenure issues of concern to forest dwellers. The only exception can be found in some social

forestry programs. But even these tenurial components are often underfunded and poorly conceived and implemented.

The primary shortcoming may be the failure of most social-forestry-tenure instruments to provide long-term, indefinite tenure guarantees. Usufruct certificates and leases with definitive time frames are the norm⁵¹ and, besides being usually subject to revocation, they undermine long-term investment incentives as the expiration date nears.⁵²

Common (Communal) Property

Customary property rights, by definition, originate locally. Many are part of a common (communal) property management system, a system that usually operates within the ancestral territories of indigenous peoples.⁵³

Common property does not refer to an open access system of resource management. Nor does it refer to an allocation system in which all members of a community share equal rights to all community resources.⁵⁴ The distinguishing characteristic of a common property management system is that when its participants legally allocate and enforce rights to natural resources, they rely on themselves and not on the national government.⁵⁵ As a political scientist might put it, a common property management system draws its primary legitimacy from within the community, and not from the nation-state. This is true whether the system functions on private or public land. As with national laws, however, law and practice often diverge.

Various types of rights exist within a common property system. Some rights may concern the inherited property of a kinship group or encompass the ancestral domain to which a larger social unit asserts political and economic control. They may be held by an individual, a nuclear or extended family, a household, a clan, a neighborhood, or the community as a whole. Whatever their source, and regardless of who holds them, rights within a common property resource management system often overlap in time and space.

C. Ford Runge, an agricultural economist at the University of Minnesota who has studied several common property management systems, has concluded that compared with individual tenure, most common property systems tend to be 1) less costly to maintain and enforce; 2) better adapted to local conditions; 3) better able to respond to unpredictable natural events; and, 4) a hedge against individual failure. In some communities, therefore, local systems for allocating (oftentimes overlapping) rights to natural resources may be not only more equitable and environmentally astute; they may also allow for greater economic productivity.⁵⁶

Recognizing existing common property management systems—primarily by recognizing ancestral-domain rights and delineating their perimeters⁵⁷—has great potential in some forest-zones for promoting sustainable development.⁵⁸ It also has sanction in international law.⁵⁹

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Recognition would discourage migration and stabilize population density in forest regions where common property systems are operative. It would also put prospective migrants and commercial forest industries on notice that some forest lands are not public (thus helping long-established local communities in their ongoing efforts to resist migration and illegal extraction activities). Recognition would likewise relieve pressure on integral swiddeners to shorten their fallow periods and give them time to make the transition to more intensive and sedentary agriculture practices.

Formal delineation of common property perimeters has other advantages. It would mitigate the need for national governments to conduct more expensive and culturally disruptive individual surveys. And it would allow governments to redirect prospective migrants to other areas suitable for intensive but sustainable land use.

Although not expressed in a country-level TFAP, in the Philippines and much of Amazonia, a counter argument is being developed within the conventional forestry sector. Equity considerations are being invoked on behalf of landless migrants and their interests are being pitted against those of forest dwellers, especially indigenous peoples. In other words, an argument is being made that recognizing and protecting customary property rights will deprive landless migrants of access to land-based resources.⁶⁰

This line of reasoning is short-sighted at best. It is also ironic in view of the chronic marginalization of forest dwellers, whether indigenous or migrant. Nevertheless, the argument appears to gain credence when it is tied to the claim that recognizing long-term customary property rights in densely populated countries would legally enable some communities to enjoy a low population/land area ratio while other people are landless.

Recognizing the territorial rights of indigenous peoples and long-term migrants would in the short term, of course, limit the options of some prospective migrants, as well as forest concessionaires. A more healthy forest cover and lower rates of erosion, siltation and sedimentation, however, will benefit the entire nation, including—at least in the long term—landless migrants.

It is ecologically inappropriate, furthermore, to provide the same rights of occupancy to all land when different areas have very different capacities to maintain permanent cultivation. The land-use practices of migrant farmers should be accommodated by land reform in more fertile lowland areas which are suited to their preferred forms of sedentary and often irrigated land use.

Integral and Non-Integral Swidders

Government policies and perspectives concerning swidden agriculture exacerbate problems related to insecurity of tenure and the recognition of common property rights. They provide another example of the overly simplistic view that most governments have of forest-zone occupants.⁶¹

Swidden-making may be the oldest form of agriculture in the world. (The word "swidden" has its origins in northern England and means "burned clearing."⁶²) Although great variation can be found among swidden agriculturalists, some generalizations can also be made.

