

1: SLICING UP THE RAIN FOREST ON YOUR BREAKFAST CEREAL

THE EASTERN SLOPES of the Barva volcano catch water-laden trade winds from the Caribbean to create the climate of Costa Rica's eastern coast, location of some of the most beautiful rain forests in the world. Here you can experience that special feeling that inspires poets and explorers—from the myriad vegetative forms so evident even at first glance (Figure 1.1) to the misty mornings that invoke mysterious feelings and bucolic images of paradise lost. The trade winds rise as they encounter the eastern seaboard, and with their ascent they cool, condensing the water vapor they borrowed during their voyage across the Caribbean. The consequent rains collect in several basins and come together roughly at the town of Puerto Viejo before continuing northward to empty into the San Juan River, the border with Nicaragua. This is the region known as the Sarapiquí (sah rah pee KEE), site of several of the world's most famous rain forest conservation areas (Figure 1.2).

Streaming into the area to partake of the breathtaking beauty of the natural world in this, “one of the last” pristine places in the world, are biologists, ecologists, and ecotourists, spending their grant money or retirement savings to visit the “heritage of humanity.”

The rain forest here, as elsewhere, is a collective human construct that sometimes serves as our mystical Eden, but it is also a material collection of



Figure 1.1. The lowland tropical rain forest of Central America. Note the wide variety of vegetative forms evident.

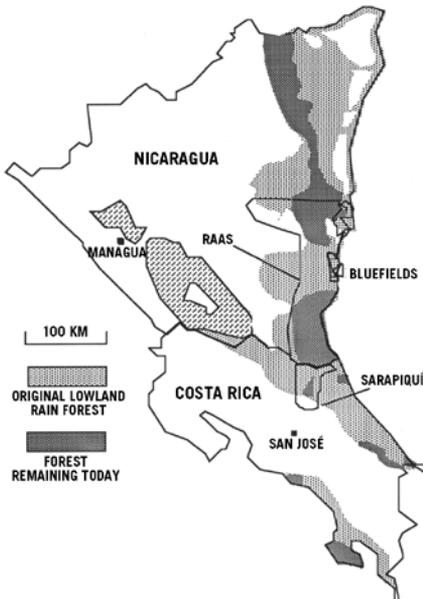


Figure 1.2. Map of Nicaragua and Costa Rica, illustrating the original and current extent of lowland tropical rain forest, and the position of the two political units, the Sarapiquí county of Costa Rica and the RAAS (Región Autónoma del Atlántico Sur) of Nicaragua (further discussed in Chapter 8).

fabulous plants and animals—a natural outcome of the high temperature and heavy rainfall of equatorial climates. It is hardly necessary to repeat the clichés any longer—tropical rain forests cover only 7 percent of the earth's surface yet harbor at least 50 percent of the world's plant and animal species (the earth's biodiversity); they are the lungs of the world, eating away at the excessive carbon dioxide we have excreted from our industrial metabolism; they are the source of foods and pharmaceuticals, bananas and Brazil nuts, chocolate, cashews, coffee and cocaine, cortisone and quinine. They are also beautiful! The aesthetic loveliness of these forested lands cannot be overestimated, and the sense of wonder one experiences walking through this cradle of biodiversity cannot be expressed in words.

But, as anyone visiting the Sarapiquí can readily see, all is not well in this garden of Eden. Certainly, it remains beautiful inside of the conservation areas. The problem is outside those areas. And the problem is the same one Costa Rica has had ever since Minor C. Keith built his famous railroad and helped found the United Fruit Company in 1898. The problem is the banana. Large banana companies have converted vast areas to banana plantations, thus threatening both directly and indirectly the rain forests we so revere. Those same biologists, ecologists, and ecotourists who love the rain forest when they're in Costa Rica also love to slice bananas onto their cereal in the morning. And with our penchant for viewing the world in isolated little disconnected fragments, it is apparently difficult for us all to see the connection between the knife that slices the banana into our cereal bowl and the chain saw that slices tree trunks onto the rain forest floor.

