

Testing the water, challenging the narratives of sustainable development: student volunteer research promoting public health in rural Panama in the shadow of an "eco-playground"

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Abstract

This article describes challenges faced by a team of interns and students working for a not-for-profit sister company of a private U.S.-based land development company planning to build a "sustainable city" in the Panamanian forest. Testing the contaminated water of a nearby village, the team demonstrated that residents have been living with water-related illness. Despite the indifference and conflicting aims of the parent company, potentially impactful social capital connections were made. The author reflects on these efforts within the critique of student "voluntourism." He also explores the role of social media in the production of narratives of sustainable development within the context of a poorly regulated land market.

Keywords: water access and water-related illness; sustainable development; medical anthropology; public health; tourism; voluntourism; social capital; social media narratives

Résumé

Cet article décrit les défis rencontrés par une équipe de stagiaires et d'étudiants qui travaillent pour une entreprise à but non lucratif liée à une société privée de développement immobilier basée aux États-Unis, qui prévoit de construire une «ville durable» dans la forêt panaméenne. L'équipe a testé des échantillons d'eau dans un village voisin, constatant qu'elle était contaminée et que les résidents vivaient avec des maladies liées à l'eau. Malgré l'indifférence et la position conflictuelle de l'entreprise, des connexions sociales importantes ont été établies, ce qui a permis de constituer du «social capital». L'auteur se penche sur cet exemple de «volontourisme» par d'étudiants. Il explore le rôle des médias sociaux dans la production de récits de développement durable, dans le contexte d'un système foncier mal régulé.

Mots-clés: accès à l'eau et maladies liées à l'eau; le développement durable; anthropologie médicale; santé publique; tourisme; le volontourisme; capital social; récits de médias sociaux

Resumen

Este artículo describe los desafíos de un equipo de estudiantes y pasantes trabajando para una ONG afiliada a una compañía particular estadounidense que está planeando construir una comunidad sustentable en un bosque de Panamá. Al hacer investigaciones del agua local, el equipo demuestra que los habitantes de un pueblo han estado viviendo con enfermedades que vienen de agua contaminada. El equipo logra crear "capital social" conexiones positivas a pesar de la indiferencia de la compañía particular. El autor reflexiona sobre estos esfuerzos dentro del contexto del fenómeno de estudiantes extranjeros que se presentan como "voluntarios turistas." También se explora el papel de los medios sociales en la producción de narrativas de desarrollo sostenible dentro del contexto de un mercado de tierras poco regulado.

Palabras claves: acceso al agua y enfermedades relacionadas con el agua; desarrollo sostenible; antropología médica; salud pública; turismo; voluntourismo; capital social; narrativas de medios sociales

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1. Introduction: frontiers of fulfillment and of obligations unfulfilled

A Panamanian eco-playground set in a rainforest valley where entrepreneurs and tropical cowboys are busy building the ultimate sustainable lifestyle.

Promotional material for *Tierra Sostenible*

Nobody does anything about it. It's kind of like the Wild West here. We're waiting for the Sheriff to come riding in with his six-guns, but where is he?

Local activist protesting land grabs by U.S. developers in Bocas del Toro, Panama (2011 documentary, *Paraiso for sale*)

The two quotes above reflect the contested nature of land development and environmental resource conservation in rural Panama. There is ambiguity in the social margins with regard to the state's responsibilities toward its citizens. Ninety percent of the land remains untitled, a land census has not been carried out since 1970, and a law that ensures ownership by possession for locals is routinely violated when that land becomes coveted by outside interests. Still, beyond fatalistic resignation by people who have seen projects come and go that purported to help them but ultimately generated wealth for others, there is growing popular discontent in Panama erupting in protest across the country and drawing international attention.

As a country with a poorly regulated land market, Panama attracts foreign developers. With abundant landscapes perceived as pristine, it also attracts investors seeking to enter the niche market for "sustainable" land development. It is destination increasingly popular among young people seeking adventure and following interests in progressive humanitarian issues including conservation, environmental justice, and public health. It offers special opportunities for transnational entrepreneurs in the market for "voluntourism", "ecotourism" and "service learning." But what happens when college interns participating in a program that is situated at the intersection of these three markets – land speculation, sustainable development, and tourism – identify a local environmental health problem that reveals state neglect and indifference from the transnational private sector? What efforts to build "social capital" are available to help the community assert rights locally while finding global allies? How can the "sustainability narratives" promulgated through social media imaging that recruited these students as a marketing tool be shifted to include citizenship claims to "access to clean water"? How does this example shed light on tourism's false promises and predicaments—for both economically underdeveloped communities affected by such programs and for individuals sincerely wanting to "make a difference?"

This article reflects upon my experience as thesis director for an undergraduate who worked with a research team of interns in Panama, for the not-for-profit sister company of a U.S.-based land development company. The internships were planned to tap the market for environmentally-conscious young travelers and college students desiring to experience life off the grid while giving service to the local community. The research team aimed to shed light on serious public health issues related to contaminated drinking water in a community situated in the shadows of the commercial company's speculative plans. While these plans were promoted under presumed principles of sustainable development, they included a proposal that would clear-cut at least 500 hectares of forest to accommodate new homes for 5,000-10,000 people. With its stated intention of building a sustainable city that would also act as a model teaching tool, the company touted its frontier location for both its private and not-for-profit ventures as appealing to those seeking individual fulfillment and a commitment to environmental solutions. The romanticized, marketable images of a societal and environmental frontier are promoted through social media by both the sellers and consumers of these ideas. For the people of the impoverished village situated adjacent to the company's land, "off the grid" means living without access to clean drinking water, with extremely limited access to health services, and living with water-borne illnesses. It means living outside the state's obligation to provide these basic services, a place of indeterminate responsibility on the frontiers of global capitalism.