The most important generalizations concern the differences between integral and non-integral swidders. Integral swidders practice rotational agriculture by cutting and burning (usually secondary) forest cover and using the ash to fertilize the cleared field. An integral swiddener often intercroops a variety of plants and after one, two or, perhaps, three harvests stops planting annuals and, thereby, leaves the field in fallow. The fallow period allows the forest and topsoil to regenerate before the annual planting cycle begins anew.

A growing body of anthropological literature demonstrates that many integral swidders possess local knowledge bases which are well suited for sustainably managing local resource bases.⁶³ Studies also demonstrate that, at least in some instances, integral swidders contribute more in the long run to a nation's gross national product, and distribute their produce more equitably, than do capital-intensive extraction enterprises.⁶⁴ An additional argument can be made that swidden farming is the only type of agricultural activity suited to the fragile soil found in many tropical forests.⁶⁵

Most non-integral swidders, or "shifted cultivators," by contrast, are migrant farmers who lack intimate knowledge of local weather and soil configurations. Few know or care about the ecological fragility of tropical forests, especially the nutrient-holding capacity and delicate nature of the topsoil. Consequently, few of them leave

land in fallow or recognize the rights of those whose land is currently in fallow. Instead, most try to establish fixed farm sites, sometimes in fallowed fields. These sites are then abandoned after parching and erosion makes the land unproductive, in some instances permanently.

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Most governments and forestry policies still fail even to distinguish between integral and non-integral swidders. Instead, both groups are officially lumped together and indiscriminately blamed for the major share of tropical deforestation.⁶⁶ This is not new. Swidden agriculture has long been officially excoriated. Dutch colonists in Indonesia referred to swidden agriculture as a "robber economy" and most other colonial regimes took the same dim view.⁶⁷

Swidden agriculture was not widely known in temperate nations and it was unsettling for colonial officials to see unauthorized fires being intentionally set within forest lands ostensibly owned by the colonial regimes. In response, colonial governments made swidden agriculture illegal. After political independence was attained in the mid-twentieth century, indigenous political and economic elites in countries with tropical forests retained the anti-swidden laws, as well as many other colonial forest laws and policies.

Illegal or not, millions of forest-zone occupants continue to practice swidden agriculture. For many, survival is at stake. Nevertheless, naturally increasing populations, the ever growing numbers of migrants, and governmental propensity to issue forest concessions over large tracts of inhabited land are disrupting the agricultural practices of many integral swidders. As a result, many integral swidders are being forced to shorten their fallow periods or to turn precipitously to

modern agriculture practices that leave them vulnerable to fluctuations in the availability and cost of agricultural inputs. These developments both contribute to environmental degradation and

undermine local knowledge bases which have been developed over many generations and provide for the sustainable local management of forest resources.

16

III.

CONCLUSION AND POLICY RECOMMENDATIONS FOR THE TFAP

Many governments continue to ignore the presence, needs and potentials of tropical forest dwellers. Their actions raise serious doubts about the commitment of national governments to some of the basic goals of the TFAP. They also preclude equitable, economical and environmentally sustainable responses to the ever more serious problems of deforestation.

There are some hopeful developments. But much more must be done. The well being of hundreds of millions of people living in or directly dependent on tropical forests—and perhaps all of humanity—is at risk.

The following recommendations are a response to the current shortcomings. They are intended to promote the successful implementation of country-level TFAPs. Indeed, these recommendations should be incorporated in some form in every national TFAP, or their absence fully explained.

1. Efforts should be undertaken to promote greater awareness and understanding of forest dwellers. In keeping with these efforts, national TFAPs should call for independent and nation-wide demographic and land use studies of forest-zone populations, as well as socio-cultural and

socio-economic studies. These studies should include a disaggregation of the population according to which resource bases and land use practices they use.

2. Customary property rights should be recognized and procedures—based on close consultation with concerned communities—should be established for delineating the perimeters of common property resource management systems.
3. Forest concessions and other development projects within or overlapping with indigenous territories and long-term migrant settlements should not be granted or established without authorization from the appropriate government agency and the community or communities concerned.
4. An equitable portion of all revenues generated by forest concessions and other development projects within or overlapping with indigenous territories or long-term migrant settlements should be paid in a culturally appropriate and fair way to all members of the community or communities concerned.
5. State expropriation of long-term customary property rights, as with other

state-recognized property rights, should only occur when it is clearly in the national (as distinct from the conventional forestry sector) interest, and only after rights holders have been accorded due process and have received just compensation.⁶⁸

6. Recent migrants in "public" forest zones should be provided meaningful opportunities for acquiring security of tenure in areas (outside of indigenous territories and long-term migrant

settlements) that are capable of supporting sustainable agriculture.

