



Retrieved from: <http://www.cifas.us/smith/chapters.html>

Title: "Forestry programs in tropical countries."

Author(s): M.G. Smith

Source: In *Tropical Forests: Utilization and Conservation*. Francois Mergen, ed. New Haven: Yale School of Forestry and Environmental Studies. p. 143-153.

DESPITE my obvious lack of specialist qualifications, I have been invited to discuss the excellent papers of Robert Evenson and Hans Gregersen which preceded this. Neither am I a forester, an ecologist nor an economist; nor, as will be seen, am I altogether sure what constitutes a forest. Accordingly I approach these two papers and the broader topic of tropical forestry as a layman, and will consider these subjects as a social and cultural anthropologist, as a native of the tropical regions whose forestry assets and policies are under discussion, and finally as someone familiar with some of the problems and processes of policy formation within Third World governments. Accordingly the following comments are offered from a purely personal perspective, though I hope they may represent one possible Third World point of view.

I shall begin by reviewing the arguments of Professors Gregersen and Evenson as I understand them, and then raise some questions and issues that seem important to me. If the following comments have any merit, that should be attributed directly to the excellence of the two papers under review which between them set out so clearly the state of current knowledge and the crucial sets of ecological and economic factors to be considered in designing or projecting forestry programs for tropical countries.

Intentionally or otherwise, it seems to me that the two papers argue opposite points of view as regards tropical forest policies. Hans Gregersen, discussing environmental constraints versus economic gains in tropical forestry, puts a strong argument for an aggressive forestry program, though one which has to meet the four ecological minima set out by Brunig *et al.* (1976) as well as the political and economic considerations that determine tropical land use policies and activities in Third World countries. Gregersen adopts a broad cost-benefit approach but has a liberal view of benefits which includes those not measurable in terms of

commercial profits. On this basis, he argues for policies that should materially increase the economic values of tropical forests beyond their present levels by a combination of large-scale forest plantations, and for adaptive research in tropical countries to increase the quality and value of forest products and the technology for processing them, while reducing transport and other operational costs. He also urges tropical foresters to press their governments to improve agricultural efficiency in order to reduce the threat of deforestation by agriculture.

At several points in his essay, Gregersen acknowledges the present lack of information and even consensus among forestry specialists on the contributions and relationships of those conditions and factors that are crucial to formulations of reasonably accurate cost-benefit analyses of the implications of alternative land use programs, e.g. for farms or forests. Gregersen makes no mention of livestock. Nonetheless, confronting the critical problem of conservation or conversion of natural forests in tropical countries, despite his candid and repeated admissions of our inadequate knowledge, on ecological as well as economic grounds, Gregersen seems to prefer replacement of natural forests by plantations wherever possible. "Under a wide variety of conditions, the economic arguments for the plantation alternative are sound. Cost per unit of output can be reduced drastically for certain types of products."

As against this point of view, Robert Evenson speaks approvingly of deforestation, provided that this puts the land to more productive use, whether in farming or livestock rearing. Indeed he argues that "If forest lands produce little or nothing to improve the real income and welfare of the masses of poor people in a tropical country, even their conversion to a severely eroded state would not represent a loss." "If some alternative use can be made of the land which does produce something of value, such use may be sensible even if it leaves in its wake environmental damage." In short, while Hans Gregersen seeks to integrate and harmonize the crucial considerations of ecology and economics in tropical forestry programs, Robert Evenson apparently regards ecological constraints as scarcely relevant for policy decisions. As I understand him, for Evenson "wise public policy requires 'getting the most from the resources at hand.'" "It pays to hold resources in inventory only if their value is expected to increase at a rate exceeding the interest rate. Only if prices will be higher, costs of cutting lower, and if the stand grows sufficiently, will it pay to wait." And clearly "efficient exploitation of resources requires the formation of expected future prices."

Both writers agree on the need for tropical countries to have strong research institutes to study their forestry potentials and requirements, and to adapt technology and metropolitan forms of organization to local conditions. Both writers are equally frank about various points of uncertainty in their arguments, as their papers show. Thus, where they seem to disagree, are we being asked to make some choice between these uncertainties? And if so, on what grounds? In most cases such choices can only reflect the influence of subjective factors, whether professional, ethnic, national, religious, political, or other.