One track within the non-for-profit's study abroad program focused on medical anthropology research in the village and operated under the philosophy that the development company could have positive sustainable

impacts on surrounding communities. After the interns conducted initial community health surveys, water was identified as a root cause of illness. A project was carried out to conduct microbiological testing in order to document the extent of the problem, to educate the community on the issue, and to begin working toward a positive outcome by forming partnerships locally, regionally, and transnationally. This article recounts the challenges produced by the conflicting aims of the private and not-for-profit missions of the two companies as the participants in this project sought to make positive strides by taking a critical, reflexive approach as part of the learning experience and the search for solutions. I begin by considering how the "water as a human right" discourse might be operationalized by identifying public health effects of what it means to "suffer from water" when the state fails in its "obligation to fulfill."

2. "To suffer from water"

The UN Millennium Development Goal of halving the proportion of the world's population without "sustainable access" to an improved drinking water source was achieved in 2010, five years ahead of schedule (Deal 2012: 24; United Nations 2010). The World Health Organization claims that data shows if existing technologies are put to use in the most vulnerable areas, ten percent of the global disease burden would be reduced through improved water supplies, sanitation, and water resource management (Prüss-Üstün *et al.* 2008). As Deal observes, this estimate "makes water related diseases arguably the most manageable set of health problems affecting humans" (Deal 2012: 24). Such statistics and ambitions are problematic, however, when we consider remote rural areas where the issue and all its dimensions are rendered invisible and thus beyond the responsibility of the state. In our field setting, census data was non-existent, a previously installed filtration system had failed, water quality was assessed by spurious criteria in the absence of testing, and people were living daily with the effects of drinking contaminated water.

In 2010 when the General Assembly and the Human Rights Council of the United Nations adopted resolutions to recognize access to safe, clean drinking water and sanitation as a human right, this was heralded as a breakthrough for "water justice" that had long been stymied by privatization interests, corporations, and numerous countries, including the United States. UN Member States can now be held accountable for not having a Plan of Action to deliver potable water to areas without access. This is an "Obligation to fulfill" clause which expands the definition of human rights further to include the state's responsibility toward its citizens rather than simply the protection of individuals from "excesses of the state" (violence, torture, genocide, etc.) (Barlow 2012). While significant, this is just the beginning, as there are competing ideologies as to how to best implement this right and to assure this obligation (Barlow 2012: xvii). The distinction between obligation and protection from violence is arbitrary because, as we shall see, the routinized bodily insults of life without clean water, experienced when the state fails to meet its obligations, is a form of lived violence. In Panama, many of the state's economic development projects in the countryside take the form of tourism, land development, and increasingly, eco-tourism and sustainable development but the focus remains on attracting external capital, rather than meeting basic human needs for the poor. In the study I present here, while the land development company planned to lure investors and home-buyers with designs to build a "sustainable community" in the forest, there remained no "sustainable access" to safe water in the nearby village.

There is an emerging literature informed by political ecology and critical medical anthropology that specifically addresses what it means to "suffer from water." Such research on access to clean water has addressed topics such as:

- (1) the "social origins of bodily distress" (Ennis-McMillan 2001, 2006);
- (2) gender and power dynamics (Sultana 2011); and
- (3) the social epidemiology of differential water-related health risk amidst hydrographic abundance in underdeveloped countries (Yongis 2010).

The project described in this article contributes to this political ecology of health risk and water access literature by identifying the mutually-reinforcing factors of contaminated water, poor health, and state inattention to

public health in marginalized isolated areas where foreign private development is being encouraged. It strives to recognize how the embodied experience of living with water-related illness can be framed as a public discourse critiquing inequality in Panama, and how it can bring accountability. Importantly, the project sought to establish bonds of social capital among different networks in order to circumvent the system of power that has allowed this form of social suffering to persist.

3. Political ecology of development and underdevelopment in Panama

Tourism and land development today are the latest stages in a history of development in the Panamanian countryside that has long been one of urban elites maintaining an economic base through control of rural lands and depletion of natural resources (Gudeman 1978: 20-21). In diverse ethnographic settings across the country (Gjording 1991; Gudeman 1978; Rudolf 1999), anthropologists have documented how for *campesino* and indigenous communities, increasing their market integration has meant "less food security, a greater dependence on powerful outsiders...and greater economic inequalities within their own ranks" (Rudolf 1999: 26). Even during the years when Omar Torrijos was *de facto* leader (1968-1981), during a period of a populist "revolution" with contradictory interests in rural poverty, capitalist penetration and transformation of subsistence livelihoods, there was also paternalism and U.S. influence, which led to increased control of land by outsiders in the form of government-run sugar cooperatives and failed mining projects (Gjording 1991:17-37; Gudeman 1986: 19-20; Rudolf 1999: 83-85).

