

Commons management and ecotourism: ethnographic evidence from the Amazon

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Abstract: The paper evaluates the relationship between ecotourism and commons management. Social and economic impacts of ecotourism in an indigenous village in the Peruvian Amazon are considered in relation to opportunities for collective action to manage common pool resources, including wildlife, forests, and river habitats. Longitudinal, ethnographic data gathered over 12 years about a joint venture ecotourism project between a private company and a local community show three outcomes that support commons management and three outcomes that challenge it. The outcomes in favor of commons management include: direct economic returns that act as conservation incentives, strengthened organization resulting from participatory management of ecotourism, and expanded networks of support from outside actors. Outcomes that are challenging the potential for collective action include: direct economic returns that enable expanded individual production and extraction, a new spirit of individual entrepreneurship that threatens to debilitate traditional social relations and institutions, and a conservation ethic that fosters dualistic thinking about people and nature and the zoning of places where resources are used vs. where they are preserved.

Keywords: Amazon, community enterprise, common pool resources, conservation, ecotourism

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I. Introduction

For many rural and indigenous communities, ecotourism has become a doorway to the global economy. As local residents develop lodges, hiking trails, and interpretive activities for visitors, they are gaining a foothold in capitalist markets and bringing returns directly to their communities. For better or for worse, these returns have profound effects on environments, wildlife, cultural traditions, and other common pool resources (Campbell 1999). Optimists have identified ecotourism as a form of sustainable development that has the potential to enhance local livelihoods while also revitalizing cultural identity, empowering marginalized peoples, and conserving biodiversity (Honey 1999; Scheyvens 1999; Wearing and Neil 1999). Sceptics argue that ecotourism is little more than conventional capitalism with a veneer of socially and environmentally responsible rhetoric (Isaacs 2000; Duffy 2002; Cater 2006; Meletis and Campbell 2007). Whether ecotourism is a silver bullet or fool's gold (Landell-Mills and Porras 2002), panacea or Pandora's box (Kruger 2005), the question of how ecotourism affects the commons merits greater attention. When common pool resources like wildlife, forests, and landscapes are commodified through ecotourism, they shift from being solely local commons to global commons. In the process, they become more difficult to manage. Also, the ways in which they are used, perceived, and governed shift. No longer the domain of local needs and practices, they enter the desires and imaginations of outsiders – tourists, environmentalists, NGOs, and others. As the network of users expands, the co-management of these resources becomes more complex too (Carlsson and Berkes 2005).

Though common pool resource management and ecotourism development have each been the focus of intensive research for the past twenty years (Weaver and Lawton 2007; Poteete and Ostrom 2008), relatively few scholars have examined linkages between the two. Is ecotourism more likely to emerge in places where resources are owned communally? Or do ecotourism projects tend to be more successful, at least in terms of profits, where common pool resources are managed under private or state control? What are the effects of ecotourism on common pool resources? Does ecotourism strengthen or disable local institutions for management? Do particular kinds of resource management enable the development of ecotourism? While a number of scholars have initiated research on these questions (Young 1999; Kellert et al. 2000; Campbell 2002; Moreno 2005), analyses of the mutually reinforcing (or corroding) effects of ecotourism development on commons management are relatively scarce.

Common-pool resources share two characteristics that have direct relevance to ecotourism. One is the difficulty of exclusion or controlling access to potential users, and the other is the fact that any resource user can subtract from the welfare

of all others (Ostrom 1990; 2008). Ecotourism development can compound the problem of exclusion by opening common-pool resources to tour operators, tourists, and other outsiders. By expanding the numbers of users while also increasing revenues for (and access to) new technologies, ecotourism can also create conditions that accelerate subtraction. In this way, despite ecotourism's conservation goals, this quintessential form of sustainable development may instead destabilize resource management institutions. Alternatively, ecotourism may provide precisely the right economic incentives and social conditions to strengthen collective management of resources.

Thus, an analysis of ecotourism and commons management must include a focus on the ability of local residents to act collectively to control problems of exclusion and subtraction. The strength of collective action also determines how effectively communities can monitor their resources, especially those being exploited for ecotourism, establish rules for use and conservation, and sanction rule-breakers (Ostrom et al. 1999; Pretty 2003). Finally, collective action affects whether and how local communities are able to cope with the broad, structural shifts so often associated with development projects like ecotourism, especially in subsistence communities. These include disruptions to daily life, new and unevenly distributed economic benefits for members of the same community, shifting values and knowledge sets, new forms of social hierarchies and corporate-like management systems, and the potential for conflict and corruption (Moscardo 2008). All of these changes imply subsequent adjustments to how commons are used, perceived, and governed (Agrawal 2001).