In effect as a layman it seems to me that both papers address the questions of policy about conserving or replacing natural forests that confront many Third World governments. As regards replacement, the main alternatives mooted in these papers appear to be forest plantations on the one hand or conversion to farms and livestock husbandry on the other. A third possibility surely, however undesirable, is for forest lands to be appropriated to urban and industrial or military purposes where the terrain allows. I sincerely hope that I have not misunderstood too grossly the arguments of these interesting papers, but before discussing them further, I may as a layman be excused for raising the rather elementary question of what do we mean by the term 'forest'?

In view of the silence of both papers on this question and the apparent exclusiveness of their approaches, it does seem appropriate to raise it.

To illustrate: in Nigeria, besides equatorial forests there are broad belts of so-called orchard bush or savannah forests, much of which the recent Federal Military Government classified as 'permanent pasture' for the nomadic Fulani and their cattle herds. Thus at least in this case, forestry seems compatible with livestock husbandry. As we move further north the tree cover thins until at latitude 13 degrees North we gradually enter a dry savannah region dominated by scrub bush, and around latitude 15 degrees North the hard grass and thorn bush of sub-desert steppe take over. Widely gazetted by State and Federal governments as forest reserves, are all these different wildernesses equally forests, including those with very few trees? If not, how and where should the Nigerian government draw the line? In Niger State, central Nigeria, in 1978, for example, the Ministry of Natural Resources was considering a proposal to demarcate areas within the empty forest reserves in which to localize the Fulani herdsmen, thus releasing most of the presently gazetted reserves of 'permanent pastures' for other uses, including forest plantations, agriculture, and urban-industrial development.

Further north in the Sahel the Nigerian government has established many fine if relatively small plantations of quick-growing trees to ensure fuel supplies, to create wind-breaks, and above all to hold down the soil against the desiccating harmattan wind that blows in the dry season from the Sahara, from December through February. Many of these forests are presently at risk, given the prolonged drought and erratic rainfall across this region since 1972. But in any case they are clearly a quite different category of forest from the high equatorial or mangrove forests of the coast, and from the so-called 'permanent pastures' or orchard bush of the southern savannah. Is a single indiscriminate label appropriate for all these diverse types of woodland?

The mangrove and equatorial forests are clearly natural or virgin, while much of the savannah woodland is secondary growth, sometimes quite sparse. Just when is secondary forest 'natural'? What then of 'ruinate' - that is, formerly cultivated lands which have been allowed to revert to bush, as for example in Jamaica. Are these also forests, if gazetted as such? And are they not forests, if not so gazetted? To illustrate, let me quote an official document that set out a National Physical Plan for Jamaica (1971). Therein we are told that "existing forests cover some 660,000 acres, or 24 percent of Jamaica's land area. Most of the 274,000 acres in Forest Reserve and Crown Lands have forest cover." In short, nearly three-fifths of this area of just under 400,000 acres are privately owned, the overwhelming majority being ruinate, much of it ungazetted. Being ungazetted, are these then forests? Or is a forest simply something that Government gazettes? In this Jamaican case, clearly much of the 24 percent forest land will fail to qualify as forest, being ungazetted. Yet in either case, global statistics for tropical forests must be highly dubious, since Governments can gazette whatever they please, including treeless wastes in Northern Nigeria or Niger. Yet if these statistics from tropical countries are of dubious value, this must throw doubt on any arguments that are based upon them.