Several national regimes took power after the U.S. invasion in 1989. Exploring the lack of enforcement and full implementation of the General Environmental Law passed by the Panamanian legislature in 1998 that provided indigenous peoples rights regarding control and development of resources, Wickstrom (2003) outlines the trade-offs and uneven effects experienced by the country's two major indigenous groups who in the years following the Law were faced with the choice of active engagement or defensive retreat. Largely resisting assimilation through organization and strategic claims of sovereignty, the Kuna people of the north-central coast found sustainable development elusive as integration with external economic systems produced resource exploitation and internal conflict. Elsewhere, the Ngäbe-Buglé withdrew into marginal lands on the north-west coast, relieved of assimilation pressures but increasing their dependence on resource-degrading productive activities (Wickstrom 2003).

Although tourism and land development in beach communities and forests, especially those enterprises bearing the "sustainability" and "eco-" labels, claim to generate income that preserve rather than deplete the country's natural beauty and environmental resources, they also reproduce disparities in costs and benefits. The opportunities provided by these "growth industries" are limited and serve to deepen the markers of inequality in Panama as the consequences of development become the burden of the poor upon whose backs this growth is subsidized. Development in coastal areas like Bocas del Toro and Boquete has not only depleted environmental resources, it has effectively served to relocate many of the indigenous populations who occupied the land.

With a significant amount of land being untitled, much of the country is becoming a lucrative resource for land developers and investors. While protests have been mounted and there is increasing nation-wide awareness, these concerns are often left unanswered and ignored by a government privileging land development over the rights of the local inhabitants. Sectors experiencing development provide some employment for the local populations but, predictably, these positions are often temporary, low-paid and unskilled. The skills of this labor force are exploited for low wages and the higher-paid positions are filled by outside sources. While there are worker's rights laws in place, these laws are easily evaded and rarely enforced.

Panama has become a major destination in the niche market of "lifestyle migration", in which relatively affluent migrants largely from the U.S. and Canada are increasingly moving into rural and environmentally sensitive areas of Latin America (Spalding 2013). On the archipelago of Bocas del Toro, on Panama's Caribbean coast and bordering Costa Rica to the west, a rush of land speculation and resort development over the past fifteen years has produced a proliferation of land conflicts and popular unrest that is gaining international attention. The promotion of tourism in the 1990s as Boca's primary source of income has evolved into "residential tourism" in which American companies, to meet the growing market demands for U.S. retirees, are

buying up and claiming ownership of land, much of which is already rightfully occupied by Ngäbe-Buglé and local people. Although Panamanian law grants rights of possession to anyone who works and lives on land for more than twenty years, indigenous people who have legitimate claims are being forcibly displaced.

Opposition has escalated as developers are buying political influence and the law is going unenforced (Prado 2011; Thampy 2014). Spalding (2013) observes that as global perceptions and images of places like Boca del Toro idealize quality of life, warm climates, cheaper costs of living and affordable health care—all especially desirable for retirees—the "set of attitudes and behaviors" migrants bring with them ultimately comes into conflict with local realities to produce "emerging markets, land conflicts, and changes in environmental practice" (Spalding 2013: 67). Identifying three factors that have intensified these conflicts – "legal and bureaucratic confusion...multiple claimants to the same property...(and) different property norms"—Thampy's (2014) discourse analysis of accusations of greed presents a Panamanian government that is struggling to fix a regulatory system designed to attract foreign capital while conciliating citizens' anxieties, and those of expatriate retirees and investors. Here, competing property norms in Bocas del Toro struggle for "narrative dominance." In this model, greed accusations by subaltern groups leveled against elites perform an environmental "regulatory function", in which indigenous Ngäbe-Buglé strategically embody a kind of "ecological noble savage" identity. Conversely, the casting of greed accusations by elites against indigenous groups serves a resource "control function." Working as an individual maximizer discourse in the sense of neoclassical economics, they vilify opponents while justifying their own accumulation of property (Thampy 2014).

With NGOs supplanting the state as funding dries up under neoliberal regimes in Panama, Guerrón Montero (2005) explored the process in which the "environmental truths" generated by international donors, and an accompanying "morality" discourse regarding resource use, informed the planning and design of sustainability initiatives in the Archipelago of Bocas del Toro (Figure 1). Through their ability to speak the language of conservation and conform to the image of its narrative, the Ngäbe-Buglé formed successful alliances with national and international supporters, emerging as "cultural intermediaries" while the needs of Afro-Antilleans who challenged the discourse and expressed dissatisfaction with the plan, remained neglected (Guerrón Montero 2005). In a 2014 analysis of the effects of tourism development in Bocas, Guerrón Montero (2014) again focuses on perception, arguing that since 1989 governments of "post-invasion Panama" have participated in a "myth-making project" that presents the country as a safe, demilitarized, police-free state. In this new form of governmentality, socioeconomic hierarchy is maintained not through overt authoritarian expressions of power but through covert denial of citizenship rights that privileges tourists and foreign investors while circumscribing the marginalized into "culturally appropriate" but economically disadvantaged contexts. Another high profile conflict emerged with the on-going construction of the Barro Blanca hydroelectric dam in the Chiriqui Province of western Panama. The Ngäbe-Buglé people are being displaced as a sliver of land they were legally ceded in 1997 is being taken away along with the river that they and *campesino* communities depend upon for potable water, irrigation, and their dietary staple of fish. The dam is being built by a Honduran-owned company, financed by multiple European financial institutions, and promoted, most insidiously, by the UN as part of a "carbon offsetting scheme" that gives Panama carbon credits while falsely promoting this as a form of "green development." Far from remaining "victims of modernization", people are organizing and taking action to fiercely defend their territory and disrupt construction of the dam. Recent protests have erupted in violence, resulting in deaths as protestors symbolically using slingshots come up against armed police and the military.