In this paper, I evaluate commons management in relation to ecotourism. I focus in particular on community-based ecotourism, with the aim of comparing how ecotourism both enables and debilitates local, collective action for resource management. A number of scholars have shown that ecotourism can provide local residents with economic incentives for conservation (Gossling 1999; Wunder 2000). However, other researchers have argued that the neoliberal tenets of ecotourism only serve to erode local traditions and signal quick demise of cultural and biological diversity (West and Carrier 2004). Is it possible that these countervailing outcomes might occur in the same location? Might the same ecotourism operation both support and undermine collective management of the same common-pool resources? I answer yes to both of these questions and substantiate the findings with ethnographic data I have gathered over 12 years in one indigenous community in the Peruvian Amazon. Here, local residents have partnered with a private tourism company since 1996 to build and co-manage an ecotourism lodge. I show how some factors of ecotourism have provided economic and social support for more effective management of common-pool resources while others have disrupted social cohesion and thus the potential for long-term, collective stewardship of the commons.

2. Study site and methods

The Department of Madre de Dios in southeastern Peru is a region of lowland Amazon rainforest, at the foothills of the Andes. The Native Community of Infierno is located several hours by motorized canoe from the capital town of Puerto Maldonado. The community encompasses 9558 hectares on either side of the Tambopata River, and was titled as indigenous territory by the Peruvian government in 1976. The land is communally owned by ~150 families (~500 people) of diverse cultural backgrounds, including Ese'ejia Indians, mestizos from other parts of the Amazon, and Quechua-speaking colonists from the Andes. People engage in a variety of subsistence and commercial activities in agriculture, forest gathering, fishing, and hunting. Like so many rural communities in the Amazon, Infierno receives little support from regional or national governments, has poor access to credit and extension services, receives low prices for produce, and has little infrastructure for education, health, and transportation. A primary source of economic activity since 1998 has been ecotourism.

In 1996, the members of the community entered a 20-year joint venture with a private company to establish an ecotourism lodge called Posada Amazonas (Figure 1). The partners split profits (60% to the community, and 40% to the company), and they share equally in lodge management. Initial investment in the lodge was \$510,000, plus community labor for construction, and a grant from the MacArthur Foundation of \$30,000 for training. The partnership has won several international awards, including the United Nation's Equator Initiative Award, for its efforts to bring the ideals of ecotourism to practice. They have also been the focus of the international media, including articles in *The Economist* (2008) and the *New York Times* (Friedman 2006). The lodge accommodates up to 60 guests, and annually hosts between 6000 and 7000 tourists from the U.S. and Europe who pay ~\$95 per person per night (which includes guiding services and three meals a day). In 2006 and 2007, the partnership generated net profits of US\$217,000 and US\$225,000, respectively.

As part of an ongoing study of ecotourism, local livelihoods, and resource management, I have lived in Infierno off and on for a total of 39 months during various periods of fieldwork in 1993–1994, 1996–1999, 2002–2003, 2006, and 2008. This has resulted in a longitudinal perspective on village life as people transition from subsistence to commercial production through ecotourism, and as they interact with the private company, environmental organizations, tourists, researchers, and other outsiders. By gathering qualitative and quantitative data in the same site year after year, I have gained deeper insights over time, both as a result of increased trust and rapport and of asking the same people the same questions repeatedly. The qualitative data have come through participant observation, field notes, key informant interviews, and focus groups. The quantitative data have been generated through semi-structured interviews with heads of households (n=204, over various periods). Interviews generally have lasted 2–3 h and have focused on socioeconomic characteristics of households



Figure 1: Posada Amazonas was built as a partnership between a private company and local community in 1996.

and ecotourism-related changes in respondents' families, social relations, and community.

When I began the study, the members of Infierno had just forged their partnership with the company to build and co-manage an ecotourism lodge (Stronza 1999). In subsequent years, I studied the challenges and opportunities that came with reconciling local subsistence needs with those of international tourists (Stronza 2005), mixing ecotourism development with conservation (Stronza 2007), the results of community management of ecotourism (Stronza and Gordillo 2008), and changing notions of cultural identity (Stronza 2008). In this paper, I recount ethnographic stories and insights that the people of Infierno and their partners have shared with me over the past 12 years. While the data are culled from different years of fieldwork, I synthesize them here in composite

fashion to evaluate how ecotourism development and its associated social and economic trends have affected common-pool resource management over time.

The six factors I identify as affecting common-pool resources are neither discrete nor exhaustive. At least a couple of them are overlapping and mutually reinforcing. I chose these six because they have emerged as the most salient over time. By “salient,” I mean they have been mentioned or discussed frequently in community assemblies, interviews, and informal conversations, both with me and between other people. I selected these six factors also because they are each pertinent to academic and policy discourses on ecotourism as a “tool” for conservation and “the question of the commons.”