Not so long ago, environmental activists in the developed world became aware of the so-called hamburger connection. Central American rain forests were being cut down at an alarming rate to make way for the production of low quality beef to supply the fast food industry in the first world. Stop eating fast food hamburgers, the argument went, and you would reduce the demand to cut down more forest. The banana expansion currently underway in Central America has been likened to this hamburger connection. But the whole argument surrounding the hamburger connection was flawed, and an attempt to construct the same argument for bananas would simply repeat those flaws. In fact, the expansion of banan-

as, like the expansion of pasture for beef production, involves a tangled web of subtle connections. Tweak the web at one point and it reverberates all over, sometimes in unexpected ways. Understanding the nature of the connections in this “web of causality” is the purpose of this book.

The transformation of the Sarapiquí is neither unprecedented nor unique, which makes it a useful example. Similar patterns occur throughout the tropics. Sometimes the pattern involves bananas, sometimes cattle, maybe citrus, African oil palm, or rubber trees—a variety of commodities similar politically if quite distinct biologically. The pattern is a six-stage process: (1) Visionary capitalists identify an economic opportunity for the market expansion of an agricultural product. In this case, the most recent opportunity was the opening up of markets in eastern Europe and the unification of western Europe. The product is bananas. (2) The capitalists purchase (or steal, or bribe their way into a government concession) some land, including land that may contain rain forest, which is promptly cut down. (3) They import workers to produce the product (in this case workers come from all over Costa Rica and even from Nicaragua). (4) After a period of boom the product goes bust on the world market, which means scaling back production, which in turn means releasing a significant fraction of the workforce. (5) The newly unemployed workforce seeks and fails to find employment elsewhere and must seek land to grow subsistence crops to tide themselves over until other work can be found. And finally, (6) the only place the now unemployed workers can find land no one will kick them off of is in the forest, which means yet more of the rain forest is converted to agriculture.

In this way Costa Rica, one of the world’s showcases of conservation, has indirectly promoted a policy that actually encourages rain forest destruction. That is interesting by itself, but this specific example is not as important as the general idea it highlights. The crop in this instance happens to be bananas, but the general pattern is all too common.

Costa Ricans and Their Love/Hate of Bananas

An afternoon in Puerto Viejo, the little town located near the confluence of the rivers draining the Barva volcano, reveals something that might surprise a European or North American tourist. Despite the fact that, given

their history, Costa Ricans understandably love to hate bananas, it was difficult to find anyone in town who did not fully support the massive banana expansion in the early 1990s. Furthermore, the government, both local and national, encouraged the expansion with a vigor normally associated with a depressed northern U.S. city courting a big assembly plant. (*You want no unions? You got it. You want tax breaks? Just say how much. You want license to pollute? Smoke your heart out. But please, just locate here.*) Costa Rica is as debt-laden as the rest of Latin America,¹ and needs all the money it can get just to service its debt. The expansion of bananas is one way to make money. Thus, despite the recognition that social and environmental problems will inevitably come along with the bananas, the vast majority of Costa Ricans, both in the Sarapiquí and elsewhere, welcomed the expansion. A small group of Costa Rican environmentalists protested, but they were overwhelmed by more powerful interests.

Of the approximately quarter of a million hectares² in the Sarapiquí valley, some 50,000 are devoted to biological preserves.³ Another 100,000 hectares are in the legal hands of small peasant farming communities. The rest (approximately 100,000 hectares) is a mosaic of small farms, most without title to the land; secondary and old growth forest; cattle pasture; and an occasional sizable ornamental plant or fruit plantation.⁴

On the periphery of the valley lies an extensive banana plantation owned by the Standard Fruit Company, a major employer in the region for the past quarter century. The history of Standard Fruit provides an example of what might be expected on a larger scale in the near future. Tales are common of pesticide abuse, waste dumping into local waterways, deforestation, and the massive social problems normally associated with a frontier area. Best documented is the celebrated case in which Standard Fruit was accused of negligence in its use of DBCP (dibromochloropropane), a popular fungicide.⁵ During the early 1970s thousands of banana workers were rendered sterile by this poison. In 1993 they filed a class action suit against Standard Fruit (and others) in a Texas court. The companies agreed, in 1997, to pay US\$41.5 million to workers who could demonstrate they had been rendered sterile, but thus far they have used a variety of legal maneuvers to avoid any payments. This and other past records indicate that historically the banana companies have not accepted

responsibility for the health and safety of their workers, the community, or the environment.