As a result of these controversial developments, displaced people have streamed into the village where the land development company in our study is located. Fifteen years after Wickstrom (2003) cautioned against Panama's non-enforcement of environmental law and explored the environmental costs of indigenous seeking refuge on undeveloped land, such retreats have become even less viable. The pushing of migrants into the region, people who might be defined as "development refugees", is a refutation of the perceived quality of life indicators under neoliberalism in Panama, and the utopian frontier narrative of the land company.

The region occupies a distinct niche in this political ecology as speculative efforts to tap into an undeveloped land market away from the beaches and coastal areas promotes a specialized form of residential eco-tourism under the guise of sustainable development. An increased cost of living forces many people out of

the city and the developing resort areas, and into rural settings. In these rural areas, initiatives to support better public health and potable water are occasionally begun, but are largely politically motivated and short-lived. The effectiveness of the "political will" of the state in public health rhetoric should be critiqued in terms of local perceptions and policy coherence at the national level; it is a representation that frames issues and creates subjects while reducing complex problems to simplified solutions (Nichter 2008:107-108; Morgan 1989; Whiteford 1997). A political ecology perspective that links reduced access to land and clean water to wider processes of economic underdevelopment offers such a critique:

- (1) On the one hand, community participation in programs will be poor and cooperation will be low if people mistrust the government, due to its prior inattention to invest in or follow through on local projects.
- (2) On the other hand, it is misguided to assume that the state speaks and acts with a single voice, given the sordid complexities of politics (corruption, favoritism, vote pandering, etc.) made worse by budgetary shortfalls and scaled-back responsibility under neoliberalism.

In collecting and presenting their data the research team worked against community cynicism toward new projects while engaging a local representative with a genuine concern to address the water issue.



Figure 1: Bocas del Toro, Panama.

4. Political ecology of tourism, eco-tourism, and 'voluntourism'

Stonich (1998) was a forerunner in a political ecology analysis of connections between tourism, development, water access, and environmental health. Demonstrating that while freshwater, land, and marine resources in the Bay Islands of Honduras were threatened by unfettered growth in tourism attributable to powerful national and international agents, the environmental health risks and adverse effects of this degradation were disproportionately experienced by impoverished immigrants and residents from ethnic minorities (Stonich 1998). Political ecology offers a way to frame relationships between globally-articulated social, political, and economic factors that shape competition and control over resources and that impact the environment in ways that often affect the health and well-being of local populations negatively.

The pursuit of new tourist markets in Central America produces consequences of uneven development. Benefits are largely accrued by foreign investors, local elites, and preferentially-treated foreign workers while the poor scramble for low-paying insecure jobs or are pushed into informal economies where they are often subject to intensified citizenship policing (Chambers 2000: 36-39; Gregory 2007: 30-40). Despite the potential for new streams of revenue from "scenic and heritage resources", there are the same inherent "contradictory tendencies" undermining sovereignty and the realization of "social justice visions" (Sanchez and Adams 2010: 420). From resorts built under the pressures from economic restructuring (Gregory 2007), to post-disaster recovery efforts under "shock doctrine capitalism" (Alexander 2008; Stonich 2008), to "agritourism" in the

"identity economy" (Lyon 2013), to "experiential" cultural tourism in post-revolutionary settings (Babb 2011), recent case studies from Central America abound with examples of gains for some sectors via the exclusion of others. The effects of this exacerbate public health problems and a rapid shift toward a tourism-centered economy has been shown to cause, among other risks, dietary change and food insecurity (Himmelgreen 2013 *et al.*).

The promotion of ecotourism rose in Costa Rica in previous decades and it is pervasive across the region, which offers a cautionary tale for its neighbor Panama. Despite magic bullet promises of achieving economic development and environmental conservation, an unregulated influx of visitors quickly exceeds environmental carrying capacity and infrastructure limits. Tourism drains natural resources, especially water, as tourists consume much more per person than locals. And while ecotourism is at times promoted as drawing support for human rights and democracy, these lofty goals are undermined by the indiscriminate use of the "green label" as merely a "form of niche marketing" (Becker 2012; Gmelch 2010: 11-13). As Honey notes, when "green washing scams" and faux ecotourism began to flourish in Costa Rica studies responded by calling for "stronger and clearer national planning and policies." The state's luring of foreign capital with investment incentives and tax exemptions for hotel, air, and ocean transportation companies and—of particular interest to our study—for "green luxury" residential development all fell under particular scrutiny. As this happened, Costa Rica began losing its "unique ecotourism mantle" to neighboring countries. Belize in particular and, increasingly, Panama, have moved in to fill the market share for questionable "sustainable" land development that essentially amounts to the building of cities in the countryside (Honey 2010: 444-449). This wider political ecology opens up new spaces of vulnerability accompanying a shift into new markets where land is available, and government regulation is lax.