Two other categories of woodland scarcely mentioned in these papers seem to me to require special notice. The first deals with conservation of watersheds in hilly areas subject to erosion in tropical countries through heavy rainfall and poor cultivation practices. The basic variable here is topography. Some tropical countries, like Nigeria, have gentle slopes over the greater part of their terrain. Others like Jamaica, most Caribbean islands, New Guinea and other parts of Melanesia, have rugged contours from which, if unprotected, the heavy annual rains strip the topsoil at incredible rates, thereby eliminating both forestry and cultivation as practi-

cal alternatives for the future. Anyone who has flown over Haiti below 20,000 feet will find it difficult to forget that example of erosion. Such a prospect faces a great many tropical countries as the alternative to forest conservation and afforestation programs particularly concentrated on watersheds. In those conditions the country's government is obliged to establish an adequate forest as rapidly as possible in order to conserve soil fertility and restrict erosion, irrespective of the market returns expected from such forests later on. Indeed its investment will be limited only by the need and by its available resources, uninfluenced by the calculable commercial returns.

Another curious omission from the preceding papers, given the severe and increasing shortages faced by Third World countries, is the entire subject of food forests. Throughout the Third World peasants have demonstrated the ecological compatibility and great economic potential of combining varying sets of food-producing species such as breadfruit, mango, avocado, citrus, ackee, banana, plantain, cocoa, and coffee. This is equivalent to intercropping and may therefore be abhorred by certain foresters who prefer to design or deal with blocs in pure stand. But clearly this alternative of food forests may be very valuable for Third World countries, and not only on agriculturally marginal land, since well designed combinations of food trees may well deliver greater value per acre per annum, and at lower cost, than most of the crops which Third World countries are urged and economically constrained to cultivate for sale on world markets which they do not control, and which systematically undervalue primary products, for example bananas or sugar. Curiously, however, foresters trained in metropolitan countries seem to be solely or primarily concerned with forests that deliver timber and pulp, since these are the major forest products of concern to Western interests and the world market. Yet are such products always the most useful and important for the people of tropical countries? Is this the best use to which their natural forests should be put? For example, returning to Robert Evenson's paper, we might ask whether food forests would not be superior replacements to cultivation for marginal gazetted forests. In other words, should we continue to look at forests purely from the commercial point of view, as suppliers of lumber and pulp, in tropical as in temperate areas?

To consider forests as a reproducible resource involves schemes for planting. On this, Robert Evenson remarks that "if a 30-year wait before harvest is involved, the ratio of the stumpage value to the initial investment must be very high in order to realize a reasonable return." Hans Gregersen also recognizes these considerations, and both writers stress

the present low value of tropical forests, which mainly deliver fuel wood to some 1.5 billion people. Clearly fuel wood is not for export, yet it may be of far greater value to the local people than anything they could produce for export on this land, given market fluctuations and current prices of alternative fuel, and the likelihood of further increases in the future.

To illustrate: in 1972 Jamaica paid JS44.4 million for its imported fuel, mainly oil (N.P.A. Jamaica, 1973). In 1977 its fuel imports cost JS225.6 million, and for 1980 they are estimated to cost JS880 million (N.P.A. Jamaica, 1977). To be sure, the Jamaica dollar has devalued since 1973 several times, but this is partly in response to repeated increases, not only in the cost of oil, but also in the cost of all other major imported commodities such as grain, machinery, vehicles, and newsprint, all of which have increased significantly in price since 1973. Therefore let us not underestimate the real economic value of fuel wood to the poor people of these poor countries, for whom the alternative fuel is something they can't afford, such as kerosene oil, or perhaps something unavailable, such as hydro-electric power. The greatest value of the fuel wood of tropical forests for the people of those countries is the evident valuelessness of this commodity on the world market; for that is what protects these traditional fuel supplies against the price manipulations and reductions that have together characterized the fortunes of tropical primary products on a world market dominated by industrial metropolitan states. In 1978 the World Bank estimated that "non-commercial energy sources . . . still supply about one-half of total energy in developing countries and more than 85 percent of energy used by the 2,200 million people in the rural areas in these countries" (World Bank, 1978). At world market prices, the value of the firewood consumed in this way is very substantial, both to the individuals and to the countries concerned. Moreover, prices of commercial fuel, especially oil, rise steadily, and supplies are uncertain. Therefore it does not behove foresters to devalue tropical forests because they "merely" supply fuel wood for the peoples of those countries. Such an argument is meaningless except as a minor premise in the thesis that tropical forests should be developed and exploited for the world market, which is of course dominated by metropolitan industrial and commercial interests. Moreover, the techniques of development and exploitation proposed for tropical forests in order that their products should be 'competitive' on the world market, derive from metropolitan sources; accordingly wherever such programs are pursued in tropical countries, these become very heavily dependent on metropolitan countries, and especially on the U.S.A., for technical guidance, equipment, spare parts, marketing and

management services. Under such circumstances the final state of the country's affairs is worse than the first, to anyone other than the metropolitan interests who have stage-managed this 'development' and derive the principal benefits from it.