Perhaps even more ominous is another long-term pattern evidenced by the Standard Fruit operation in the area. Standard Fruit (known more frequently by its brand banana, Dole) employs workers who migrate to the Sarapiquí from other parts of Costa Rica, and increasingly from other countries, especially Nicaragua. These workers are retained as long as the market for bananas is sufficiently robust, but are let go when sales slacken. The laid-off workers are mainly rural people, former peasants drawn into rural wage labor. In past decades the ebb and flow of the banana business has created critical periods in which many workers were laid off and forced to fend for themselves. These layoffs were a natural product of the world economic system, due both to fluctuating banana prices, and to the very existence of a two-part economy—export bananas on one hand and worker/farmer on the other. There is little employment opportunity in the area, other than the banana companies, so when workers are laid off they must either migrate to the city, adding to the growing shantytowns, or turn to farming. In order to farm they have to find a homestead. Sometimes that small piece of land is in a rain forest. Other times it is a small corner of some large absentee landowner's cattle ranch, in which case, depending on complicated criteria, either the homesteading family is eventually forcibly evicted or the state agrarian reform institute adjudicates a "fair" purchase for the peasant family.

The past thirty or forty years have seen this arrangement persist, with rain forest cover in the region plummeting from almost 90 percent in 1950 to approximately 25 percent today. Only a small portion of the remaining 25 percent is not part of one of the four extensive biological reserves.

Loggers, Farmers, and Banana Companies: A Rich History⁶

This pattern, so readily observable today, is set in a rich ecological history beginning well before the current crisis.⁷ Early in the century, extensive river systems were used to transport both logs and bananas. Logging was a rather small-scale operation by modern standards, but it had the effect of drawing workers to the area and creating pathways into the forest. Since

only a handful of the many species of trees in the rain forest were actually valuable, it was necessary to scout out and then cut a path to the valuable trees and, after cutting them down, haul them out with teams of oxen or horses. By the 1930s, the land along almost all the rivers was deforested and planted with bananas, while the surrounding forest was riddled with trails made for dragging logs. The logging process intensified in the late 1940s and 1950s, when machinery was brought into the area and a complex network of logging roads crisscrossed what forests remained after the inroads already made by the banana plantations. Men who originally came to the area to work in the logging industry used these roads to gain access to logged areas and frequently established homesteads. Former banana workers did the same thing.

In the late 1940s everything changed in the Sarapiquí, as it did throughout the Atlantic coast of Costa Rica. Devastating fungal diseases routed the banana industry. The extensive plantations of the United Fruit Company and of various independent producers were decimated by this disease. No cure could be found, and the company moved its entire operation to the other side of the mountains, where the disease had not been established. It was not until the mid-1950s that a variety of banana that was genetically resistant to the disease was developed, thus enabling the Standard Fruit Company to reestablish its plantations in the area in the late 1950s.

The plot began thickening in the early 1990s. In anticipation of an expected surge in the demand for bananas (the anticipated result of opening markets in eastern Europe and the economic unification of western Europe), five or six major banana companies began purchasing large expanses of land and expanding banana production accordingly. The area planted to banana rose from 20,000 hectares in 1985 to 32,000 hectares in 1991, and visits to the area in 1991 and 1992 revealed intense activity in setting up new banana plantations throughout the valley. As much as 45,000 hectares were expected to be in bananas by the end of 1995.⁸ According to a report from the Costa Rican banana research institute (CORBANA), a total of 46,557 hectares were actually in production in the Atlantic Coast region of Costa Rica by 1997.

As had happened in the past, workers were drawn from all over the country. But breaking with past traditions, this time there apparently were

not enough Costa Rican workers to do the necessary work, and workers were also attracted from Nicaragua, Panama, and even Honduras. It appears that by now almost all of the arable land not currently in either biological preserves or organized peasant agricultural communities has become banana plantations.

A variety of factors make Costa Rica, and particularly the Sarapiquí basin, an especially attractive target of the banana companies. Notably, the infamous Solidarista movement has destroyed all union activity in the area. Some twenty years ago, this church-based, U.S.-supported, antiunion movement systematically moved into the Sarapiquí valley to replace all banana labor unions with a new concept for worker organization. Solidarista dogma outlaws strikes, does not recognize the right of workers to bargain collectively, and seeks to attract workers with frivolous benefits such as clubhouses and soccer fields. With massive funding from the Association for Free Labor Development, which is the international wing of the AFL-CIO and has long been suspected of having CIA ties, democratic labor unions were systematically attacked throughout Costa Rica. The campaign was especially effective in the Sarapiquí, where union membership now stands virtually at zero and company officials proudly proclaim that no union people are able to find jobs.⁹ A local political official told us in 1991 that the planned banana expansion would have been impossible without the existence of the Solidarista organizations.

