

TROPICAL FOREST TRANSITIONS AND GLOBALIZATION: NEOLIBERALISM, MIGRATION, TOURISM, AND INTERNATIONAL CONSERVATION AGENDAS

Christian A. Kull^a
Camellia K. Ibrahim^b
Thomas C. Meredith^b

This is final author version of manuscript for the following paper:

Kull, Christian A., Camellia K. Ibrahim, and Thomas C. Meredith (2007). Tropical forest transitions and globalization: neoliberalism, migration, tourism, and international conservation agendas. *Society and Natural Resources*. 20 (8): 723-37.

Definitive version published in the journal *Society and Natural Resources*,
<http://dx.doi.org/10.1080/08941920701329702>

ABSTRACT: Deforestation is giving way to forest regeneration in some tropical regions. We investigate such ‘forest transitions’ in two biodiversity-rich countries. A case study near the Pacific Coast of Costa Rica shows how synergies between international conservation ideologies, neoliberal reforms, tourism (and associated real estate investment), and migration (as one strategy for livelihood diversification) lead to increased forest cover. We find these factors widespread in Costa Rica as a whole. In Madagascar, by contrast, while the factors are present to varying degrees, similar trends are largely absent. Many analysts compare tropical forest transitions to the forest history of modernizing temperate countries. While our findings may appear consistent with such models based on processes of modernization, they are comprehensible only with reference to contemporary forces of globalization. We conclude that globalization has diverse impacts shaped by regional contexts; these can include the benefits of reforestation but also the costs of social marginalization.

KEY WORDS: Costa Rica; deforestation; globalization; land cover change; Madagascar; modernization; reforestation; secondary forests; tropical forests

^a School of Geography and Environmental Science, Monash University, Melbourne, Vic 3800, Australia
(christian.kull@arts.monash.edu)

^b McGill University Department of Geography, Montreal, Quebec H3A 2K6, Canada (tom.meredith@mcgill.ca;
camellia.ibrahim@mail.mcgill.ca)

Over the past century, much attention has been devoted to the loss of tropical forests. As a result, it is no surprise that recent research documenting tropical forest expansion has attracted attention, whether on Caribbean islands like Puerto Rico (Grau et al. 2003) and Hispaniola (Rivera et al. 2000), in the highlands of Mexico and Central America (Hecht et al. 2006; Klooster 2003; Southworth & Tucker 2001), in the Amazon basin (Perz & Skole 2003; Rudel et al. 2002); or in India (Foster & Rosenzweig 2003).

These findings point to an incipient tropical ‘forest transition.’ A forest transition, as defined in a widely used theoretical model of forest change (Mather & Needle 1998; Rudel et al. 2005), occurs due to the impact of economic modernization on forest cover. This model posits that during a region’s initial development, increasing rural populations clear forest for agricultural expansion and extract timber for fuel and construction material. Later, a more modern industrial economy develops. Urban opportunities, combined with agricultural intensification, lead farmers to abandon marginal lands. Increased urban markets for forest products and political demand for forest conservation spur forest protection, regeneration, and plantation. Such forest transitions are widely documented during the 19th and 20th century modernization of Europe and North America (Foster et al. 1998; Mather et al. 1999).

The processes identified as causes of historical, temperate country forest transitions (e.g. Kauppi et al. 2006; Mather & Needle 1998) may not operate identically in contemporary, tropical developing areas affected by globalization (Hecht 2006; Klooster 2003). In this paper, we investigate forest change and globalization in Costa Rica and Madagascar, two biodiversity hotspots. Both countries suffered serious levels of forest loss during the 20th century. We begin with a detailed local assessment of the Guabo Valley near the central Pacific coast of Costa Rica, where we identify four specific processes leading to forest cover change: the impacts of neoliberal economic reforms, labor out-migration, growing tourism and expatriate land acquisition, and, lastly, local manifestations of international conservation ideologies. We then look more generally at the two countries to determine the extent to which these processes may influence forest cover change in different political, cultural and ecological settings. Costa Rica now enjoys a global reputation for slowing deforestation through innovative legislation and

programs targeting reforestation and conservation. Deforestation continues in Madagascar, but recent policies that make possible expatriate land investments and private conservation reserves provide informative analogues to the Costa Rican situation.

We come to two conclusions. First, although *modernization* has played a role in historic temperate area forest transitions and can illuminate analysis of contemporary transitions, we argue that the four processes described in the Guabo Valley fit poorly in existing forest transition models. We suggest that understanding the dynamics of contemporary tropical forest transitions requires reference to processes associated with *globalization*. Second, we find that local variations in the impacts of globalization – due in particular to location, political history, and social context – lead to different outcomes. While a forest transition is evident in parts of Costa Rica, similar factors look unlikely to cause an analogous turnaround in Madagascar in the near future.

Elaborating Models of Transition

Much of the tropical forest transition literature emphasizes driving processes linked to modernization. *Modernization* refers to a process of economic and social change demonstrated in the historical experiences of industrialized countries. It juxtaposes modern societies against traditional, pre-industrial societies, and identifies various processes (new technologies, integration into capitalist market systems, urban growth and industrialization, individual rationality) by which pre-modern societies become modern. The concept is closely associated with the development of capitalist liberal democracies and centers on the nation-state as the analytical unit (Giddens 1990; Rostow 1960).

Based on a macro analysis of FAO data, Rudel et al. (2005) describe two major paths to forest transitions, both linked to modernization: an ‘economic development path’ leading to marginal farm abandonment, and a consumption-driven ‘forest scarcity path’ leading to increased tree planting. Yet they also argue for more exhaustive studies, echoing Rudel et al.’s (2002) call for studies that are particular to the specific ecologies, politics, and economies of different countries. We endorse this need to recognize local and national particularities, but in doing so, like Klooster (2003) and Hecht et al. (2006), we find that new variables are revealed. These variables convey patterns that are best understood by considering the forces associated with globalization.