In areas where weak institutional authority has delegitimized land tenure, the "ecotourism potential" of tropical forests in Central America has been championed as a way to attract outside environmentalist support as long as *campesinos* are included as stakeholders in the process (Clark 2000). In Panama, *campesinos* and indigenous people are speaking out about land conflicts in the desirable coastal areas stemming from the state's violation of its own laws and corruption within the political system. The work of the interns on the water and health project provided an opportunity for local people directly affected by land development bearing the "sustainable lifestyle" label in the forest interior to have their voices heard, regarding the disconnection between the empty rhetoric of "sustainability" and the consequences of its implementation. In an example from Nicaragua, Hunt and Stronza (2011) showed how such local narratives that critique the ethical aspects of ecotourism are often missing from analyses that focus only on the performance of the development project. Recognizing and integrating local perceptions is key because ignoring them cancels out "those elements which distinguish ecotourism from other forms of tourism" (Hunt and Stronza 2011: 376).

In recent years "voluntourism" arose as an alternative that potentially brings positive changes for both host communities and travelers from the developed world (Sin 2009; Wearing 2001; Wearing and McGehee 2013). The market for international "service learning" opportunities has expanded as public universities in the U.S. endure perpetual budget cuts and pressures to increase revenues through engagement with the private sector (a strategy of neoliberal restructuring under austerity). Student demand has risen for study abroad experiences that include environmentalist, public health, poverty, and social justice initiatives. With our anthropology students seeking experience in such fields, applied anthropologists are beginning to consider how the experience itself can be critically analyzed in order to bring about better outcomes. Hudgins (2010) coined the term "student development tourism" to link "development, service learning, and volunteerism" of "international exchange experiences" in ways that lead students to question their own motivations, to arrive at a deeper understanding of the generation of poverty, and to be moved toward collaborative and responsive solutions to locally-defined needs. Inevitably, the inherent flaws of international development reveal themselves. Like Hudgins, Garland seeks to re-frame the narrative away from the empty banality of "giving something back" – which only makes sense from a position of privilege—toward a learning experience about the root causes of systemic poverty. Taken to its reflexive conclusion, this would include a critical self-examination of the roles of the organization itself and the development apparatus that brought the student to their host country might play in perpetuating underdevelopment in the marginalized community.

This requires a critique beyond that of the commodified "altruistic" experience. Countries undergoing macroeconomic restructuring and the retreat of the state under neoliberalism provided what Garland calls a "ready institutional framework" for the market expansion of "Western young people's interest" in service learning in the underdeveloped world. The world's poorest countries are beginning to recognize the long-term costs of these trade-offs. Universities receive tuition fees. Students pay NGOs or private companies to get volunteer experience and provide them with free labor. As the state relieves itself of its obligation to provide services by handing them off to NGOs and the private sector and as "public rationale" demanding their provision is undermined, state institutions become weak to the point of "posing problems for sustainability and governance in the longer term" (Garland 2012: 8).

The company in this study benefited not from free labor but from interns providing social media content, that trades in the currency of marketable images. Social media is a key component of what Mostafanezhad calls volunteer tourism's "media(ted) humanitarian gaze." Individual posts (on Facebook, Twitter, in blogs, etc.) are part of collective assemblages of images and relations that personalize development into a shared spectacle of care. Here private ethics supplant public and political responsibility and well-intentioned travelers reproduce the neoliberal market subjectivities that limit the moral and empathetic experience to those with abundant social and economic capital (Mostafanezhad 2014: 5,7, 117; Mostafanezhad and Hannam, 2014). In response there is a growing popular critique of the inherent Western privilege of "drop-in heroism" and the "White Messiah Complex / White Industrial Savior Complex" that calls into question how much local populations are actually benefiting from a specialized global travel industry offering cultural experience and humanitarianism as a package deal. The research team with whom my advisee worked attempted to correct this by expanding the social capital of the villagers and removing the mediated narrative filter of the development project that is often promoted on social media.

The literature review in these two sections has shown how such control over the flow of images and perceptions is a key dynamic in the current political ecology of development and tourism in Panama (Gerrón Montero 2005, 2014; Spalding 2013; Thampy 2014). As per Thampy (2014), my advisee's project sought to challenge the "narrative dominance" of the company's sustainability discourse by providing a more inclusive vision of the common good. As per Guerrón Montero (2005, 2014), the project I now describe presents an alternative "environmental truth" that is informed by peoples' needs that are often ignored by a top-down myth-making morality discourse that serves the interests of the state and transnational capital through a passive denial of citizenship rights—in this case, the right to clean water and health care.

5. Selling sustainability in private and not-for-profit ventures

From the beginning, Tierra Sostenible was a private development company looking to find a profitable niche in the Lifestyles of Health and Sustainability (LOHAS) global marketplace. LOHAS promoters advertise it as a growth industry for "goods and services focused on health, the environment, social justice, personal development, and sustainable living." (LOHAS n.d.) Catering to an upscale and educated consumer demographic, its market sectors include "personal health, green building, eco-tourism, alternative transportation, alternative energy, and natural lifestyles" (Mager and Sibilia 2009: 9). Trading on the concept of sustainability, Tierra Sostenible seeks to build a large-scale community that is, at least in theory, based on the principles of sustainable living and ecotourism. After several years, no actual progress has been made on the infrastructure of this planned community, with the exception of some of the planned clear-cutting of the forest.