7. Laws which indiscriminately proscribe swidden agriculture within indigenous territories and long-term migrant settlements should be repealed and replaced by legislation or rural zoning regulations that require forest dwellers to fallow land for a specified, and locally appropriate, period of time.

Owen J. Lynch is a consultant with the World Resources Institute and a member of the board of directors of Survival International USA, a Washington, DC, NGO which promotes the human rights of indigenous and tribal peoples throughout the world. During most of the 1980s he worked as a Visiting Professor at the University of the Philippines College of Law, where he taught, researched and published about indigenous rights, legal history and natural resource laws. Mr. Lynch has law degrees from the Catholic University of America and Yale University. He currently is helping WRI develop a project on tenure and natural resources management policies.

NOTES

1. As of 1989, the steadily shrinking tropical forests covered an estimated 1.2 billion hectares, or about nine percent of the Earth's land surface. *World Resources 1988-1989* (Washington, DC, World Resources Institute, 1989) pp. 70-71. The annual—and still growing—rate of tropical deforestation may be as high as 20.4 million hectares. *World Resources 1990-1991*, pp. 101-102. This estimate, published in June 1990, nearly doubled what had been “Until recently the most authoritative estimate of annual deforestation in the tropics ... 11.4 million hectares, based on a 1980 FAO assessment of tropical forestry research, literature, and surveys.”

2. See, e.g., Robert Winterbottom, *Taking Stock: The Tropical Forestry Action Plan After Five Years* (Washington, DC, World Resources Institute, 1990); Elizabeth Halpin, *Indigenous Peoples and the Tropical Forestry Action Plan* (World Resources Institute, 1990); Cheryl Cort, *Voices from the Margin: Non-Governmental Participation in the Tropical Forestry Action Plan* (World Resources Institute, 1990). See also *Tropical Forests: A Call for Action* (1985) (Report of an international task force convened by the World Resources Institute, the World Bank and the United Nations Development Programme).

3. For additional review and analysis see, e.g., Marcus Colchester and Larry Lohmann, *The Tropical Forestry Action Plan: What Progress?* (London, World Rainforest Movement, *The Ecologist* and Friends of the Earth, 1990); *The Tropical Forestry Action Plan: A Critique* (Friends of the Earth/Environmental Policy Institute/Oceanic Society, 1989).

4. Sub-section 2.6 identifies indigenous peoples' organizations and local and national NGOs as important potential contributors in the formulation of national TFAPs. (No mention is made of migrants or migrant organizations.) More specifically, the sub-section declares that NGOs

“*must be* deliberately and effectively involved.” Indigenous representatives, by contrast, “*should be* involved” and their “natural resource management practices and traditional ecological knowledge ... *should be* documented.” (Emphasis supplied.) Whether or not inadvertent, the difference in wording is potentially significant. “Must” refers to an action which is required. “Should” refers to a desired, preferred or likely action which may, or may not, be required.

5. Food and Agriculture Organization, *Tropical Forestry Action Plan* (Rome, Committee on Forest Development in the Tropics, 1985), p. 38.

6. The Philippine estimate of 18 million was prompted by the independent demographic survey. See Ma. Concepcion Cruz, *Population Pressure and Migration: Implications for Upland Development* (University of the Philippines at Los Banos Center for Policy and Development Studies working paper Nos. 86-06 and 86-07, 1986). The estimate, however, was not included in the TFAP. Rather it was mentioned in a background paper which labeled all 18 million as swiddeners and the major cause of forest destruction. The background paper also cited an estimate by a senior forestry official which claims that only six to eight million people actually reside within the forest zone. See Section 3.1.1 of the Philippine TFAP Part 1. Background, Issues, Options, Recommendations.

For further insights into the Philippine estimate see the discussion on demography in Part II.

7. Philippine TFAP 1.3.7.1 and 2. See also 1.2.7, 1.3.2.5 and 1.3.3.8.

8. The Philippine TFAP failed to define what the reference to “serious” is supposed to mean.

9. At current rates of deforestation, the Philippines will have lost most of its closed forest cover within the next ten years.

10. Philippine TFAP 1.9, especially 1.9.3.

11. The phrase "ancestral domain" is used in this paper to refer to land, forest and mineral resources located within the traditional territories of indigenous occupants. The phrase was first used, in lieu of the more limited reference to "ancestral land," by indigenous peoples on the Gran Cordillera in northern Luzon, the Philippines during the mid-1980s and quickly spread throughout the country.

12. PNG TFAP 6.31. For additional analysis see *Papua New Guinea, The Forestry Sector: A Tropical Forestry Action Plan Review* (Washington, DC, World Bank, 1990); *World Bank Tropical Forestry Action Plan for Papua New Guinea: A Critique* (Lismore, Australia, Rainforest Information Centre, 1990).