To illustrate: if the Jamaican people derive half of their domestic fuel requirements from their local woodlands, then without such supplies the country's bill for fuel imports would surely exceed the J\$880 million expected for 1980. But of course Jamaica can't afford this amount in any case. Thus in the absence of imported fuel and local firewood, are we expecting the rural poor to eat their food raw? Certainly the more prosperous urban populations will not tolerate such deprivation. This situation is an unavoidable implication of the economic and maximizing arguments advanced in the two preceding papers with reference to the development of tropical forests.

Both papers ignore the structure and trends of the present world economic system, which heavily disadvantages developing countries in international trade. Clearly the apparently inefficient exploitation of Third World forests by their governments and peoples provides an essential substitute for fuel imports; is this what metropolitan forestry experts, with all their sophisticated training, now wish to persuade the governments and peoples of the Third World to abandon and replace? On what grounds? For what purposes?

Overriding these issues, apparently, in the minds of foresters, is the general problem of what to do about 'natural' tropical forests - i.e. whether to conserve them, to replace them by plantations, or to allow them to be converted to other non-forestry purposes such as farming, herding, industrial or urban development. Both Evenson and Gregersen consider this issue, primarily in terms of conservation versus forest plantations. On the latter, Gregersen says that forest plantation schemes are "somewhat experimental." The evidence of high productivity does not justify, at this point, massive investment." Gregersen warns that "there are enough failures and enough uncertainties involved to make many persons doubt the wisdom of massive conversions."

To illustrate this point from Jamaica: by 1970 its astute Forestry Department had persuaded the elected government to seek to establish forest plantations on 26,800 acres of government land, 33,600 acres of private (estate) lands in natural forest or rinate, and 68,000 acres of private lands owned and cultivated by peasants, making a total of 128,400 acres, all within the eastern third of the island (Y.T.P.D., 1971). Notably more than three-quarters of this total consists of privately owned land, more

than half being land cultivated by peasants. Jamaican constitution, law, and administrative practice alike provide very strong protection for private property interests; nonetheless the Forestry Department apparently proposed to bring these large areas of privately owned land under their aegis as forest reserve, presumably to eliminate or at least reduce substantially the areas under peasant cultivation. Such a program shows clearly how the Department had put its bureaucratic and professional interests ahead of those of the people and their government. It is unfortunate that I can find no justification in print of such an aggressive program.

In 1972 that Jamaican government was replaced in a general election by the previous Opposition party, which had radically different orientations. Nonetheless by 1977 the Forestry Department had persuaded the new government to authorize and finance a program to establish 100,000 acres of forest plantations over the next 20 years (N.P.A. Jamaica, 1978). Since then, the former Director of Forests has been able to set up a new statutory body or corporation to establish and manage these plantations, as it would seem to me at a formidable risk and cost. Should we congratulate the Department on this political success, or regret it? I ask, can we assume on the basis of recent price movements on the world market for relevant inputs and for forest products, that there could possibly be any sound basis for a rational cost-benefit analysis to justify such an exercise, given that these forests won't be harvested for at least 20 years, if they are ever established. Have we any firm basis for pricing the expected benefits or returns from these projects, direct or otherwise? Realistically, what is the probability that these expected benefits will materialize? Such questions are equally appropriate to a great number of official programs, not only in forestry but in various sectors of 'Development,' projects which international and local bureaucracies, separately or together, foist on the defenceless political directorates of the Third World countries.