The attached not-for-profit venture was conceived after Tierra Sostenible, and once established it began recruiting college students to intern in the community. Its "entrepreneurial internships" include programs in Agriculture, Biology, Business, Community Outreach and Education, Farm to Table Culinary Arts, and Outdoor Education. Attracting many anthropology and medical students with interests in public health, a paid internship proposed Health and Wellness as a new program. It was through collaboration between interns in Biology and Health and Wellness that the need for water testing in the village mentioned above became evident.

For several years, the land development company cast about in an unfocused manner to get a foothold in what it calls the "tropical frontier" of Panama. In 2012 the goal was to develop a planned community based on principles of permaculture comprised of three distinct hamlets, each with housing that conformed to the topography of the land. The next year the plan was changed to build a hotel that included a hostel and intern

housing, a farm-to-table restaurant, and conference space for events. After a successful summer program in which international eco-tourists paid to attend events focusing on entrepreneurship, permaculture and other threads of the sustainability narrative—an event which ironically caused some water and land contamination due to overburdened septic tanks not equipped to handle the influx of young travelers—the community development plans were put on hold for a few years in order to expand the space available for future large events. This included plans for a campground and zip line attraction to draw more travelers. Locals, it seems, became accustomed to a changing vision that largely served the needs of privileged, environmentally-conscientious foreigners, some of whom were seeking a place for second homes.

While Tierra Sostenible made no monetary profit from the student program of its sister company, much value was gained in its creation of a social media presence in which students' shared values of social and environmental justice became an asset to the land development company. Through weekly blogs and the posting of photographs, videos and personal testimonies telling of jungle adventures, they invite similarly-minded people to share in this narrative. While it is true that participation in the company's programs allow an opportunity for some to broaden their horizons and to engage in real social and environmental justice actions, in the three months most spend at Tierra Sostenible there is little time to turn a critical eye on the company itself. My advisee and her team, over an extended period of time, developed strong relationships with the people in the adjacent village and made substantive efforts to improve the lives of those whose well-being was subsumed by the well-designed marketing narrative of the company.

6. Living with water-borne illness

The symptoms of drinking from a contaminated water supply—diarrhea, vomiting, fever, and intestinal issues—are part of lived experience in the village and generally not viewed with alarm by the 550 or so residents. In this rugged, rural area where about a quarter of households farm and raise cattle and other livestock, runoff flowing down the sloping terrain drains animal fecal matter into water sources. My advisee noted with surprise that it was not uncommon for patients seeking relief to be prescribed an antibiotic at the local clinic: but inevitably they swallow their pills in the very water that was making them sick. Previous multidisciplinary approaches in rural Latin America have shown success in changing popular perceptions of clean water and improving associations between illness and water quality that were accomplished in conjunction with providing access to potable water (Deal 2012; Pettit-Riley *et al.* 2010). In the village, people's perception of water quality seemed to change relative to the seasons. During the dry season, tap water is generally clear and often considered safe for drinking. During the rainy season it is brown with sediment, and many people are more aware of this visibly poor quality. My advisee and her colleagues recognized that many people were eager for testing to confirm and make public what they themselves had been thinking privately about their water. It was observed that water quality issues were often considered frivolous in comparison to the need for immediate repairs to housing, with basic materials provided to village heads often in exchange for political support.

According to a 2011 survey, 86% of the rural population in Panama had access to improved water sources (World Bank 2013). It is common for impoverished villages to be excluded from such surveys and these statistics may also not include communities where a failed water system was previously installed. The quality of these facilities varies considerably and in rural areas greatly depends on the community's involvement in maintaining and operating the systems. Once a system has been set up, its management is left in the hands of the water committee. Studies in other parts of Panama have found that well-built systems often fail within a few years and that water committees lack the resources and training to repair and maintain them (Braithwaite 2009). In the village, adjacent to the concrete cisterns that collect water on a hilltop and deliver it by tubes to individual houses, sits an inactive large, more advanced expensive filtration system that was constructed by a private company contracted by the Ministry of Health (MINSAs) several years previously. While the system worked effectively for a few months it did not take long for the filters to become clogged with sediment and debris, and it was disconnected because of low pressure. Unaware of how to repair or maintain the system, the water committee made several failed attempts at contacting the company that was in charge of installation. Faced with the choice of contaminated water or access to no water at all, the committee reverted back to the old cisterns.

In promoting water as an eco-social good, rather than as a service or commodity, a water rights discourse, as Bond argues, can potentially shift policy toward a social justice narrative in drawing attention to the health effects of unpurified water (Bond 2012: 198). Contracting with the private sector for the delivery of a public good without providing adequate infrastructure and support is a widespread failure in neoliberal regimes. Any related health effects may go unnoticed in areas where people have become accustomed to living without access to these basic services. By documenting contamination and illness, we can re-frame this neglect as a water rights violation of the state's "obligation to fulfill" and as a systemic outcome of the political ecology of an inequitable development model, rather than as just one example of the failure of that model.