13. PNG TFAP 5.10.

14. PNG TFAP 6.34. See also 5.10 to 5.13.

15. 6.34.

16. PNG TFAP 6.34(a). The plan noted that "The Department of Lands and Physical Planning supports in principle the introduction of customary land registration on a Provincial basis." This is already underway in one province, and possibly three. PNG TFAP 6.34(b). It was unclear from the plan whether registration applies to individual and group holdings.

17. Tanzanian TFAP 2.2.4. The Cameroon TFAP noted similar difficulties which occurred when government agencies tried to centralize management of forest lands without first replacing traditional, community level management.

18. Tanzanian TFAP 6.1.4.

19. Tanzanian TFAP 3.3 (ii).

20. Tanzanian TFAP 6.1.4 and 6.2.1.

21. See, e.g., Tanzanian TFAP 2.11.1 which notes that some villages fall within the purview of the Forest Ordinance of 1957. This same section makes the "top-down" observation that "The future of nomadic pastoralists still remains to be mapped out in concrete terms which will influence the utilization pressure of vast areas of forest and woodlands."

22. This insight was first published by the FAO during 1957 in a book written by Harold Conklin, *Hanunoo Agriculture: A Report on an Integral System of Shifting Cultivation in the Philippines*.

For more recent insights see, e.g., Marcus Colchester, *Shifting Cultivation: Rational Resource Use or Robber Economy?* (1990) (preliminary draft prepared for the Third World Network and the APPEN conference on "The Destruction of Asian Agriculture"); Janis B. Alcorn, "Indigenous Agroforestry Strategies Meeting Farmers' Needs," *Alternatives to Deforestation: Steps Toward Sustainable Use of the Amazon Rain Forest*, Anthony Anderson, ed. (New York, Columbia University Press, 1990); Julie Denslow and Christine Padoch, eds., *People of the Tropical Rain Forest*, pp. 218-223 (Berkeley, University of California Press, 1988); S.C. Chin, "Do Shifting Cultivators Deforest?" *Forest Resources in the Third World* (Penang, Sahabat Alam Malaysia, 1987); Jaganath Pathy, "Shifting Cultivators of India: Bearing the Brunt of Development" *Forest Resources in the Third World*; Evelyn Hong, "Forest Destruction and the Plight of Sarawak's Natives," *Forest Resources in the Third World*; Gerald Marten, *Traditional Agriculture in Southeast Asia: A Human Ecology Perspective* (1986); Michael Dove, *Swidden Agriculture in Indonesia: The Subsistence Strategies of the Kalimantan Kantu'* (Berlin, Mouton Press, 1985); Paul Richards, *Indigenous Agricultural Revolution: Ecology and Food Production in West Africa* (London, Hutchinson, 1985); *Changes in Shifting Cultivation in Africa: Seven Case Studies* (Rome, FAO, 1985) (Ghana, Ivory Coast, Madagascar, Senegal, Sierra Leone and Tanzania); *Swidden Cultivation in Asia* (Bangkok, UNESCO Regional Office, 3 vols., 1983); Michael Dove, "Swidden Agriculture and the Political Economy of Ignorance," *Agroforestry Systems*, Vol. 1 (1983); Harold Olafson, ed., *Adaptive Strategies and Change in Philippine Swidden-based Societies* (Los Banos, Forestry Research Institute, 1981); Terry Grandstaff, *Shifting Cultivation in Northern Thailand* (Tokyo, United Nations University, 1980); Joseph Weinstock, *Land Tenure Practices of the Swidden Cultivators of Borneo* (Master's

Thesis, Cornell University, 1979); Peter Kunstadter, E.C. Chapman and Sanga Sabhasri, *Farmers in the Forest: Economic Development and Marginal Agriculture in Northern Thailand* (Honolulu, University of Hawaii, 1978); J.E. Spencer, *Shifting Cultivation in Southeast Asia* (Berkeley, University of California, 1966).

For a recent essay on the dangers of over-romanticizing indigenous peoples see Kent H. Redford, "The Ecologically Noble Savage," *Orion Nature Quarterly*, Vol. 9 (1990).

23. Tanzanian TFAP 3.1.

24. Section 3.1.1 of the Philippine TFAP Part 1. Background, Issues, Options, Recommendations.

25. The Cameroon TFAP concluded that local communities should be more systemically associated with the management of forest lands. It made an ambiguous call for the "promotion of community forestry activities" and increased involvement of forest dwellers in harvesting forest products and fauna. The Peruvian plan was no less ambiguous. It called for forest projects to "address fundamental local social issues."