3. Literature review

Many scholars have analyzed how tourism development creates new and often unequal social relations that reconfigure local residents’ sense of place, community, and identity (Pi-Sunyer and Thomas 1997; Leatherman and Goodman 2005). Tourism development triggers not only new sources of livelihood or economic activity, but also in the process, a reweaving of a community’s social fabric. Such changes are bound to have powerful effects on local valuations of cultural and natural resources and local institutions in place to govern the management of such resources.

Local communities are increasingly managing ecotourism operations on their own or in partnership with tour operators and NGOs (Denman 2001). Berkes (2008) has argued that partnerships with NGOs and other groups are especially important for fostering collective action across scales, in a globalized, “multi-level world” where commons can be managed only through cooperation at many levels of social and political organization. Indeed, in a multi-site study of community-based conservation projects, Seixas and Davy (2008) identified partnerships and capacity building as key “ingredients” for successful self-organization.

Environmentalists have long advocated for building capacities of local communities to play more central roles in conservation efforts (Brosius et al. 1998; Hackel 1999). In a recent issue of *Science*, Rodríguez et al. (2007, 756) argued that conservation efforts fail when “local conservationists have not been trained, or local institutions have not been developed with their own programs and funding.” Campbell and Vainio-Mattila (2003) maintain that urgent concern for conservation measures should not overshadow the need for community capacity and local governance over conservation activities. When community-based ecotourism is introduced, capacity building is needed to help residents exert control over their resources, such as wildlife, habitats, and cultural traditions, especially as these become transformed into attractions for outsiders. Among other things, capacity building may entail training in entrepreneurial skills so that people learn to capitalize on their ecotourism revenues and generate additional income through ancillary projects, such as handicraft production.

Ecotourism joint ventures between communities and private companies are increasingly common, especially in Africa and Latin America (Ashley and Jones

2001; Forstner 2004; Stronza and Gordillo 2008). In such arrangements, residents of local communities link their knowledge, skills, land, labor, and social capital with the investment capital, market know-how, and managerial experience of private tour operators. In the process, local leaders gain new understandings, skills, and capacities that enable them eventually to manage ecotourism on their own. In a broader sense, the companies bring the tourism industry and the global market, while people in local communities offer their long-held knowledge of ecology and traditional resource management systems. As such, these partnerships have the potential to enhance the management and conservation of common-pool resources.

4. Case study: ecotourism and the commons in Peru

4.1. Ecotourism development (1998–2008)

The number of tourists to Posada Amazonas has steadily increased from 2000 in 1998 to 4000 in 2002 to more than 7000 in 2007. One of 74 lodges in the Madre de Dios region, Posada Amazonas attracts 20% of the tourist market (Gordillo et al. 2008). Community members in Infierno have participated actively in the lodge's development, operation, and management. They planned and built the lodge with their partners, Rainforest Expeditions, and once the lodge opened, they filled most wage labor positions, including guides, who began initially as apprentices to professional guides from Lima and other parts of Peru.

Through all of these forms of engagement, the community has earned more than US\$2 million in profits since 1997 (Table 1). In 2007 alone, net profits from the lodge were \$135,000 (Table 2). This amount represented just the community's 60% share of the partnership's total profits that year, \$225,000. Additional returns have come through the sales of construction materials, handicrafts, and agricultural goods, salaries, awards, and donations. For example, the total earned from sales of locally-produced agricultural goods was \$29,770, and community handicraft sales totaled \$72,454. Salaries for housecleaners, boat drivers, kitchen and dining staff totaled \$567,837. A rotating pool of workers fills 18 of 21 of these full-time positions

Table 1: First 10 years: Financial Returns from the Ecotourism Venture to the Community.

	Total (1997–2007)
Net profits reinvested	\$310,737
Net profits	\$662,225
Net bar profits	\$117,730
Guides	\$195,894
Part-time staff	\$119,401
Staff	\$567,837
Handicraft sales	\$72,454
Agricultural sales	\$29,770
Sales of construction materials	\$215,000
Ethnobotany tour	\$87,030
TOTAL	\$2,378,080

Table 2: Net Profits Earned by the Community (60% of total).

Years	Net profits to community
1997–2000	\$15,439
2001	\$47,786
2002	\$28,000
2003	\$70,000
2004	\$109,000
2005	\$125,000
2006	\$132,000
2007	\$135,000
TOTAL	\$662,225

at the lodge. Guide salaries are calculated separately, as these skilled positions earn substantially more. Salaries for guides alone has totaled \$195,894 between 1997 and 2007, representing an increase from \$6000 when the lodge first opened and few local guides were prepared in language and interpretive skills, to \$54,727 in 2007 when there were nine local guides. The guides are among the biggest earners from ecotourism, in part, because they garner tips as well as salary. Many guides are former hunters who are skilled at finding and showing wildlife to tourists. One community member in particular has developed a reputation as a world-class bird-watching guide. At least one former guide works in Machu Picchu.