Access to water in the community is managed by MINSA with its rural division almost exclusively promoting gravity-fed systems that pull water from various mountain stream sources into concrete cisterns that then divert water through PVC tubing. It is not uncommon for the village to go hours, or sometimes days, without water due to blockages. The water that comes out of the tap is most often cloudy or brown and contains small particles of sediment. Each province in the country has a local MINSA office that is responsible for the funding and operation of these systems. Common obstacles these offices face include shortfalls in funding, inadequate resources, and political favoritism. This environment produces a management system that is reactive, rather than preventative, with very little attention being paid to long-term, sustainable solutions. Locally people expressed resignation regarding water issues in the village as the power structures that limit access in the political ecology of water puts them at a loss as to how to fix this.

Water testing was initiated in the village in May of 2013, a continuation of some earlier testing begun by a Spring Biology intern. An initial proposal that would have included a comprehensive analysis of the bacteria, giving a breakdown of specific strains, which would have allowed particular symptoms to be tied to particular contaminants, was rejected by Tierra Sostenible due to the cost (approximately \$180). Instead, 3M Petrifilm count plates were an inexpensive alternative and while these tests were able to provide a basic suite of information on E. coli and coliform counts, they are not intended to be used in the diagnosis of conditions in humans.

Eight test sites were selected including: two water cisterns that divert water to the village, the main river running through the village, and two taps that were located in homes. These sites were selected in an effort to get an accurate cross-sectional representation of the water supply throughout the village as well as to track any changes in contamination from the source to the tap. The data was collected over two eight-week periods, with water temperature, weather conditions and times recorded for each sample, which were placed in an incubator and analyzed for total coliform and E. coli counts. This process was carried out during the rainy season (May 2013-July 2013) and again during the dry season (February 2014-April 2014). After both 8-week periods, averages were calculated and recorded.

While there were significantly higher counts of E. coli colonies found during the rainy season, the coliform counts were consistently higher in the dry season. The total levels of contaminants in both seasons are unsafe for human consumption according to the 3M Petrifilm guidelines. The site with the highest amount of contamination was the river, which is the largest and most commonly used water source in the village. It is assumed that the E. coli counts are significantly higher during the rainy season because many water sources are situated on land that is used for cattle farming. Showing the presence of E. coli in 87% of the community's water supply and coliforms present in 100% of the samples collected, the information from the first phase was presented to the founders of Tierra Sostenible but was met with indifference by those with the power to address this problem.

It was apparent that nothing was going to be done with the village water data collected by the interns during the two semesters, yet Tierra Sostenible had begun plans to bring a clean water system to the planned development community. This inequity motivated several of the students to take it upon themselves to work toward a solution by building relationships with the water committee, the local representative and the local clinic. The results of these studies were shared with members of the community and informational brochures were created for distribution at the clinic. This education plan was to disseminate a more complete understanding of the effects of the contaminated water supply

At the modest health center in the village there are not enough doctors to serve the more than five thousand residents of the district and the clinic is in constant need of the most basic supplies and medicines. It is not uncommon for the staff to bring their own items or take them from the private clinics where they also practice. The physicians provide treatment for primary needs but anything requiring specialization is referred to Panama City.

The research team began assisting with patient records, sterilizing instruments, and creating informational brochures and posters. Developing a close relationship with staff, they began showing them weekly results of the water tests. The degree to which illness and infection are acquired through contaminated drinking water in hospitals and clinics is underestimated in most countries, but microbiological methods for tracking bacterial sources can be effective means of remediation (Shareef and Ziad 2008). When testing of the clinic's water supply revealed positive for *E. coli* and other coliforms for the tap water in the patient rooms, the team and the clinic began conversations about how water data could be used to raise community awareness and work toward a solution.

Gastrointestinal diseases (including gastroenteritis and amebiasis) are frequently treated at the clinic and are a consequence of contaminated water. Children under five and adults over sixty are the most susceptible. Cases increase during the rainy season because of high levels of sediment and the proliferation of bacteria in river water. Often patients will only take precautions against drinking the contaminated water supply until their symptoms are alleviated. Many patients rely on folk remedies—teas, cider, vinegar, and lemon—to treat parasitic infections rather than pay for an antibiotic. While the center provides free and reduced services to those without benefits, there is a cap on the number of times a person can be seen. If a patient has reached this limit, the choice is to wait for that cycle to renew or to pay an amount out of pocket that is out of reach for most households. Such "choices" and behaviors mean learning to live with illness. Along with inadequate funding of clinics and exposure to contaminated water in the community and within the clinic itself, they comprise a "normalized total experience" for both clients and caregivers where marginalized populations suffer disproportionately in society (Chary *et al.* 2013). Providing clean water and subsequent education on water and water-related illnesses is a major preventative step toward better health. This will alleviate symptoms and disease while significantly lowering the number of people seeking treatment at the clinic, lowering the stress on an overburdened staff of doctors, nurses, and administrators.

7. Engaging local governance and expanding social capital

The interns decided to foster a productive relationship with the water committee and the Province's Representative to address unease regarding Tierra Sostenible's lack of communication and unclear motives and practices. In an open forum, the interns provided the committee with the data they collected and expressed their desire to act as a liaison between the community and other outside sources of support. At this forum people were not surprised that there was contamination and they were eager to discuss the effects of ingesting *E. coli* and overusing antibiotics. Once the interns' intentions were understood as separate from those of the for-profit company, their relationship with the committee improved.