26. John Spears and Edward S. Ayensu estimated five years ago that "there are some 200 million people living in tropical forests." "Resources, Development, and the New Century: Forestry," *The Global Possible: Resources, Development and the New Century*, p. 304, Robert Repetto, ed. (New Haven, Yale University Press, 1985). Norman Myers estimated that "forest land farmers" and their progeny number between 300 to 500 million. *Deforestation Rates in Tropical Forests and Their Climatic Implications*, p. 68 (London, Friends of the Earth, 1989). Myers added that the larger figure "may well be an underestimate."

27. *Toward an Environmental and Natural Resource Management Strategy for ANE Countries in the 1990s* (World Resources Institute, 1990), p. 26. The WRI estimate is conservative. Nearly 19 million people already reside within the Philippine upland forest zone. Indonesia, with a population of 170 million people, claims over 70 percent of the total land

mass as "public" forest. A credible estimate of the number of people within the Indonesian forest zone would be over 35 million. In Malaysia, the number would be above four million.

28. See Cruz, *Population Pressures and Migration* at note 6, *supra*. Another independent demographic study of forest dwellers is currently underway in Thailand and is being managed by the World Bank. Its impact on policy formation and program design and implementation remains to be seen.

29. At the same time, more than 45,000 people are estimated to be migrating into the forest zone each year. See, e.g., Owen Lynch and Kirk Talbott, "Legal Responses to the Philippine Deforestation Crises," *New York University Journal of International Law and Politics*, Vol. 20, pp. 684, 688 (1988).

30. See, e.g., Robert Winterbottom, *Taking Stock: The Tropical Forestry Action Plan After Five Years* (Appendix 4 referring to the "invisible" people of Ecuador); Owen J. Lynch, "Invisible Filipinos: Indigenous and Migrant Citizens within the 'Public' Domain," *Philippine Law Register*, Vol. 5 (1984).

31. Examples of the political and legal marginalization of indigenous forest dwellers abound and have been documented by a variety of domestic and international NGOs. The latter group includes organizations such as Survival International, Cultural Survival, the Minority Rights Group, the International Working Group on Indigenous Affairs (IWGIA), and the Anthropology Research Center. In addition, the United Nation Commission on Human Rights has established a Working Group on Indigenous Peoples which meets annually to discuss and document problems.

For indigenous peoples' perspectives see Roger Moody, ed., *The Indigenous Voice: Vision and Realities* (Copenhagen, IWGIA, 1988); Ismaelillo and Robin Wright, eds., *Native People in Struggle: Cases from the Fourth Russell Tribunal and Other International Forums* (Boston, Anthropology Resource Center, 1982). See also, e.g., Elizabeth Halpin, *Indigenous Peoples and*

the Tropical Forestry Action Plan (World Resources Institute, 1990); Walter Fernandes, Geeta Menon and Philip Viegas, *Forests, Environment and Tribal Economy: Deforestation, Impoverishment and Marginalisation in Orissa* (New Delhi, Indian Social Institute, 1988); Robert Goodland, *Tribal Peoples and Economic Development: Human Ecologic Considerations* (Washington, DC, World Bank, 1982); Sheldon Davis, *Victims of the Miracle* (New York, Cambridge University Press, 1977); John Bodley, *Victims of Progress* (Menlo Park, Cummings, 1976).

32. An FAO publication in 1982 noted that more than 80 percent of all forest areas in Peru, Bolivia, Brazil, Venezuela, the Dominican Republic, Panama, Belize, Jamaica, and Trinidad and Tobago were considered to be state-owned. Similarly high percentages of state ownership were reported in Africa and tropical Asia, the only reported exceptions being Zambia, Zimbabwe, Botswana, Papua New Guinea and Pacific Island nations. Jean-Paul Lanley, *Tropical Forest Resources* (FAO Forestry Paper No. 30, 1982), pp. 49-53.

In some places, such as Nepal, India, West Africa, Colombia, Bolivia, Peru and Ecuador, the state also extends its claim over trees on recognized private land. Louise Fortmann and Bruce Cabarle, personal communication (1990). In the Philippines, trees on private land cannot be legally cut for timber-production purposes without state authorization.