A second important factor was the willingness of the Costa Rican government and its partner, the United States of America, to create infrastructural conditions that favor the banana companies. Roads were constructed, bridges were built, hospitals and schools were planned, all for the purpose of creating an attractive infrastructure for the banana companies. The U.S. Army Corps of Engineers was enlisted in this effort. In a 1992 program called "Bridges for Peace," army engineers built roads and bridges in the Sarapiquí. A cynical U.S. serviceman told us the program has been unofficially dubbed "Bridges for Bananas," as the construction so obviously focuses on improving infrastructure for the export of bananas. U.S. Army engineers built many of the roads and bridges that originally carried the logs of the cut rain forest, and now carry the harvest of the international banana companies. Indeed, with the infrastructure provided by U.S.

taxpayers at the request of the Costa Rican government, from roads and bridges to the Solidaristas, from the “converted” rain forest to new social infrastructure, investment opportunities look good—that is, if you are a banana company.

But the banana companies, mindful that their operations might attract outside attention, were prepared to pay “expert” scientists to mollify the public. Corporación Bananera Nacional (CORBANA) was formed in 1990. Some twenty years earlier a smaller national effort, Asociación Bananera Nacional (ASBANA), had been formed by the Costa Rican government for the purpose of developing technical assistance for small producers of bananas in the country. Operating on a tiny budget, this small research operation persisted until 1993, when the rush to privatization caught up with it and ASBANA changed its name to CORBANA and began to receive money directly from the banana companies. For every box of bananas exported, each company pays a fee to support the research efforts of CORBANA. Theoretically, CORBANA conducts research aimed at making banana production more environmentally friendly. This research was to include proposed projects on using biotechnology to develop strains of bananas resistant to pests, development of organic fertilizers, and extensive surveys of fauna in the banana plantations (ostensibly to monitor the effects of the plantation on wildlife). However, in a visit to the CORBANA facility we observed very impressive projects on soils, plant diseases, parasites, and drainage, but none of the celebrated studies to promote environmental friendliness.

But we repeat and emphasize that the expansion of bananas has always been viewed as a positive event by nearly everyone in the Sarapiquí and by most observers in the entire country. Local workers and peasants see jobs being created, local merchants see a potential surge in business, and local politicians see an increase in their power base. The Costa Rican government itself promotes the expansion since it sees the increased tax revenues as helping to pay debt service on its tremendous international debt. The accepted fact that almost all profit from banana farming will leave the country seems of little local concern. This is perhaps understandable given the state of the local and national economy. But less comprehensible is that segments of the international “conservation” community have

come on board and either retain a calculated obliviousness to what is going on or actively pursue a neutral position. Significant yet weak opposition is coming from a small, loosely structured local conservation movement composed of Costa Ricans and organized without the help of the international conservation community. They are fighting against what appear to be insurmountable odds.

This example illustrates the dynamics that occur, with different details of course, throughout Central America and in much of the rest of the world. Because of the nature of the world economic system, Costa Rica really has no choice but to promote the expansion of bananas. Costa Rica's international debt, accumulated because of its position in the world economy, and its need for the expansion of international capital, require that it seek tax revenues however it can. The banana companies themselves (at least one of which is Costa Rican) continue to play their historical role as international accumulators of capital and temporary employers of peasants, thus maintaining the dysfunctional two-part economy. Peasants continue arriving from other parts of the country and even from other countries, seeking jobs and the "good life" and willing to accept minimal conditions; but since the Solidarista movement destroyed the unions, they are without significant political representation. The stage was initially set by the loggers with their systems of logging roads, and the first wave of banana plantations with their periodic layoffs, which forced peasants into the forests. If the process continues with this basic overall structure—and we see no reason to doubt it will—there is little hope in the long run even for those rain forests under protected status.