Globalization is an umbrella term for various processes and outcomes that reflect the increased interconnectedness of the world, whether in terms of people, capital, goods, or ideas. These interconnections are not just quantitatively larger than in the past, but qualitatively different, reflecting a deep integration (Dicken 2004; Harris 2002). For instance, improved transport and communication mean migrants can fulfill multiple roles at home and abroad, circulating between countries and remitting money home. Ideas, institutions, and culture flow rapidly through tight networks outside the purview of nation states. Nations no longer trade at arm's length with each other, but instead through complex webs of multinational firms and free trade agreements.

Considering forest transitions in the light of globalization, it is clear that the processes associated with modernization can continue. But they are altered, qualitatively and quantitatively, by increased interconnectedness across borders. For example, migration is not limited to rural out-migration to cities, but also includes multidirectional trans-national and cyclical migration. Likewise, marginal rural areas are becoming reconfigured as suppliers not of wood, but of environmental services, due to the combined tenets of neoliberalism and global environmentalism (Hecht et al. 2006; Rudel et al. 2005). In the research discussed below, we find that the real driving forces in the case of the Guabo Valley are not comprehensible without reference to factors of globalization.

What Drives Forest Change in the Guabo Valley, Costa Rica?

“There is more *briñon* [early-successional forest scrub] now because I abandoned the coffee plantation. There was no one to pick the coffee.”

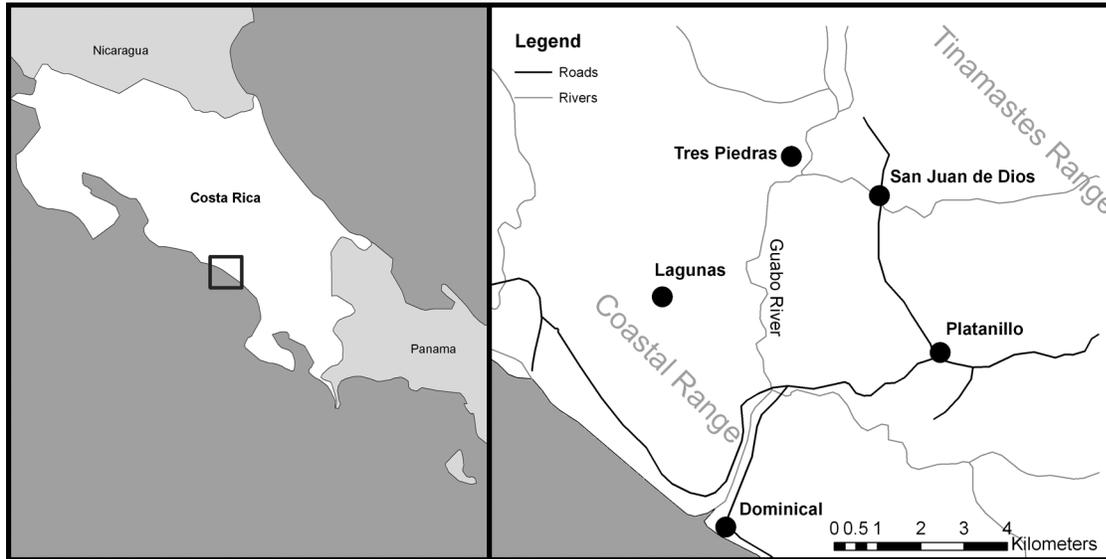
“There is more *briñon* now because people are going to the US and are selling the farms to Americans.”

“Look at Barú [farm]. Look at how pretty it is. Those that have bought land have planted. They prefer forest to cattle.”

(interviews, three households in Guabo Valley, Costa Rica, 2001-2)

From 1950 through the mid 1980s, Costa Rica's forests disappeared at almost 4% per year. Driven by international markets and supported by domestic credit and subsidy incentives, substantial areas were cleared for agricultural exports and pastureland. The government gave

Figure 1: Costa Rica and the Guabo Valley case study.