33. For a historical review as to how this status developed in Indonesia and the Philippines see, e.g., Owen Lynch, "Indigenous Rights in Insular Southeast Asia," *Southeast Asian Tribal Groups and Ethnic Minorities: Prospects for the Eighties and Beyond* (Cambridge, MA, Cultural Survival, 1987), pp. 27-46. For similar insights in Malaysia see Evelyn Hong, *Natives of Sarawak: Survival in Borneo's Vanishing Forest* (Penang, Institut Masyarakat, 1987), pp. 37-80. Additional insights on the legal efficacy of undocumented, customary property rights in other tropical countries can be found in the University of Vienna's journal, *Law and Anthropology: Internationales Jahrbuch fur*

Rechtsanthropologie (International Journal for Legal Anthropology) and the *Journal of Legal Pluralism and Unofficial Law* (formally *African Law Studies*) which is based at the University of Groningen, Netherlands.

34. See, e.g., Charles V. Barber, *The State, The Environment and Development: The Genesis and Transformation of Social Forestry Policies in New Order Indonesia* (doctoral dissertation, School of Law, University of California at Berkeley, 1989); Charles Zerner, *Community Rights, Customary Law and the Law of Timber Concessions in Indonesia's Forests: Legal Options and Alternatives in Designing the Commons* (Forestry Studies, UTF/INS/065, 1990); Joseph Grasmick, "Land and the Forest-Dwelling South American Indian: The Role of National Law," *Buffalo Law Review*, Vol. 27, pp. 759-800 (1979). See also Ramachandra Guha, *The Unquiet Woods: Ecological Change and Peasant Resistance in the Himalaya* (New Delhi, Oxford University Press, 1989). Recent tenurial reforms in Ethiopia may have narrowed the theoretical gap between national and customary land and forest laws in that country, but the practical effect remains to be seen. See *Participatory Rapid Rural Appraisal in Wolo, Ethiopia*, pp. 7-10 (London, International Institute for Sustainable Development, 1989).

35. See, e.g., Robert Repetto, *Macroeconomic Policies and Deforestation* (Paper prepared for the UNU/WIDER Project on Macroeconomic Policies and Deforestation, 1990); Douglas Southgate, *How to Promote Tropical Deforestation: The Case of Ecuador* (Columbus, University of Ohio Department of Agricultural Economics, 1989). The problem is openly acknowledged in the Tanzanian TFAP (Sections 2.3.4 (sixth paragraph) and 6.1.3). It is also discussed more fully, below, in the section on common (communal) property.

36. The effects of government policies which promote open access are mitigated in some forest communities which have developed customary techniques for resisting territorial encroachment. See, e.g., Marcus Moench, "'Turf' and Forest Management in Garhwal Village [India]," *Whose Trees?: Proprietary Dimensions in Forestry*, pp.

127-136, Louise Fortmann and John W. Bruce, eds. (Boulder, Westview Press, 1988).

37. Robert Repetto, *The Forest for the Trees? Government Policies and the Misuse of Forest Resources* (World Resources Institute, 1988), pp. 38-39.

38. In Ecuador, "These claims far outstrip the government's capacity to manage [forest] resources or even to ensure that its claims are honored by the public at large." Douglas Southgate and C. Ford Runge, *The Institutional Origins of Deforestation in Latin America*, p. 2 (University of Minnesota Staff Paper P90-5, 1990). In the Philippines, the overreach of the forestry bureaucracy prompted the World Bank to propose a "policy of divestiture" which would require the bureaucracy to moderate its jurisdictional claims, identify critical forest areas, and target its resources on sustainably developing them. *Philippines Environment and Natural Resource Management Study* (1989).

39. See, e.g., Owen Lynch, "Indigenous Rights in Insular Southeast Asia," note 33 *supra*; Bruce Cabarle, A Rumble from the Jungle: FCUNAE Workshop on Indigenous Peoples and Amazonian Forest Resources (unpublished trip report, November 1989).

40. Robert Repetto, *The Forest for the Trees*, p. 13.

41. See, e.g., Owen Lynch, "Withered Roots and Landgrabbers: A Survey of Research on Upland Tenure and Displacement," *Uplands and Uplanders: In Search of New Perspectives* (Quezon City, Philippine Bureau of Forest Development, 1984). See also, e.g., Survival International USA Urgent Action Bulletins: "Ecuador: Oil Companies Force 700 Waorani Off Their Land" (March 1990); "Philippines: Loggers' Private Soldiers Kill Lumad Tribespeople" (May 1990).

42. See, e.g., Gershon Feder, et al., *Land Policies and Farm Productivity in Thailand* (Washington, World Bank, 1988).

The importance of formal guarantees by the state which secure and protect ancestral-domain

rights within "public" forest land is highlighted by the successes of the indigenous Gubatnon Hanunoo Mangyan community of Malutok-Magarang in southern Mindoro, Philippines. During December 1981 the traditionally timid community leased 1340 hectares of its ancestral domain from the forestry bureau. The agreement has enhanced the community's capacity to resist illegal logging and migration. It has also contributed to greater investment in more sedentary, irrigated farming. See also Filemon Aguilar, Jr. *The Kalahan Educational Foundation: A Case Study of Social Forestry in the Upland Philippines* (Quezon City, Institute of Philippine Culture, 1982); Ben Malayang III, *The Effects of Agricultural Intensification and Tenure Security on Forest Clearance in Upland Swiddening Communities of the Philippines* (Ph.D. dissertation, University of California at Berkeley, 1990).