Profits are also channeled to increased social support in the form of an emergency health fund, care for the elderly, and loans for higher education in Lima. From that portion, 70–80% has been split among 150 families for their personal use (ranging from \$150 per household in 2001 to \$653 in 2006 to \$805 in 2007). These amounts represent 20–30% increase over the average household income. The remaining revenues are used to improve Infierno's infrastructure with works such as a secondary school, a computer facility, additional road access along side the community, and a potable water well and tank system. Relative to other community-based ecotourism enterprises in the Amazon, these economic returns are substantial. By comparison, the ecotourism lodge managed by the Matsigenka indigenous peoples in the same department of Madre de Dios, Peru, generates annual salaries of \$1100 staff and managers, net profits of \$900, and handicraft sales of \$1200. The total is equivalent to \$152 per household for 21 households (Ohl 2005). The Chalalan lodge owned and managed entirely by the Quechua-Tacana community earned \$32,000 to \$49,000 in 2003 (Robertson and Wunder 2005), and distributed an average of \$150 to each of its 100 households (Stronza 2006).

4.2. Identifying the commons

The community of Infierno and their ecotourism lodge are located in the buffer zone of the Tambopata National Reserve (274,690 hectares) and several hours downriver from the Bahuaja-Sonene National Park (1,091,416 hectares). Traditionally the entire watershed, now identified by conservationists as a “biodiversity hotspot”

was homeland to the Ese'ejá. Recent research by Ocampo-Raeder (2006) reveals that the park itself, though now uninhabited, reflects a long history of human use and management (Figure 2). Just north of the community is a road that leads from Puerto Maldonado to the Andean city of Cuzco. For decades, the road has been just dirt and gravel, barely passable in the rainy season, and used primarily to transport goods between the two cities. Forest clearing along the road is the result of colonization by small farmers, ranchers, and gold miners.

Recent plans to pave the road as part of the Inter-Oceanic Highway will connect Infierno and this remote region of the Amazon with major coastal markets in Peru and Brazil. Similar road construction plans exist to connect cities to the western Amazon in Bolivia, a change that will have significant ecological-social ramifications in the coming decades. Conservationists expect accelerated deforestation associated with commercial exploitation such as logging, gold mining, expansion of ranching, coca cultivation, and wildlife trafficking (Alvarez and Naughton-Treves 2003; Naughton-Treves 2004). People will also be affected, as indigenous and long-established communities like Infierno are already facing challenges as new settlers claiming their territories (Coomes and Barham 1997; Takasaki et al. 2001). In some areas these processes are just beginning, and there is still time mitigate the effects. Many conservationists are advocating ecotourism to enhance local livelihoods, secure local control over land and resources, and protect forests near the highway. Infierno is a focal point of such advocacy and attention, in particular because it has a community-based ecotourism operation



Figure 2: The community of Infierno lies between the Inter-oceanic Highway and the protected areas of Madre de Dios, Peru.

already in place. Also, Infierno represents a buffer between unfragmented forests of protected areas in the south, and increasing land speculation, colonization, and deforestation in the north. The effects of ecotourism on common-pool resources in Infierno are of concern not only to the community, but also to the larger region.

The territory of Infierno itself is a commons. Since 1976, ~154 Ese'ejá, mestizo, and Andean families have shared legal tenure and title to 10,000 hectares of forested land, which straddles the Tambopata River. The community has maintained relatively large tracts of primary forest, despite its proximity to the road, just seven kilometers to the north. Yu et al. (1997) found that 792 hectares had been deforested, representing just 8.29% of the total land area. In 10 years, the percentage has increased, especially on the north side of the Tambopata where most families have settled and the community has sought to urbanize. However, compared to neighboring communities to the north and west of Tambopata, the scale and pace of deforestation has been slower. Within this area, the community maintains a 3000 hectare communal reserve.

Infierno's oxbow lakes and portion of the Tambopata River are important shared resources, especially as they represent critical habitat for a variety of local needs (alluvial soils for agriculture, fishing, transportation of goods and people, washing and bathing) and also vital habitat for countless plant and animal species people use for subsistence and commercial exploitation, and, importantly for this study, ecotourism. Of particular value for ecotourism are the highly endangered giant otters (*Pteronura brasiliensis*), as well as caimans and wading birds (Figure 3).