Despite what some promoters claim, banana plantations do not last forever. A variety of ecological forces eventually catch up with such intensive production, and the plantations must be abandoned. Will the legacy of bananas leave the area with much degraded conditions of production, as has happened repeatedly in the past? Who will bear the costs of restoring ecosystems to their original state, if that will even be possible? And who will share the perspective of the thousands of rural people deprived of their land and their livelihood, with no place to go? Who will tell them that the rain forest is more important than feeding their families?

The Problem from Various Perspectives

In the midst of these dramatic events, an internationally recognized ecologist gave a public lecture at a local ecotourism center in the Sarapiquí, claiming that recent deforestation in the area was due to the inevitable march of Malthusian reality. He claimed that overpopulation was causing the destruction of the forest. In a trivial sense, of course, such an observation is true. There undoubtedly is an overpopulation of banana companies, an overpopulation of former banana workers looking for land, an overpopulation of adventurers seeking their fortunes in a new frontier zone, an overpopulation of greedy people and institutions, and even an overpopulation of ecotourists from Europe and the United States.

But when this expert ecologist declared that a Malthusian crunch was the root of the problem, he was actually implying something rather different: that the pressure of having too many children—the birth rate of the population—is the real problem. This point of view implies that the main solution to the problem is birth control. It further implies that this is a sufficient solution, that it is useless to do anything other than promote birth control, and that as long as population densities remain as they are, the pattern of deforestation will continue.

An alternative viewpoint expressed to us by a local conservationist is that avaricious banana companies are cutting down rain forests because they are hungry for profits. They will stop at nothing to satisfy their need to accumulate ever greater quantities of capital, and the forests will continue to disappear as long as the banana companies are allowed to continue their greedy operations. This also is a distinct point of view. It implies that the only solution to the problem is to eliminate the capitalist. It further implies that this is a sufficient solution, that it is useless to do anything other than “smash capitalism,” and that as long as the drive to accumulate capital remains, the pattern of deforestation will continue.

These points of view are prisms through which the facts of the matter may be interpreted. They both encourage a single-focus solution—stop population growth, or smash capitalism. We believe that both are right in a very limited sense. But we also believe that they are both wrong in a broader and more practical sense. Ultimately each of these prisms focuses on a single thread in a fabric of causality. Eliminating one thread will not

eliminate the problem. The problem is the fabric itself. The proper means of understanding the situation, then, is to look at the complicated way that various forces are interdependent, especially focusing on the way countervailing tendencies are resolved. The approach we take in this book may at first glance seem as narrow as the approaches of those who advocate population reduction or smashing capitalism. We assert that food insecurity and poverty are the root causes of deforestation. It is a critical thread in the fabric of causality.

We take this approach for two reasons. First, we wish to provide an antidote to the simplistic views that either overpopulation or avaricious capitalism cause deforestation. Second, we will argue that, given the ultimate goal of reworking the entire fabric of causality, the place to begin that process is with food security. We will not argue that assuring food security for the peasant class will per se stop deforestation, but rather that beginning the political process of reorganizing socio-economic-ecological systems by examining questions of food security will force both analysis and practice into the realms ultimately necessary for the resolution of this issue. When neo-Malthusians suggest there are too many people for the land base, the food security position reveals several important particulars: that peasants seek land to feed their families not because there are too many of them or too little land (at least right now), but because available land is occupied by other activities. Our orientation will also reveal that the techniques for sustainable agriculture in that zone have been replaced with destructive, chemically based ones, and further that the legal status of most peasants is “landless” even when they clearly occupy a piece of land. When radicals purport that avaricious capitalism causes deforestation, the food security position shows that the evolution of modern agriculture has created international structures that force even progressive governments like Cuba’s to invite those greedy capitalists into their economies. The international order that causes food insecurity in the developing world is implicated in a chain of events that ultimately leads to the transformation of workers to peasants who must seek out rain forest land to farm in order to provide food for their families.

We do not wish to leave the impression, however, that food insecurity is just another mechanistic cause to which the problem of rain forest

destruction may be reduced. It is clearly not. But, as a mode of analysis, examining food insecurity will cause us to deal with the entire complex web of ecological, sociological, economic, and political issues on which the poisonous spider of rain forest destruction crouches.