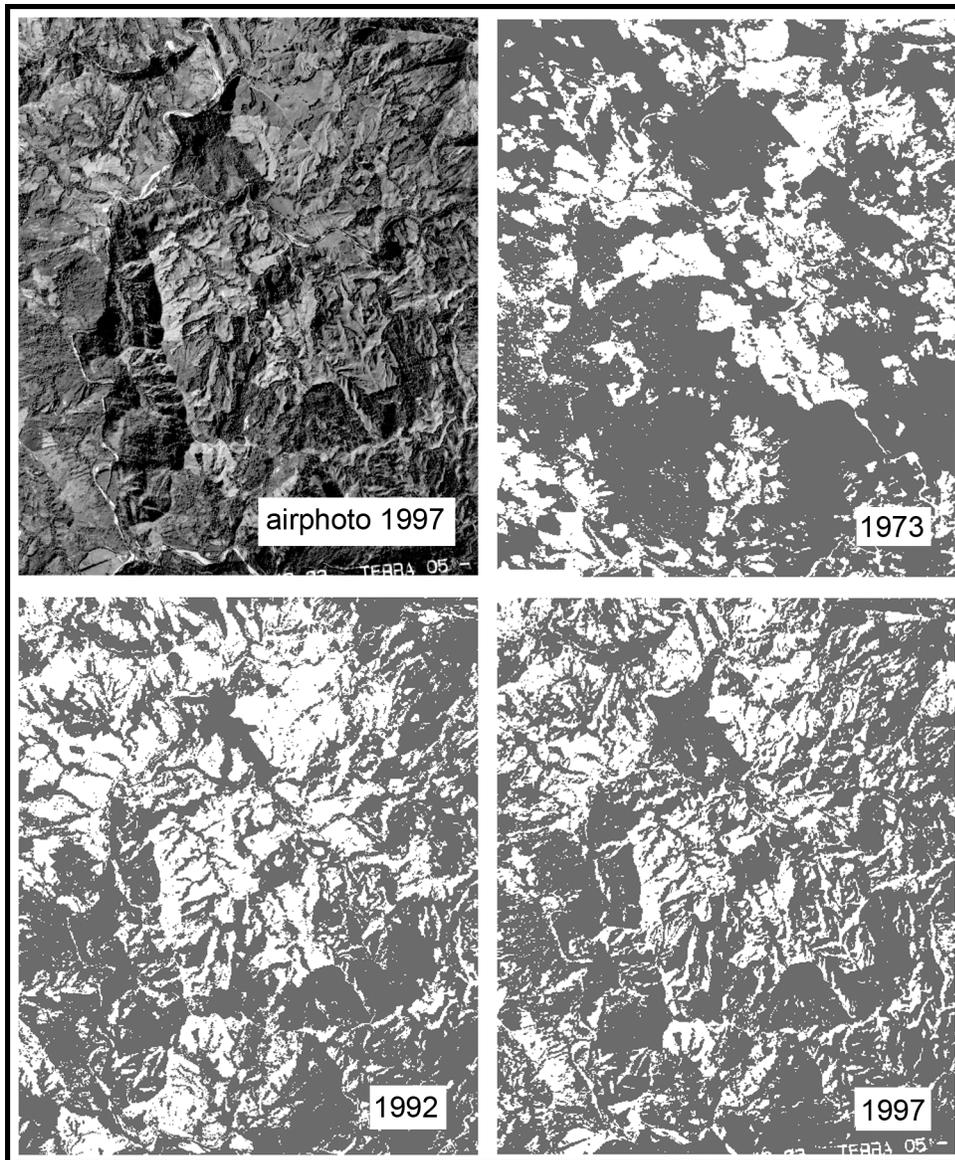


land rights for “improvements” such as cutting forest and maintaining a minimum herd size. Around 1990, the downward trend of national forest cover flattened out, and over the next decade it rebounded by 15% in some estimates (Kleinn et al. 2002).

To explore the local reality behind these national trends, we examined the processes operating in the Guabo Valley, near the central Pacific coast of Costa Rica (Figure 1). This involved a livelihood survey of all 45 Costa Rican households in the communities of San Juan de Dios and Tres Piedras, as well as key informant interviews with household members, local NGOs (non governmental organizations), absentee landowners, expatriate residents, and real estate agents. Surveys and interviews were conducted between 2001 and 2003. Forest change was assessed from oral testimonies and analysis of aerial photographs covering a 25-year period (1973 – 1997). Georeferenced photos were subjected to a supervised classification of forest and non-forest area (Figure 2).

The Guabo Valley was settled beginning in the 1940s, encouraged by policies to relieve population pressures elsewhere. Deforestation accelerated beginning in the 1960s with incentives to expand cattle ranching. Today, patches of old-growth seasonal tropical moist lowland forest are concentrated on the steepest slopes and in ravines. Pasture occupies flatter land, while

Figure 2: Forest cover change in Guabo Valley from 1973 to 1997. Based on supervised classification of rectified air photographs of 44.5 km² area centered on the two main communities in the valley, Tres Piedras and San Juan de Dios. Source of photos: IGNCR.



patches of secondary forest cover abandoned and fallowed fields. Most houses have small gardens. Aerial photos demonstrate forest cover change over recent decades (Figure 2). Large, connected forest patches visible in 1973 become smaller and increasingly fragmented by 1992, due to pasture expansion. During this period, the area under forest cover declined by 10.6%.

From 1992 to 1997, however, a resurgence of both scrub and taller tree stands is visible. In just five years, forest cover increased by 10.4%.

What drives this turnaround? Removal of government subsidies means that the valley – with its steep topography, poor road infrastructure, and localized land degradation – has become economically marginal for agriculture. As a result, wealthier landowners have focused on cattle. This has led to some forest thinning, but appears to support the fallowing of fields elsewhere through the creation of off-farm employment: “People here work as day laborers on cattle ranches; those people can afford to leave some of their own land forested” (interview notes). Most *campesinos* diversify into off-farm activities; 85% of households reported working less on their own farms than in the past. Many work as domestic servants or caretakers on expatriate properties, as construction workers, or in the service sector along the coast. Four out of every five households had at least two family members with salaried off-farm or non-farm jobs, and most (84%) linked these opportunities to an influx of foreigners and the tourism industry. In addition, about one-quarter of households interviewed had family members working in the United States, and remittances form important income for those who remain. As a result of *campesino* livelihood diversification, fields are fallowed and forests regrow.

Although some leave permanently – at least 35 families were reported to have left the valley between 1992 and 2002 – and some take advantage of the real estate boom to sell their land, the countryside is not emptying completely. Instead, *campesinos* diversify their sources of income and hold on to land to ensure food needs are met, to support the family as husbands and sons travel abroad, to pay off debts incurred financing migration, or as a financial investment.

Forest regeneration is influenced by both tourism-related property investment and recent forest conservation activities based on private lands. Indeed, the air photo analysis revealed that new tree cover was concentrated in areas where foreigners have purchased land and environmental NGOs have become active. Fourteen realtors have offices in the nearby tourist hub of Dominical, with, at the time of writing, at least 430 properties listed.¹ These range from luxury homes, to building sites of less than 1 ha, to farms of over 400 ha. Expatriate land purchases are concentrated on the coast, but they have increased inland since the early 1990s. Between 1992 and 2003, an estimated 76 foreigners – representing the United States, Canada, Europe, and a number of Latin American countries – purchased land in Lagunas, Platanillo, and along the road to San Juan de Dios (interview notes).

Real estate companies actively market an idyllic lifestyle image, advertising attributes such as ocean and “jungle” views, private waterfalls, solitude, and “tropical paradise”. One new arrival in Lagunas stated that she came here to “do something – to help nature and not sit in the States and give donations to The Nature Conservancy” (interview notes). Properties purchased for residential or holiday purposes are typically re-vegetated to fit the owners’ perceptions of a “jungle” landscape. Companies and non-profits offer technical advice on reforestation; several planned developments advertise plans to establish conservation easements to “preserve the rainforest.”² These aesthetic preferences, combined with rising prices for forested land, have encouraged some *campesinos* considering selling land to deliberately fallow their holdings (ASANA & TNC 2000; c.f. Brockett & Gottfried 2002).