Figure 3: Oxbow lakes and the resident wildlife, including giant otters, are common pool resources managed for ecotourism.

Several ungulate species, including tapirs, pacas, capybara, and red brocket deer and primate species are also common-pool resources that are managed both for hunting and as tourist attractions.

What are the effects of the community-based ecotourism enterprise on the management of these resources? In the following sections, I describe the ecotourism enterprise in more detail, emphasizing community involvement and economic returns to date. I then identify three factors that seem to be supporting common-pool resource management in Infierno and three that represent new challenges.

5. Ecotourism and support for commons management

5.1. Economic returns

To date, the financial returns to Infierno have created direct financial incentives to manage common-pool resources. One of the first ecotourism-related decisions the community made in 1996 was to build the lodge in their 2000-hectare reserve they had established a decade before the ecotourism partnership was planned. This was an area where they had maintained a forest garden of medicinal plants and trees, and built a center for traditional healing and the revitalization of cultural heritage. This reserve, called Centro Ñape, after an Ese'ejá elder and shaman, is a commons where the members of Infierno prohibit hunting, timber harvesting, and farming. Soon after they started building the ecotourism lodge, the community agreed to expand the reserve to 3000 hectares. Thus, the very first action associated with ecotourism was the expansion of the protected commons. This was a decision made autonomously by the community.

The economic returns from ecotourism, both in the form of employment and income, have become direct incentives for the members of Infierno to manage their commons. Specifically, the lodge and its use of the community resources has prompted discussion and collective planning of how wildlife, habitats, and even cultural traditions should be used, showcased (or not), and protected. The members have also discussed who should have access to the resources, under what conditions, and how they should be managed in new or old ways in the context of ecotourism. For example, some species gained new value in ecotourism while others lost value. With changing valuations, decisions about management entered community discussions.

Two examples are Harpy eagles and giant otters, species of particular interest to ecotourists, though of relatively little direct value to hunters, either for game meat or skins or feathers. When a community member locates an active Harpy nest on his or her parcel of land (held under use rights, as all land is community owned), the individual earns a standard fee for every tourist given the opportunity to see it. The fees are charged until the eagle chick fledges, a period that lasts up to nine months. This nest watching program has become an incentive for individual management of Harpy eagles, though the rules were determined collectively by the members of Infierno in the interest of supporting their commons and their

community-based ecotourism operation. Similarly, giant otters in the community's oxbow lakes are managed collectively. Prior to ecotourism, the otters were sometimes hunted for their pelts or because fishers treated them as competitors. Once the lodge was built, the community began to establish clearer regulations on when the lake could be fished, what kinds of equipment could be used, and who would have access.

Employment at the lodge has also had direct, economic effects on resource use and commons management. Once people start working at the lodge, they tend to shift out of other productive work. This is primarily because workers must live at the lodge, which is located several hours upriver from the center of the community and site of most peoples' farms and forests. Thus, workers no longer have time to cultivate their fields, hunt, or forage. Indeed, in the past 3–4 years, a trend among full-time staff, particularly guides, has been to leave their homes and farms altogether. When they are not working at the lodge, they reside in the town of Puerto Maldonado. The effect of this out-migration on commons management is unclear. People with homes in Puerto Maldonado tend to maintain their rights in the community, which include access to farmland and forests, the yearly share of tourism profits, and votes in meetings and decisions about the community. So far, workers' absence in day-to-day community life has not necessarily signified an abandonment of interest or involvement in the management of forests, waters, wildlife, and other resources.

5.2. Strengthened organization

In many ways, the members of Infierno have gained new management capacity through their involvement in ecotourism. In recent years, they have devoted considerable time to discussing and enforcing rules for how resources can be used in relation to ecotourism. When hunters were caught in the community reserve in 2006, community members gathered to determine appropriate sanctions, and decided to withhold the hunters' tourism profits for that year. More than determining how individuals should be sanctioned when rules are violated, people in Infierno have also gained capacity to organize themselves, combine resources, and work collectively to protect what they share.

For example, in 2003, before the Peruvian government announced new plans for completion of the Inter-Oceanic highway, members of the community applied for a concession to manage lands surrounding the oxbow lake, in part to protect the giant otters. Soon after awarding the concession to the community, the government granted access as well to another private petitioner who had sought permission to fish the lake. Leaders of Infierno joined with their business partners to challenge the concession. The request required political negotiation, money, and the support of other tour operators and organizations, including the Peruvian Society for Environmental Law. After several months of petitioning and payments of several thousands of dollars, which the community had set aside from ecotourism profits, the government revoked the fishing concession, and

granted the community and its partners an area of 2000 hectares to function as an ecotourism concession.