43. See, e.g., Ramachandra Guha, *The Unquiet Woods*, note 34 *supra*; Nancy Peluso, *Rich Forests, Poor People, and Development: Forest Access Control and Resistance in Java* (Berkeley, University of California, forthcoming 1990).

44. Perhaps the most reknown example of this type of activity is the Chipko Andolan movement in Kumaun, India. See, e.g., Vandana Shiva and J. Bandyopadhyay, "The Evolution, Structure and Impact of the Chipko Movement," *Forest Resources Crisis in the Third World* (Penang, Sahabat Alam Malaysia, 1987). For background on the historical precedents of the movement see Ramachandra Guha, *The Unquiet Woods*, pp. 152-184.

45. One of the leading NGOs in this regard, COICA (Coordinating Body for Indigenous Peoples' Organizations in the Amazon Basin) was founded in 1984. It represents an estimated 1.2 million indigenes in Ecuador, Peru, Bolivia, Columbia and Brazil.

Members of the Environment Liaison Centre, a global network of NGOs based in Nairobi, Kenya, shared some of their experiences in a book edited by Anil Agarwal, Darryl D'Monte and Ujwala Samarth, *The Fight for Survival: People's Action*

for the Environment (New Delhi, Centre for Science and the Environment, 1987).

46. For a detailed overview and analysis see Cheryl Cort, *Voices from the Margin: Non-Governmental Organization Participation in the Tropical Forestry Action Plan* (Washington, World Resources Institute, forthcoming).

47. See, e.g., *Toward an Environmental and Natural Resource Management Strategy for ANE Countries* (World Resources Institute, 1990), pp. 67-71; International Council for Research in Agroforestry and Land Tenure Center, *Land, Trees and Tenure: Proceedings of an International Workshop on Tenure Issues in Agroforestry* (1987); Gerald Foley and Geoffrey Barnard, *Farm and Community Forestry* (London, International Institute for Environment and Development, 1984), pp. 63-66, 115-17, 187-88 (1984).

48. Daniel W. Bromley and Michael M. Cernea, *The Management of Common Property Resources: Some Conceptual and Operational Fallacies* (World Bank Discussion Paper No. 57, 1989), pp. 5-6.

49. *Papua New Guinea The Forestry Sector: A Tropical Forestry Action Plan Review* (World Bank, 1990), p. 66; *Philippines Environment and Natural Resource Management Study*, (World Bank, 1989). See also Augusta Molnar, "Land Tenure and the Adoption of Soil Conservation," *Asia Regional Review of Watershed Development* (World Bank Staff Working Paper 1990); Gershon Feder et al, *Land Policies and Farm Productivity in Thailand* (World Bank Research Publication, 1988); Charles Barber, Harmonizing National Forest Land and Resource Policies with Existing Patterns of Settlement and Subsistence in Kalimantan, Sumatra and Irian Jaya: Legal and Institutional Issues (unpublished paper prepared for the World Bank Indonesia Environmental mission, 1987).

50. See Asian Development Bank, *Report and Recommendation of the President to the Board of Directors on a Proposed Loan to the Republic of the Philippines* (RRP:PHI 22068, November 13, 1989), p. 8. Although the agreement refers to

titling, the areas, including several ancestral domains, will be covered by Communal Forest Leases issued pursuant to the government's Integrated Social Forestry Program. It remains to be seen whether the government complies with even this tenurial commitment.

51. See, e.g., Hans Gregersen, Sydney Draper and Dieter Elz, *People and Trees: The Role of Social Forestry in Sustainable Development* (Washington, World Bank, 1989), Table 10.1. The table is based on a study of Asian countries which indicates that, except for the Philippines, the tenurial components of social forestry projects make no provision for private land ownership. (N.B. The reference to a Philippine exception is mistaken. The Philippine Integrated Social Forestry Program also has no private land tenure component.)

52. See, e.g., Theodore Panayotou, *The Economics of Environmental Degradation: Problems, Causes and Responses*, (Harvard Institute for International Development, unpublished draft, 1989), p. 17. For a tenurial alternative which addresses this concern see Lynch and Talbott, "Legal Responses to the Philippine Deforestation Crises," note 29 above.