Land in San Juan de Dios and Tres Piedras is less attractive to the majority of foreign buyers because the area lacks infrastructure and easy beach access. However, the modest land sales in the valley have resulted in pockets of forest cover expansion. Of seven landholdings purchased by foreigners here by August 2001, forest cover has increased on all but one, a cattle ranch. The other properties are an eco-tourism development, a cattle farm with two-thirds of its land in secondary forest, three large private vacation properties, and a research station for a non-profit environmental organization.

NGOs play a key role in implementing a global conservation agenda at the local level. The organization that owns land in the Guabo Valley, Tropical Forestry Initiative, was established in 1992 by several North American academics and professionals. They run a tree nursery, research forest succession on abandoned pastureland, and supervise reforestation on numerous properties – most owned by expatriates (Leopold et al. 2001). A second regional NGO, *La Asociación de Amigos de la Naturaleza del Pacífico Central y Sur* (ASANA), was founded locally in 1987 and receives funding from national and international sources. ASANA promotes the conservation of the Paso de la Danta biological corridor, runs projects for water conservation and wildlife protection, facilitates the registration of properties in a national payments for environmental services program (described later), and helps landowners to establish reserves and easements (interviews; ASANA & TNC 2000).

Four Proximal Factors of Change

The Guabo Valley is experiencing a forest transition driven by a marginal agricultural economy, local livelihood diversification, an influx of expatriates, and the presence of NGOs working to promote conservation. Superficially, this fits with forest transition models based in modernization, yet it is clearly comprehensible only with reference to the local idiosyncrasies and contemporary forces of globalization: neoliberal economic reforms, transnational migration, growing tourism, and international conservation ideologies. We elaborate on these factors below.

First is the circulation, spread, and adoption of neoliberal economic ideas. Neoliberalism is “a global project over the past few decades to reconfigure economic and political governance in line with ... classical liberal theory,” including faith in the market and civil society, and hostility to the state (McCarthy 2006, p. 87). It is both a globalized *idea* – pushed through institutional networks like the Bretton Woods Institutions – and a widespread *outcome* seen in policies like trade liberalization, privatization of state assets, outsourcing of state services, and opening of markets for a wide variety of goods and services. Neoliberal policies can affect forest cover by influencing agricultural production and markets, by encouraging market-based instruments to encourage conservation (as described for Costa Rica below), or by supporting the privatization and formal registration of land (as described for Madagascar below).

The *second* relevant facet of globalization is labor migration. Pushed by marginal rural economies and pulled by employment opportunities, the rural poor seek new livelihoods in cities and in foreign labor markets. Flows of migrants from Central America to the United States, Africa to Europe, and India to Arabia are indicative of a burgeoning global labor market. What makes such migration not just part of modernization, but also characteristic of globalization, is the deeper links maintained between sending and destination countries – such as remittance flows, cyclical migration, and frequent communications. The literature is divided on whether migration undermines agricultural systems in sending regions (triggering labor shortages, reduced production levels, and field abandonment) or whether return flows of new ideas and remittances are targeted to agricultural investments (Jokisch 2002). Hecht et al. (2006) found that areas of high remittance income correlate with areas of forest expansion in El Salvador.

The growth in international tourism is a *third* relevant facet of globalization. Cross-border tourist visits have grown from circa 25 million in 1950 to over 700 million after 2000, a 6.5% annual rate of increase (WTO 2004). Linked to this growth – and made possible by

liberalized flows of capital and openness to foreign investment – is a boom in investment in overseas holiday or retirement properties, especially in regions valued for environmental and recreational amenities (Torres & Momsen 2005; Truly 2002). Tourists and real estate investors add to a suite of stakeholders transforming landscapes through private conservation initiatives (Ankersen et al. 2006); they do so directly and also indirectly, by spurring local economic diversification into non-farm activities (Stem et al. 2003).

The *fourth* aspect of globalization is the international environmental agenda, as set by the Brundtland Commission and multilateral environmental conventions. Ideas of sustainable development and biodiversity conservation have global circulation and implementation, pushed by a wide variety of interlinked actors. As a result, forests are no longer just the domain of state forest bureaucracies; now, environment ministries, aid agencies, international environmental NGOs, scientists, and communities all aim to influence forest management across nation-state borders (Bertrand et al. 2006).

How widespread might these factors be at the national level in Costa Rica, and in another developing biodiversity-rich tropical country, Madagascar? The next sections address this question.

Globalization and Forest Change in Costa Rica

There is a turnaround in forest cover in Costa Rica, with forest resurgence identified not just in the Guabo Valley, but also elsewhere (Arroyo-Mora et al. 2005; Brockett & Gottfried 2002; de Camino et al. 2000; Kleinn et al. 2002; Sierra & Russman 2006; Snider et al. 2003; Stem et al. 2003). How have the factors described above operated nationally?

Struck by a debt crisis in 1981, Costa Rica was the first Latin American country to default on its foreign loans. It subsequently adopted neoliberal policies, pushed by International Monetary Fund structural adjustment programs and World Bank lending policies. The government reduced trade barriers, eliminated crop price supports, ended consumer subsidies for basic grains, privatized state assets, and increased opportunities for private-sector involvement. The welfare state of the 1950s-1970s was dismantled, including its agricultural credit programs, price subsidies, and cooperatives. Policies refocused on export-oriented, non-traditional and high-value crops and on the manufacturing sector (Edelman 1999).