The team then developed a plan to bring an international NGO, which had recently delivered water filters to a community in Haiti suffering water-borne illnesses, into collaboration with the clinic, villagers, and the water committee. In May 2014, more than \$4,000 was raised through the popular global fund-raising internet crowdfunding site Indiegogo. The money from this campaign was used to purchase water filters and buckets. During a June 2014 visit, the NGO team, new paid interns, and other students worked with the water committee and clinic to install bucket filters in four area schools, the clinic, three households and the internship household. Many individual families expressed significant interest for more filters to be brought in and the NGO and research team became hopeful that this would provide temporary relief as large-scale, sustainable future actions are weighed up. The best outcome as cited by the NGO was the moment when these conversations started between community members and government representatives, at their first ever public meeting to create a dialogue regarding water quality issues.

Such international assistance also draws attention to the structural factors in Panama that perpetuate water quality issues that challenge the nation's public image as a rapidly growing developing economy.

Although encouraged, the team recognized that filters were a temporary solution until the state makes good on its obligation to provide sustainable access to drinking water. New forms of human capital mobilization and coordination via social networking models promise to facilitate "non-state-directed alternative development", but in terms of rhetoric and practice they may be based on the same old modernist principles of development and Global North privilege that are contributing to the neoliberalization of the host country and underdevelopment of its poorest sectors (McLennan 2014). In short, the success of this campaign should emphasize, rather than distract from, the great need for structural change within Panama.

In connecting with a NGO and working to establish alliances between individuals, the clinic, the water committee, the representative, and international systems of support, the water testing project team moved beyond the failures of the Panamanian state that excludes impoverished villages and leaves their problems unaccounted for. The right to water will remain a "hollow right" for the most marginalized living in informal settlements unless it includes the "complimentary right of community participation in water management" (Clark 2012: 174-175). Such recognition and mobilization of existing local forms of social organization have been shown to be effective in overcoming obstacles of unclean water, poor sanitation, and limited access to health services in isolated populations (Mazzeo and Chierici 2013).

Along these lines, this water study and the distribution of its findings provided a platform for identifying the needs of the community and articulating them with a potentially far-reaching network of "social capital" resources (Bourdieu 1986) at multiple levels of connection. The project sought to promote community bonds through the idea of access to water as a right, rather than a problem to be solved by individual initiative, as it had been done in the past. The interns aimed to increase awareness among and facilitate dialogue between people in the clinic, on the water committee, and in regional government. Finally, in drawing international attention from the NGO, the project linked the local issue to global concerns and to potential allies. While implicitly drawing attention to the outward-oriented development model that reproduces rural poverty in the Panamanian countryside, the students nonetheless availed themselves of those transnational linkages that had brought them to the Panamanian countryside to begin with.

8. Concluding remarks

A promise of health, wealth, and happiness rides a phantom gringo boat that is always just beyond reach—like progress and development. (Kane 2004: 183)

In her 2004 ethnography of indigenous encounters with failed development projects in the Darién forest in Panama over several decades, Kane recounts an Emberá folk tale about an ancestor shaman who summoned an American boat that now sometimes appears as an apparition on the water. She uses this as an allegory for "promises that come from an unknown territory and cannot be ignored... (yet) recede again into the mist before they can be realized (Kane 2004: 1)." While today the territories from which global travelers and agents of development arrive are no longer mysterious and unknown, it is still appropriate as a fleeting apparition that ceases to materialize the image of their positive impact. And while the state ensures that their schemes cannot be ignored, emerging social movements in Panama give hope that they can be resisted.

Had this study and student experience ended with the collection of data, it might have been an example of student development voluntourism that primarily served the individual desires of idealistic young travelers while promoting the profit-oriented aims of the development company. It might have done this by propagating familiar images and imagined experiences through the "media(ted) humanitarian gaze" that left the real needs of those suffering unaddressed. The company provided the initial opportunity, but it was through the initiative of dedicated individuals that the built-in limitations of the experience were transcended by taking a critical and reflexive view of the development company's "narrative of sustainability" that did not, in the political ecology that privileges land development over citizenship rights, actually include a commitment to helping people trying to claim their right to clean water. By linking poor health directly to contaminated water, by helping people recognize their own embodied experience of social suffering, this study seeks to make a treatable public health

problem visible. This is in order to hold those responsible accountable, despite a history of the state and agents of foreign capital treating it with ambiguity and indifference.

The focus on access to clean water is a counter-narrative that springs from specific intersections of health, environment, and economic development in political ecology (Firpo Porto *et al.* 2017). It is crucial that such narratives be substantive, that they are more than marketing tropes for the empathetic expressions of tourists linked to the business of private land development. Narratives should connect sustainable development to sustainable health for the poor, which starts with sustainable access to clean water. In this way, social media can be put to use to generate critical understandings and to find transnational allies. "Sustainability" and the "right to water" in and of themselves possess no meaning outside the structures of power that limit their success or deny access. As simply "floating signifier(s) devoid of any political content" Sultana and Loftus describe these terms this way:

Like 'sustainable development' and many other fuzzy concepts that have gone before, the right to water is emptied of any real meaning. If all concur it is a good thing it loses its ability to disrupt contemporary water governance which has persistently reproduced inequities. (Sultana and Loftus 2012: 10)

This meaning should be reclaimed and articulated by the local voices of those who suffer from a lack of clean water. Disrupting the status quo of contemporary governance practices (of water, of development, of public health) can occur by asking why this suffering persists, and what can be done about it. Disruption involves more education, attention, and action.

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