In 2008, the community initiated plans to leverage their experience and success to date with Posada Amazonas and build another location for visitors. They intend to create birding trails and other touristic activities around the lake. At the same time, they also began working to gain management control over a second oxbow lake that is on a contested area of land on the other side of the river. One side of the lake lies within Infierno's territory while the remainder is within the Tambopata National Reserve and used by a private tour operator. The opportunities to take tourists to the second lake, near the reserve, has galvanized community members to act collectively to secure their long-term access to and management of the lake. All of these efforts have required significant leadership and cooperation – skills people in Infierno have gained while managing ecotourism. Some of the impetus to act collectively came because residents had acquired new financial, political, and social capital from ecotourism. Some of it came from outside of the community as people saw their common-pool resources threatened by larger development on the horizon, specifically the Inter-Oceanic Highway.

As they are gaining and distributing profits from ecotourism, co-managing the operation with the company partner, and working with government to secure tenure over lands and even expand the boundaries, the residents of Infierno are also focused increasingly on defining clearly who is and who is not a member of their community. In the past, if a newcomer sought access to land for farming and membership in the community, the process for gaining admittance was relatively easy. With little more than a written request to the community assembly and participation in communal work parties called *faenas*, a newcomer could become a community member within a year. More recently, the process of defining who is in and who is out and what the entitlements are has become more codified and restricted. This is a process of overcoming the exclusion problem of the commons. At a meeting in 2006, delegates decided that new members should never be able to earn a share of ecotourism, though they may have opportunities to work at the lodge. Beyond 154 shareholders, they agreed, there should be no more. Also, members who do not work in *faenas* should receive just 30% of their share of annual tourism profits. New questions like these concerning membership (and exclusion) are emerging each year. For example, is it fair to pay shares to someone who has worked at another lodge, or who has recently married into the community, or who has attended meetings regularly but not participated in communal *faenas*?

As the rules about membership and benefits gain complexity, communal gatherings have gained formality. Leaders show new concern for punctuality and regular attendance. Whereas in the past, people would wander in and out of meetings, now the council locks the door five minutes after the start time and refuses to let latecomers enter. This new protocol reflects larger concerns for stronger organization and clearly defined and enforced rules. To this end, community leaders have even discussed using their tourism profits to hire a lawyer

to help them establish and codify bylaws. This new level of organization and management is also a result of practices gained from working at the ecotourism lodge. People have learned to follow work schedules, guidelines, and hierarchies that did not exist in their rural, subsistence economy just 10 years ago. Greater organization and clearly established and upheld rules may serve to strengthen collective action for management of the commons. As Baland and Platteau (1996) have argued, prior experience contributes to subsequent success in collective action for commons management.

5.3. Expanded network of support

People of Infierno had some experiences in collective action prior to ecotourism – such as in communal *faenas* to plant crops, build communal structures, and so forth. But they had little reason to work collectively to protect their common-pool resources before the advent of tourism or the construction of the Inter-Oceanic Highway. It is precisely through their engagement with the community-based enterprise that they were able to gain the skills, practices, and relationships to strengthen their organization for activities like expanding their communal reserve, securing rights to an ecotourism concession, or guarding and monitoring their oxbow lake.

Much of this increased capacity is related to a wider social network the community has entered since the lodge opened. Especially since 1998, the community has received support from a number of national and international organizations. Aid agencies and NGOs have focused their attention on Infierno as a target for investment and training in such things as conservation, leadership, micro-enterprise development, and handicraft development. The community has earned grants and awards from the World Bank, the Inter-American Foundation, and the MacArthur Foundation, among others. As Carlsson and Berkes (2005) note, NGOs form a kind of co-management network with communities and with the state and private sectors. These networks comprise many nodes and are animated by flows of resources and knowledge, including modern managerial practices (Roberts et al. 2005).

The community has collaborated with a number of environmental NGOs to co-manage their common-pool resources. With the Frankfurt Zoological Society, they established codes of conduct for viewing giant otters. The code prioritizes reproductive nests and foraging behaviors of the otters, keeping them inside a zone comprising half the lake area, which remains off-limits to community members and tourists. Conservation International has worked with the community on a wildlife monitoring program that tracks levels of pressure on wildlife due to hunting and tourism. Since 2005, community members have served independently as the wildlife monitors, gathering data from their own hunters, which Conservation International then analyzes. This expanded network of support represents a third factor in ecotourism that has favored commons management.