These reforms, and the exposure to competitive and volatile international markets they facilitated, deeply impacted small farmers. In response, rural households often diversified their livelihood portfolios to include wage labor, micro-enterprises, involvement in the tourism industry, and migration (Edelman 1999; Sick 1997; Sierra & Russman 2006). Costa Rica received over US\$ 329 million in worker's remittances in 2004, much of it from the United States where at least 70,000 native-born Costa Ricans live (Census Bureau 2002; World Bank 2005). Such changes to rural livelihood strategies are associated with the progressive abandonment of pastures and marginal farming areas (de Camino et al. 2000; Hecht et al. 2006; Kleinn et al. 2002).

While some rural Costa Ricans leave, tourists and expatriate land-buyers arrive. Tourism grew steadily from the early 1960s (e.g. 49,000 in 1962) to the mid-1970s, reaching a plateau of circa 300,000 visits a year. Tourism boomed again from the late 1980s, and arrivals increased to over 1.1 million by 2001 (Europa 1964-90; WTO 2004). By 1993 tourism had surpassed both coffee and bananas as the most important source of foreign exchange. With few restrictions on foreigners owning land, tourism has facilitated a boom in foreign property investment. At least 20,000 – perhaps over 50,000 – US citizens live in the country, including many retirees.³ In popular areas – near coasts and parks – land values have risen and foreigners have invested in not just vacation properties but also ecotourism businesses and private reserves (Ankersen et al. 2006; Moragrega Martín 2004; c.f. Truly 2002).

Over the same time period, a rise in environmentalism within the Costa Rican population echoed growing global concern. Earlier attitudes that equated land clearing with “improvement” started to give way to valuing forest cover as a patrimonial heritage and biodiversity as economically profitable vis-à-vis the tourism and pharmaceutical industries. Foreign players, however, play an important role. Foreign environmental NGOs and bilateral aid donors fund and implement conservation projects together with their Costa Rican counterparts; scientists lobby locally and abroad for action; and tourists spur an entire industry devoted to images of pristine nature (Campbell 2002). Efforts by a wide variety of actors – local and foreign – have rapidly established a network of 171 parks and reserves that aim to protect land from further deforestation. This network includes 65 registered private wildlife refuges, covering over 185,000 ha, to which one can add a substantial number of unregistered private reserves.

Conservation easements are also growing in popularity: for example, by 2005 the CEDARENA Land Trust had helped establish 78 easements covering over 3,000 ha.

As early as 1979, in recognition of the extent and rapidity of deforestation, the government directed tax subsidies to large landowners for reforestation. This evolved into incentive programs targeting smaller farmers. Around 140,000 ha were enrolled by 1997, but participation was often low and long-term results uncertain (Thacher et al. 1997; de Camino et al. 2000). In the mid-1990s, these policies were reshaped, informed by neoliberal notions of decentralized forest management, privatization, and market-based instruments (Brockett & Gottfried 2002). Forest policy – encoded in the 1996 Forestry Law – promotes forest conservation through innovative payments for environmental services including carbon sequestration, watershed protection, and biodiversity conservation. Landowners sign a 5 to 20 year contract with the government, agreeing to either protect forest cover or engage in reforestation. Funding for this program comes from a 3.5% fossil fuel tax, private sector and international donor contributions, a World Bank loan, and the sale of carbon offsets to industrialized countries. By 2001 5.5% of the national territory was receiving payments for environmental services, with over 4,400 participants, and demand has consistently outstripped available funds (Zbinden & Lee 2005). Such payments for environmental services clearly facilitate field abandonment in marginal zones already affected by agricultural liberalization (Sierra & Russman 2006).

Globalization and Forest Change in Madagascar

Neoliberal reforms, labor out-migration, growing tourism, and global conservation ideologies appear to have had an effect on forest cover nationally within Costa Rica. There is no analogous forest transition in Madagascar, another hotspot for tropical biodiversity and deforestation. The only area of documented forest expansion is the central highlands, where areas with exotic pines, eucalypts, and wattles expand at the expense of grassland under a straightforward modernization pathway of state encouragement and a profitable wood fuel market (Bertrand 2004; Kull 2004). Has Madagascar been exempt from the four factors of globalization? To answer the question, we draw on literature, analysis of legislation, correspondence with key actors, and twelve years of field observations in Madagascar.

The loss of Madagascar's forests has been of concern for over a century. Over two-thirds of the "original" rainforest located along the eastern escarpment has been cut, largely due to colonial era logging and subsistence-oriented shifting cultivation. Meanwhile, the rapid expansion of maize cultivation for domestic and overseas markets has threatened the drier southwestern forests (Aubert et al. 2003; Kull 2004).

Like Costa Rica, Madagascar defaulted on its loans in 1980 and came under the influence of the Bretton Woods Institutions, thus beginning a program of neoliberalization. However, while the resulting policies reflect the Costa Rican experience – currency devaluation, government austerity, reduced food subsidies, lowered trade barriers, privatization of state monopolies – Madagascar differed both in its starting point (a much more socialist, dirigiste model) and its pace of reform (very partial and gradual). Reforms were long blocked by conflicting political agendas, instability, and droughts. The pace changed in 2002, when Marc Ravalomanana, a business tycoon, became president. He fast-forwarded the privatization of parastatals, the creation of export processing zones, and fuel liberalization (EIU 2004).

In contrast with Costa Rica, most Malagasy farmers are not beginning to abandon fields in marginal regions as a result of neoliberal reforms and alternative livelihood opportunities. Indeed, the push to cultivate new land still drives deforestation and grassland colonization (Aubert et al. 2003; Kull 2004). A key reason that liberalization has had little impact is that two-thirds of household production, on average, is used for subsistence (Barrett 1997). Although farmers have long migrated seasonally or permanently on the island to seek new lands or employment, this has not led to rural depopulation, mainly due to a rapid rate of population growth. Overseas migration – chiefly to France and Réunion – is significant, with recent estimates of a diaspora population of about 50,000. However, these migrants are largely students and professionals, not rural farmers (Crenn 1998). Other alternative rural livelihood options – like those associated with tourism – are still rare in Madagascar.