53. Common and communal property are considered in this paper to be synonymous. Some tenure specialists, such as Louise Fortmann and John Bruce, argue that the words have different meanings.

54. This distinction is finally gaining some recognition within international development institutions. See, e.g., Daniel Bromley and Michael Cernea, *The Management of Common Property Resources: Some Conceptual and Operational Fallacies* (World Bank Discussion Paper No. 57, 1989). But see also William Magrath, *The Challenge of the Commons: The Allocation of Non-Exclusive Resources* (World Bank Environment Department Working Paper No. 14, 1989). Magrath distinguishes common property from open access. But he oversimplifies the nature of common property by referring to it as "nonexclusive" (e.g., paragraph 7), and by stating that common property resources "are owned by everyone." (e.g., paragraph 65). See

generally James Acheson and Bonnie McCay, *The Question of the Commons* (Tucson, University of Arizona Press, 1987).

55. Legal amalgamations between customary and state systems sometimes blur the distinguishing characteristic. In West Bengal, for instance, the government jointly protects common forests. Community members take offenders to the forest office. Augusta Molnar, personal communication (1990).

56. C. Ford Runge, "Common Property and Collective Action in Economic Development," *World Development*, Vol. 14, No. 5, pp. 623-35 (1986). See also, e.g., Charles M. Peters, Alwyn H. Gentry and Robert O. Mendelsohn, "Valuation of an Amazonian Rainforest," *Nature*, Vol. 339 (1989).

F. von Benda-Beckmann, a leading legal anthropologist in Europe, has emphasized another important point concerning the difference between external and internal aspects of common property. In his words, "Unity, communality in external relations and relations of public/political authority over resources may easily go together with high degrees of internal differentiation of actual use and exploitation of the same resource." He added that oftentimes the dualistic nature of common property is interpreted by outsiders as a "contradiction" and is used "to 'refute' the 'individual' character of rights by demonstrating their 'communal' character, or vice versa." F. von Benda-Beckman, personal communication (1990).

57. In many, if not most, instances recognition of common property rights and delineation of common property perimeters will have to be accompanied by legal recognition of representative institutions. Marcus Colchester argues that this must occur simultaneously. Personal communication (1990). The author, however, believes that issues concerning representative institutions can be subsequently addressed.

58. See, e.g., Lynch and Talbott, "Legal Responses to the Philippine Deforestation Crises," note 29 *supra*; Peter Poole, *Developing a Partnership of Indigenous Peoples,*

Conservationists, and Land Use Planners in Latin America (Washington, World Bank LAC Working Paper, 1989); Shelton Davis, *Indigenous Peoples, Environmental Protection and Sustainable Development*. Gland, Switzerland, IUCN, 1988).

59. See International Labour Organization Convention No. 169 Concerning Indigenous and Tribal Peoples in Independent Countries, especially Part II (1989).

60. Marcus Colchester and Bruce Cabarle, personal communication (1990).

61. Many governments also fail to recognize the unique problems and potentials of pastoralists and hunter-gatherers.

62. Harold Conklin, "An Ethnoecological Approach to Shifting Agriculture," *Transactions of the New York Academy of Sciences, Series II*, Vol. 17, No. 2 (1954) at 1 citing J.O. Hallowell, *A Dictionary of Archaic and Provincial Words ... from the Fourteenth Century* (1847).

63. See note 22 above for a list of references.

64. See, e.g., Michael Dove "Swidden Agriculture and the Political Economy of Ignorance," note 22 above.

65. This argument is based on two assumptions: 1) tropical forest countries with food shortages should not foreclose the sustainable use of some forest lands for agricultural production; and, 2) production from swidden fields which are managed in an environmentally sustainable manner alleviates pressures on other resources (e.g., survive on swidden farming or migrate to an already overcrowded urban slum; survive on swidden farming or capture forest birds and animals and sell them within the informal economy.)

66. See, e.g., *The Tropical Forestry Action Plan* (June 1987), p. 9. This TFAP document devoted only three sentences to swidden agriculture. Rather than differentiating among forest-zone farmers, it merely echoed the standard line that "Shifting cultivators are widely blamed for the destruction of tropical forests." It added,

seemingly as an afterthought, that "often they have no other choice."

67. *See, e.g., Marcus Colchester, Shifting Cultivation: Rational Resource Use or a Robber Economy?* above note 22, p. 2.

68. Section 53 of the PNG Constitution provides a legal model for defining the national interest in land expropriation cases. It states that "customary-owned land may only be compulsorily acquired ... if the property is needed for a public purpose ... reasonably justifiable in a democratic society."