6. Ecotourism and challenges to commons management

6.1. Economic returns

Above, I identified “economic returns” as an opportunity favoring commons management, in part because such returns are providing both individual and group incentives to protect resources of importance to ecotourism. However, economic returns from ecotourism also represent a challenge to effective commons management. New income and employment have had countervailing effects on the resource management. Though new employment has been associated with declines in direct resource use, new income has enabled other forms of consumption. For example, some individuals have reinvested profits to expand agricultural production by hiring laborers and clearing more forest. In these cases, economic returns from ecotourism have exacerbated the “subtraction problem” of the commons. Moreover, despite clear economic incentives to protect wildlife for ecotourism, several hunters continue to break prohibitions on hunting wildlife near the lodge. These findings suggest that economic benefits alone may be insufficient to ensure long-term management of the commons.

When common-pool resources are commodified through ecotourism – or valued by their price over other considerations – then long-term protection of the plant, animal, habitat, or landscape rests precariously on its price relative to other resources. As the tourism economy is vulnerable to seasonal cycles and vagaries of the global economy, the price value placed on a resource may be the source of its demise rather than its long-term stewardship. Indeed, Agrawal (2003) has argued for greater attention to markets as a force that shapes the contexts in which common pool resources are governed. Increasing articulation with markets tends to have an adverse impact on the management of common-pool resources, especially as new demands change the incentives about what products to harvest, at what rates and with which technologies.

An example in Infierno is the *Dipterx* tree (known locally as the *shihuahuaco*). The species is prime nesting habitat for large macaws, which, in turn, are important species for ecotourism. That is, the long-term success of ecotourism in Infierno will rest in part on how often and how well tourists continue to see large macaws. However, the *Dipterx* is also the main species of hardwood people use to make charcoal. In 2008, many farmers in Infierno were cutting *Dipterx* to sell charcoal, even though they widely understood and acknowledged the importance of the *Dipterx* for supporting macaw populations and thus for supporting their own ecotourism operation. Nonetheless, the individual incentives to cut and sell *Dipterx* as charcoal were greater than those to protect *Dipterx*. An individual could earn twice as much from one tree than what he could earn in a yearly share of community ecotourism profits. Thus, while sometimes placing a price value on ecotourism species can provide the right incentives for commons management, too much reliance on price incentives can backfire if the price is not right.

6.2. Individual entrepreneurship

Examples of commons management I described in the section above depend on cooperation among community members. Yet, the ability to cooperate is precisely what is being challenged by a new discourse of individual enterprise and profit-gain in Infierno. Since the lodge opened, entrepreneurialism – or being an *empresario* – has entered the local lexicon. The discourse has become increasingly about capitalizing on what one has to earn even more, a goal and a skill people learned by co-managing the ecotourism lodge and through their interactions with NGOs.

Someone who is an *empresario* in Infierno is characterized as independent, capable enough to capitalize on earnings to earn even more, and generally on the path to wealth. The entrepreneurs tend to be admired, but there is concern about how such ambitions clash with traditional relations of equality, especially those of reciprocity and communal work (*faenas*). There is awareness that some individuals are earning much more while others are earning significantly less, or not at all. Some people have done this especially well, turning tourism profits into fish farms, bodegas, and other small businesses. As in most rural, subsistence communities where people generally engage in the same productive activities, Infierno has no tradition of social welfare, as there were few disparities.

Disparity is something they notice more now. Table 3 shows that among 14 households, mean annual income has increased in the past eight years. The median income, however, has decreased, suggesting that while some are earning a lot more, many are earning less. Some who are earning more are not the people most involved in tourism per se, but rather those who have opened new small enterprises with tourism earnings. For example, two men own bodegas. As now, more residents are purchasing a greater proportion of their food, the bodega owners, have been able to capitalize on this shifting pattern of consumption and multiply their own earnings.

While people in Infierno generally support ecotourism and are positive about new earnings, they are also beginning to question what these economic changes imply for their community. In repeated interviews with people since the lodge opened, people have defined “*la buena vida*,” or the good life. A minority have mention things like having money and material goods. The broad consensus contains words of peace, unity, and getting along with family and community. As the discourse shifts to entrepreneurship, and gaining the most for oneself, there

Table 3: Change in Household Income between 1998 and 2006.

Year	n=14 Households	
	1998	2006
Mean Income	US\$3815	US\$6621
Median Income	US\$3415	US\$2717

are simultaneous discussions about “how do we get along with each other?” How, essentially, do we maintain our *buena vida*?

These questions came to the fore in a communal meeting in 2006. People had gathered to discuss dividing tourism profits. Though in the past, everyone had received an equal share, in this meeting, they became embroiled in debates about the fairness of that, especially because some had been able to turn those equal shares into disproportionately bigger profits. They argued whether instead communal profits should be invested in purely communal endeavors. They ultimately decided that no one should receive a share, but rather all of it should go into a communal fund. They justified this decision as necessary for getting along as a community, a prerequisite for a *buena vida*.