From the late 1970s into the 1980s, Madagascar was effectively closed to Westerners. By the 1990s, the island had re-opened its doors and gained a reputation as an exotic eco-tourism and beach destination. While growth has been strong (bar some disruptions due to instability, e.g. in 2002), numbers remain relatively small on an international scale: visitor arrivals grew from 6,000 in 1968, to 9,000 in 1977, to 50,000 in 1990, to 230,000 in 2004 (Europa 1964-90; WTO 2004). Most tourists come from France (52%), Réunion (10%), and other western European

countries (18%) (EIU 2004). The presence of increasing numbers of foreigners – including tourists, but also researchers, business and tourism investors, development workers, missionaries, and students – connects the island more and more to global trends.

As far as a land market, much of the island is under customary tenure arrangements. Formal, modern, state-sanctioned land registers cover only small areas, in cities and certain surveyed areas. As part of his neoliberal reforms, President Ravalomanana sought to modernize and liberalize land tenure. In a 2003 law, he reversed prohibitions on land purchases by foreigners.⁴ This law, however, posits very restrictive terms: each purchase must include an investment program of at least \$500,000; lot sizes are limited to 2.5 hectares⁵; and the government reserves the right to revoke the title should the investment program not be executed. To date, the program has only been used in a few cases.

While property markets remain elusive to foreigners, global involvement in conservation on the island has boomed in the past 20 years. Building on a century of concern for deforestation (which led, for example, to the gazetting of a dozen nature reserves in 1927), the country is now in the third phase of a multi-million dollar Environmental Action Plan. Signed into law in 1990, this plan is funded by foreign donors including the World Bank, United States, French, and German bilateral aid, and conservation NGOs like the World Wide Fund for Nature (WWF). Environmental actors – including international organizations, government agencies, bilateral donors, researchers, and local associations – now occupy a prominent position in the nation's political and social life (Gezon 2000). In such circumstances, recent governments have typically supported environmental agendas. At the 2003 Parks Congress in Durban, for example, President Ravalomanana announced an ambitious plan to expand the protected areas network to 10% of the national territory in just five years.

A recent reform – the legalization of private nature reserves, or *aires protégées volontaires* (APV) – reflects the meeting of global environmentalism with neoliberal ideas. The 2002 Protected Areas Management Code enables public bodies (like provinces or municipalities) and private individuals to apply for APV status for certain lands.⁶ In exchange for submitting to management advice from the government, the owner receives the legitimacy and publicity of government recognition. APVs are now being proposed in different contexts around the island. For example, the World Bank is pushing for the local community and tourism operators to use this approach for the protection of a small islet and reef near Nosy Be. Similarly, the Malagasy

NGO *Service d'Appui à la Gestion de l'Environnement* (SAGE) proposes to enroll a number of the projects it oversees – forests and lakes managed under community-based natural resource management legislation – into the APV network. This process, however, is barely off the ground and aims more at forest maintenance than regrowth.

Forest cover change in Madagascar is different from what has been observed in Costa Rica. Although all of the four factors are manifest to some degree, the local social and political reality has changed the nature of the outcomes. Forests are not (yet) resurging despite the presence in some form of the same forces of globalization.

Discussion

Similar processes are at work in Madagascar and Costa Rica, yet with crucial differences in strength and characteristics. The consequences with respect to forest transition are, as a result, very different; the unique contexts of each country matter. Madagascar is still very much rooted in subsistence agriculture, perhaps because it is so much poorer than Costa Rica (per capital GDP of \$9460 versus \$830, respectively). In addition, Madagascar only receives about one-fifth of the tourist numbers of Costa Rica while it is ten times bigger in land mass. Third, Madagascar's liberal reforms started from a different starting point and have moved slower – as a result, according to one index of economic globalization, Costa Rica is ranked 33rd versus Madagascar, which is 77th (Dreher 2006). Finally, Madagascar's continued lack of a widespread and fluid land market inhibits Costa Rica-style changes.

In particular, there are a number of obstacles to forest resurgence through expatriate property purchase in Madagascar. First, land tenure remains insecure in many places, stemming from the uncomfortable overlap of customary tenure systems and state-based property registration, and from the weak judicial and police system. Second, the 2003 legalization of foreign property purchase severely limits – through its investment minimum – the kind of middle-class second home purchase found in Costa Rica as well as small to medium sized eco-tourism operators. Third, the legislated restrictions on lot size largely eliminate the value of the 2003 law to international conservation NGOs with a mandate to purchase lands, such as The Nature Conservancy. Finally, Madagascar is more remote from potential buyers (largely in Europe) than Costa Rica is from North America.

Differences in neoliberal reforms, international conservation actions, tourism, and migration are essential to understanding the variations in forest trajectories between the two countries. These factors are all affected by global interconnections, and would be overlooked in any analysis based only on rural abandonment and wood scarcity.

Conclusion

Forests are regenerating in several parts of Costa Rica. A variety of locally-specific processes shape these land cover transitions: expatriate real estate investment, conservation incentive programs, environmental NGO actions, and rural socio-economic changes linked to evolving agricultural markets, out-migration, and livelihood diversification. The international interpenetration of ideas, people, and markets is crucial to telling the story of Costa Rica's forest transition, making it different from forest transitions described in Europe and North America. The assembled processes are best comprehended not as simply modernization, but as a manifestation of globalization.

In the historically and geographically different context of Madagascar, similar forces have not yet stopped rampant deforestation, not even in key ecotourism destinations. Initial conditions differ, as do the strength and impact of each force of globalization. So even though Madagascar recently legislated to allow foreign land purchase and private reserves, broad scale investment (either in homes or private reserves) is unlikely. Despite optimism, and the appearance of some new approaches to forest maintenance (but not yet regrowth) like forest tourism concessions, community-based reserves, and conservation incentive agreements⁷ it appears unlikely that Madagascar will become the “next Costa Rica.”