Two Models for Saving the Rain Forests

Current events in the Sarapiquí region are, alas, not unique. Tropical rain forest areas around the globe are experiencing similarly complex socioeconomic forces, which threaten to continue or even accelerate the destruction of this most diverse of all ecosystems. In all of these areas there has been some reaction from local and international concerns. Unfortunately, much of this response is misdirected because it is based on a distorted image of the facts, and on an implicit ideology—what we call the *mainstream environmental movement approach*—which allows only a narrow range of possible courses. We feel there is an alternative philosophical approach, the *political ecology strategy*, which emphasizes basic issues of security: security of land ownership, and the consequent ability to produce food for local consumption.

The mainstream environmental movement has raised large sums of money to purchase and protect islands of rain forest, with little concern for what happens between those islands, either to the natural world or to the social world of the people who live there. We doubt this strategy has much chance of succeeding. It is likely that in the short term the landscape will be converted into isolated islands of tropical rain forest surrounded by a sea of pesticide-drenched modern agriculture, underpaid rural workers, and masses of landless peasants looking for some way to support their families. The long-term prospects, however, are worse, as the example of the Sarapiquí suggests.

Our alternative, the political ecology strategy, emphasizes the land and people *between* the islands of protected forest. We feel it has greater credibility because of its willingness to search out the interconnections in this complicated system. This point of view has been variously known as “ecological development,” “sustainable development,” or “eco-development,” though all of these terms have been cynically adopted by even the most environmentally destructive agencies. Whatever we call it, this

approach views the problem as properly a landscape problem, with forests, forestry, agroforestry, and agriculture as interrelated land use systems, and seeks to develop those land use systems so that conditions of production according to the needs of the local population may be maintained. The political ecology strategy challenges unsustainable development projects, such as modern banana plantations, and seeks to organize people to oppose ecologically and socially damaging development.

These two points of view lead to quite different projections of what the future rain forest areas of Central America might look like. If the mainstream position remains dominant, we expect to see, in the short term, a sea of devastation with islands of “pristine”¹⁰ rain forest, and in the long term nothing but the sea of devastation. The political ecology point of view envisions a mosaic of land use patterns: some protected natural forest, some extractive reserve, some sustainable timber harvest, some agroforestry, some sustainable agriculture, and, of course, human settlements. This mosaic would be sustainable over time.

But is this a practical vision in the real world? The decision to promote bananas in the Sarapiquí can hardly be faulted on “modern” economic grounds. Sadly, however, if national and international commitment to the archaic economics of Adam Smith and the International Monetary Fund (IMF) persists, we fear continuing destruction of the rain forests and the deterioration of the lives of the people of Sarapiquí. The alternative requires a radical rethinking of what sorts of economic and political arrangements are to be tolerated, the sort of rethinking that can get you in trouble in Central America, the sort of rethinking that may even challenge the idea that it is our inalienable right to slice bananas onto our breakfast cereal.

Costa Rica, Bananas, and a General Pattern

The case study elaborated in this chapter is typical. Granted, there are cases in which rain forests are being cut with a profoundly different logic (several areas in Southeast Asia and much of the Amazon for example), but both historical and contemporary patterns the world over reflect the basic paradigms seen in this example. The details vary, but the underlying logic is remarkably consistent.

Costa Rica has been held up as one of the world's best examples of rain forest conservation. Its internationally recognized conservation ethic, its position of relative affluence, its democratic traditions, the remarkable importance of ecotourism to its national economy, and its willingness to adopt virtually any and all programs of conservation promoted by western experts make it the most likely place for the success of the traditional model of rain forest conservation. The fact that the model has been an utter failure in Costa Rica, where it had the greatest chance of success, calls the model itself into serious question.

This case study is intended as an outline of the general problem. In the rest of the book we discuss the details of how the problem comes about, ecologically, economically, and politically. Hopefully, at the end, what must be done to protect rain forests will be clear. Hopefully, the reader will come to agree with us that purchasing tracts of land and putting them under armed guard is folly. Hopefully, it will become apparent that stopping individual logging companies and avaricious agroexporters can be only a small part of the solution, and that basic questions of land and food security are the most central components of any potentially effective political strategy. Hopefully, it will be apparent that such political strategies begin to look more like past political strategies that helped stop the war in Vietnam, curtailed U.S. intervention in El Salvador and Nicaragua, and currently challenge the international hegemony of institutions like the World Bank, IMF, and World Trade Organization (WTO). And hopefully, it will be clear that only by our uniting with political forces that have similar fundamental goals can the future of the world's rain forests be brightened.