Acknowledgements of disparity and open concern for cohesion suggest challenges for commons management in the context of ecotourism. As people shift out of subsistence into commercialization, specialization, and capital accumulation, the differences between people become more pronounced and feelings of trust, reciprocity, and willingness to cooperate may decline. All of these have effects on management of the commons, especially in handling the exclusion problem. Baland and Platteau (1996) and Agrawal (2003) have identified shared norms as a facilitating condition for the sustainable governance of the commons. Thus, as the spirit of individual entrepreneurship threatens to debilitate shared norms, traditional social relations, and feelings of solidarity and cohesion, people in Infierno may find it increasingly challenging to manage their common-pool resources collectively.

6.3. People-nature dualism

Finally, a challenge to commons management in Infierno is a relatively new and dualistic way of thinking about nature, resources, and people. What is emerging in the community, largely as a result of ecotourism, is a mindset that reflects western notions of reserves, or places that are off-limits for human use. By extension, the areas outside of reserves are increasingly characterized as open for maximum use and development. For example, a man who cleared one of the largest tracts of forest for his agricultural field explained to me in 2007 that he intended to use his new earnings to expand his farm. He said, “We have our reserve. But outside of the reserve, we can clear all of our forest.” While these ideas reflect western notions of parks and also an entrepreneurial spirit of capitalizing on one’s earnings to expand production, they conflict with idealized notions of ecotourism as something that can build harmonious interactions between people and nature. It also uproots traditional notions of people, forests, and wildlife as interconnected.

Land use trends throughout the community, not just on individual farms, are a manifestation of the kind of conservation ethic people in Infierno have learned from their involvement in ecotourism, and by extension, their collaboration with outside conservationists. They have learned to protect and even expand reserves,

petition the government for ecotourism concessions, and monitor Harpy eagle nests and giant otters in oxbow lakes. In the process they have also gained experience in reinvesting capital to expand production, make plans to urbanize and zone their territory for new development. They have earned new income that enables them to purchase more, and they have learned more about what to purchase from their interactions with foreign tourists, tour operators, conservationists, and researchers. Some have even visited national parks in the U.S. and game reserves in Africa. These activities have generated new perceptions of about culture and nature. Their new understandings have fostered dualistic framing of the world – people, here; nature, there, and separation of places where resources are used from where resources are preserved (Cronon 1995; Jelinski 2005). This separation of people from nature does not serve goals of commons management so much as reify old and socially unsustainable patterns of preservation on the one hand and ecologically unsustainable exploitation on the other (Phillips 2003; West and Brockington 2006). Whereas commons management has a foundation of human use, traditional ecological knowledge, and adaptive management (Berkes 2003), this new dualism leads to disassociation from their commons and the inevitable decline of community institutions to manage them.

7. Conclusion

Community-based ecotourism enterprises lead to new resources, skills, understandings, social relations, concerns, and ways of seeing the world. My goal in the paper has been to describe social and economic results of ecotourism in a local village in the Peruvian Amazon. I then considered how these trends are working both in favor of and against collective action for managing the commons. I discussed three results of ecotourism that support commons management: direct economic returns for well-managed common resources, strengthened organizational capacity, and expanded networks of support from outside actors.

I also considered outcomes of ecotourism in this case that are debilitating to commons management, including the same economic returns that can improve commons management but are used instead to expand individual extraction, thus exacerbating the subtraction problem of the commons. An additional challenge is the spirit of entrepreneurship and individualism that is colliding with more traditional notions of “community” and what it means to have a good life. Finally, recent dualistic notions of people and nature may undermine the essential elements of commons institutions, namely knowledge of and intimate connection with resources based on regular and sustained use of them.

Commons management may be improved through community-based enterprises like ecotourism. It can strengthen networks and organizational capacities of communities. It can also generate economic incentives to manage resource use for sustainability. However, such social and economic boons for communities represent shifts that are not always easy to manage and that should be

examined with greater scrutiny. These shifts are twofold: first, new profits can also shift social relations in ways that threaten to unravel the fabric of community life and the strength of local cooperation. As cooperation is essential for stewardship of communal resources, our criteria for defining “success” may need to change; secondly, the kind of conservation ethic that emerges from a focus on economic benefits may reflect a traditional parks approach (islands of protection) rather than the idealized one purported as harmonious interactions between people and nature.

In conclusion, what we may take from this case is the idea that ecotourism is not merely a community-based enterprise that can generate revenues and conservation benefits for communities. It is also a driver of critical social change. It may succeed as a community enterprise; that is, in terms of profits, and yet fail to enhance quality of life or provide the foundations for effective commons management. What we need is more empirical case studies and the direct exchange of experiences between local leaders to gain understanding of how and why some community enterprises support commons management while others only seem to create new divisions.

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