‘Globalization’ manifests itself in multiple ways and has diverse practical consequences. Forest re-growth can be one of them, but does this finding – that globalization can be “good” for the environment – suggest that it should be seen as a preferred solution to problems of deforestation? Rapid and unmitigated neoliberal reform has impoverished many (Sachs 2005). Migrant workers trading places with wealthy expatriates has a cruel irony that is not lost on those involved. Global tourism and conservation have their own legacies, not just of opportunities, but also displacement and cultural damage. Globalization-driven forest transitions must not be seen solely as “conservation success stories” visible from remotely-sensed images, but also as phenomena affecting societies and individuals. It would be inappropriate for policy makers to

assume uncritically that the driving forces should be reinforced or generalized simply to speed forest transitions.

Acknowledgments: Field research by C. Ibrahim in Costa Rica was funded by a Quebec FCAR grant to T. Meredith. The authors thank TFI, ASANA, M. Fallas Alfaro, M. Gamboa Calvo, M. Holland, Y. Maurer, and the residents of the Guabo Valley for support in Costa Rica, and Priya Rangan, Craig Thorburn, and four anonymous reviewers for excellent comments on the manuscript.

Notes

¹ Based on survey of realtors with online listings (www.dominical.biz/real-estate, last accessed May 18, 2006).

² See e.g. the Rainforest Preserve (www.rainforestpreserve.com) or Hills of Portalon Estates (www.hillsofportalon.com). Last accessed May 18, 2006.

³ Figures from Department of State (2005) and Anabelle Zumbado (Association of Residents of Costa Rica, pers. communications, 2006). There are also important expatriate communities from Canada, the rest of Latin America, and Europe.

⁴ Madagascar banned foreign ownership in the 1970s as part of efforts to shake off the lingering shackles of colonial domination. The new law is *Loi* 2003-028, with accompanying legislation *Loi* 2003-027, *Loi* 2003-029, and *Décret* 2003-879; it is advertised on a government website for investors (www.guide.gov.mg, last accessed 15 June 2006). Foreigners have always been allowed to take out 99-year leases, but these were infrequently allocated.

⁵ This limit applies to the tourism sector; lower limits are set for the financial (1 ha) and real estate sectors (1.5 ha).

⁶ Articles 71 to 74 of *Loi* 2001-05 (signed into law on August 7, 2002).

⁷ Examples include the leasing of state Forest Stations to eco-tourism operators (e.g. Antsampandrano, Ialatsara), private investments on land near existing parks (like Vakona Forest Lodge), community reserves like Alan' Anjà, or discussions among conservationists over the potential of initiating 'conservation incentive agreements' that pay land managers to maintain tree cover (Dr. Paul Ferraro, Cornell University, and Dick Rice, Chief Economist, Conservation International, pers. communications, 2005).

References

- Ankersen, T.T., K. E. Regan, S. A. Mack. 2006. Towards a bioregional approach to tropical forest conservation: Costa Rica's Greater Osa Bioregion. *Futures* 38: 406-431.
- Arroyo-Mora, J. P., G. A. Sánchez-Azofeifa, B. Rivard, J. C. Calvo, and D. H. Janzen 2005. Dynamics in landscape structure and composition for the Chorotega region, Costa Rica from 1960 to 2000. *Agriculture, Ecosystems and Environment* 106: 27-39.
- Asociación de Amigos de la Naturaleza del Pacífico Central y Sur* (ASANA) and The Nature Conservancy (TNC). 2000. *Proyecto Corredor Biológico Paso de la Danta*. Puntarenas and San Jose, Costa Rica.

- Aubert, S., S. Razafiarison, and A. Bertrand, eds. 2003. *Déforestation et systèmes agraires à Madagascar*. Montpellier, France and Antananarivo, Madagascar: CIRAD/CITE/FOFIFA.
- Barrett, C. B. 1997. Food marketing liberalization and trader entry: Evidence from Madagascar. *World Development* 25 (5):763-777.
- Bertrand, A. 2004. The spread of the Merina people in Madagascar and natural forest and eucalyptus stand dynamics. In *Beyond Tropical Deforestation*, ed. D. Babin, pp. 151-6. Paris, France: UNESCO/CIRAD.
- Bertrand, A., P. Montagne, A. Karsenty, eds. 2006. *Forêts Tropicales et Mondialisation*. Paris: L'Harmattan.
- Brockett, C.D. and R.R. Gottfried. 2002. State policies and the preservation of forest cover: Lessons from contrasting public-policy regimes in Costa Rica. *Latin American Research Review* 37 (1):7-40.
- Campbell, L.M. 2002. Conservation narratives in Costa Rica: Conflict and co-existence. *Development and Change* 33: 29-56.
- Census Bureau. 2002. Foreign born tabulation by year of entry. www.census.gov/mp/www/spectab/specialtab.html, accessed 15 Jan. 2007.
- Crenn, C. 1998. L'espace migratoire franco-malgache: d'une migration temporaire à une migration définitive. *Les Cahiers du Cériem* 3:17-30.
- de Camino, R., O. Segura, L. G. Arias and I. Pérez. 2000. *Costa Rica Forest Strategy and the Evolution of Land Use*. Washington, D.C.: The World Bank.
- Department of State. 2006. Background Note: Costa Rica. www.state.gov/r/pa/ei/bgn/2019.htm, accessed 15 Jan. 2007.
- Dicken, P. 2004. Geographers and 'globalization': (yet) another missed boat? *Transactions of the Institute of British Geographers* NS29: 5-26.
- Dreher, A. 2006. Does globalization affect growth? Evidence from a new Index of Globalization. *Applied Economics* 38 (10):1091-1110.
- Edelman, M. 1999. *Peasants Against Globalization*. Stanford, CA: Stanford University Press.
- Economist Intelligence Unit (EIU) 2004. *Madagascar Country Profile 2004*. London: Economist Intelligence Unit.
- Europa 1964-1990. *Europa Year Book*. London: Europa Publications.