Certainly I encountered parallel schemes for wastage on forestry in Niger State, Nigeria in 1978. But most fundamentally, dare any of us speak with confidence about the prices of forest products or the costs of equipment, transport and other inputs such programs require, on the world market five, ten or twenty years hence? Can we even be sure about the structure and scope of such a world market over this span of time? Yet, if we cannot answer these and similar questions affirmatively and definitively, on what basis can we construct cost-benefit appraisals for alternative land uses in these Third World countries, particularly given the long lead time of twenty to thirty years forestry programs require before harvest?

Much of the current debate about alternative forestry policies for tropical countries, despite its economic tone, seems curiously unaware of or indifferent to the contemporary economic situations of most Third World countries, and indeed of the acute and increasing economic crisis in which all market economies, industrial or other, are currently involved. To illustrate the situation briefly, let me quote from the New York Times:

"Non-oil-producing developing countries . . . in financing expensive energy and inflation . . . increased their external debt from \$142 billion in 1974 to \$315 billion in 1978 . . . These countries . . . are facing an aggregate current account deficit this year of at least \$60 billion, up from \$30.5 billion in 1978 and \$45.5 billion in 1979. The prospects are for even higher international payments deficits in 1981" (N.Y. Times, 1980).

The structure and scale of the present world crisis are far too complex a topic to be discussed here. An excellent review of the background, with some recommendations, may be found in the Report of Willy Brandt's Independent Commission on International Development Issues, appropriately entitled *North-South: A Program for Survival* (IC., 1980). *Inter alia*, that document recommends that an additional \$60 billion should be transferred annually by 1985 through public channels from metropolitan to Third World countries, thus bringing the total metropolitan transfers to approximately \$140 billion per year (Times, 1980). While this seems a large sum in isolation, it is a very small fraction of the annual Gross National Product of the United States and a correspondingly smaller part of the aggregate GNPs of the industrialized metropolitan states. However, if the Brandt Commission is to be believed, annual transfers of this order are essential to restore and maintain an expanding and healthy world economy, for the benefit of industrial and developing countries alike. After several years of fruitless negotiation on the need and structure of a New International Economic Order, no representative of the Third World in his right senses can be optimistic about the fate of Willy Brandt's or any similar proposals. Yet without this or some equivalent program to stabilize and revive the world economy on less unequal terms than presently exist, what future faces us all? - and particularly those of us in the tropical Third World? In such a context, what is the real value of cost-benefit calculations of alternative uses of land as forestry plantations or other? What indeed is the real purpose or permanent value of the prolonged charade of "Development" programs, decades and pretences which the international agencies and Western metropolitan states have

promoted since World War II with such prodigious fanfare, inadequate investments and sorry results for mankind as a whole, and especially for Third World tropical countries? Is it meaningful to discuss forestry programs or other peaceful development schemes for Third World countries at this time without reference to the world economic crisis on the one hand, and the armaments race and military-political crisis on the other?

References

- Branig, E. F., M. V. Buch, J. Heuveldop, and K. F. Panzer.* 1976. Stratification of Tropical Moist Forests for Land-use Planning. Paper No. FO:FDT/76/8(c) for the Committee on Forest Development in the Tropics, Fourth Session, Rome, Italy, 15-20 November 1976. FAO, Rome, Italy.
- Independent Commission on International Development Issues, 1980.* North-South: A Program for Survival. (MIT Press)
- Jamaica Town Planning Department.* 1971.
- Ministry of Finance and Planning, Kingston, Jamaica.* 1971. A National Plan for Jamaica 1970-1990. United Nations Special Fund Project.
- National Planning Agency, Kingston, Jamaica.* 1973. Economic and Social Survey, 1973.
- National Planning Agency, Kingston, Jamaica.* 1977. Economic and Social Survey, 1977.
- National Planning Agency, Kingston, Jamaica.* 1978. Five Year Development Plan 1978-82.
- New York Times,* 1980, April 14, Section D, p. 3, Cols 3 and 4.
- The Times, London.* 1980, March 31. North-South.
- World Bank, Washington, D.C.* 1978. Annual Report.