- Foster, A. D. and M. R. Rosenzweig. 2003. Economic growth and the rise of forests. *The Quarterly Journal of Economics* 118:601-637.
- Foster, D.R., G. Motzkin, B. Slater. 1998. Land use history as long-term broad scale disturbance: Regional forest dynamics in central New England. *Ecosystems* 1: 96-119.
- Gezon, L. L. 2000. The changing face of NGOs: structure and *communitas* in conservation and development in Madagascar. *Urban Anthropology* 29 (2):181-215.
- Giddens, A. 1990. *The Consequences of Modernity*. Cambridge, UK: Polity Press.
- Grau, H. R. T. M. Aide, J. K. Zimmerman, J. R. Thomlinson, E. Helmer, and X. Zou. 2003. The ecological consequences of socioeconomic and land-use changes in postagriculture Puerto Rico. *BioScience* 53 (12): 1159-1168.
- Harris, R. L. 2002. Globalization and globalism in Latin America: Contending perspectives. *Latin American Perspectives* 29 (6): 5-23.
- Hecht, S., S. Kandel, I. Gomes, N. Cuellar, and H. Rosa. 2006. Globalization, forest resurgence, and environmental politics in El Salvador. *World Development* 34 (2): 308-323.
- Jokisch, B.D. 2002. Migration and agricultural change: The case of smallholder agriculture in highland Ecuador. *Human Ecology* 30 (4): 523 – 550.
- Kauppi, P.E., J.H. Ausubel, J. Fang, A. Mather, R.A. Sedjo, and P.E. Waggoner. 2006. Returning forests analyzed with the forest identity. *PNAS* 103 (46): 17574-17579.
- Kleinn, C., L. Corrales, and D. Morales. 2002. Forest area in Costa Rica: A comparative study of tropical forest cover estimates over time. *Environmental Monitoring and Assessment* 73: 17-40.
- Klooster, D. 2003. Forest transitions in Mexico: Institutions and forests in a globalized countryside. *Professional Geographer* 55 (2): 227-237.
- Kull, C. A. 2004. *Isle of Fire*. Chicago, IL: University of Chicago Press.
- Leopold, A. Carl, R. Andrus, A. Finkeldey, and D. Knowles. 2001. Attempting Restoration of Wet Tropical Forests in Costa Rica. *Forestry Ecology and Management* 142: 243-249.
- Mather, A.S. and C.L. Needle. 1998. The forest transition: a theoretical basis. *Area* 30(2): 117-124.
- Mather, A.S., J. Fairbairn and C.L. Needle. 1999. The course and drivers of the forest transition: The case of France. *Journal of Rural Studies* 15(1): 65-90.

- McCarthy, J. 2006. Neoliberalism and the politics of alternatives: Community forestry in British Columbia and the United States. *Annals of the Association of American Geographers* 96(1): 84-104.
- Moragrega Martín, L. 2004. Tourist expansion and development of rural communities. *Mountain Research and Development* 24 (3): 202-205.
- Perz, S.G. and D.L. Skole. 2003. Secondary forest expansion in the Brazilian Amazon and the refinement of forest transition theory. *Society and Natural Resources* 16: 277-294.
- Rivera, L. W., Zimmerman J. K., and T. M. Aide. 2000. Forest recovery in abandoned agricultural lands in a karst region of the Dominican Republic. *Plant Ecology* 148: 115-25.
- Rostow, W. W. 1960. *The Stages of Economic Growth*. Cambridge, UK: Cambridge University Press.
- Rudel, T.K., D. Bates and R. Machinguishi. 2002. A tropical forest transition? Agricultural change, out-migration, and secondary forests in the Ecuadorian Amazon. *Annals of the Association of American Geographers* 92(1): 87-102.
- Rudel, T.K., O. Coomes, E. Moran, F. Achard, A. Angelsen, J. Xu, E. Lambin. 2005. Forest transitions: towards a global understanding of land use change. *Global Environmental Change* 15 (1): 23-31.
- Sachs, J. 2005. *The End of Poverty*. London: Penguin.
- Sick, D. 1997. Coping with crisis: Costa Rican households and the international coffee market. *Ethnology* 36 (3): 255-275.
- Sierra, R. and E. Russman. 2006. On the efficiency of environmental service payments: a forest conservation assessment in the Osa Peninsula, Costa Rica. *Ecological Economics* 59 (1) 131-141.
- Snider, A.G., S.K. Pattanayak, E.O. Sills, and J.L. Schuler. 2003. Policy innovations for private forest management and conservation in Costa Rica. *Journal of Forestry* 101 (5) 18-23.
- Southworth, J. and Tucker C. 2001. The influence of accessibility, local institutions, and socioeconomic factors on forest cover change in the mountains of western Honduras. *Mountain Research and Development* 21 (3): 276-283.
- Stem.C, J. P. Lassoie, D.R. Lee, D. D. Deshler, J.W. Schelhas. 2003. Community participation in ecotourism benefits: the link to conservation practices and perspectives. *Society and Natural Resources* 16: 387-413.

- Thacher, T., D.R. Lee and J.W. Schelhas. 1997. Farmer participation in reforestation incentive programs in Costa Rica. *Agroforestry Systems* 35: 269-289.
- Torres, R. M. and J. D. Momsen. 2005. Gringolandia: The construction of a new tourist space in Mexico. *Annals of the Association of American Geographers* 95 (2): 314-35.
- Truly, D. 2002. International retirement migration and tourism along the Lake Chapala Riviera. *Tourism Geographies* 4 (3): 261-281.
- World Bank. 2005. World Development Indicators. Washington, DC: World Bank.
- World Tourism Organization (WTO). 2004. International tourist arrivals. www.world-tourism.org/facts/menu.html, accessed 28 Sept. 2005.
- Zbinden, S. and D.R. Lee. 2005. Paying for environmental services: an analysis of participation in Costa Rica's PSA Program. *World Development* 33 (2): 255-272.