

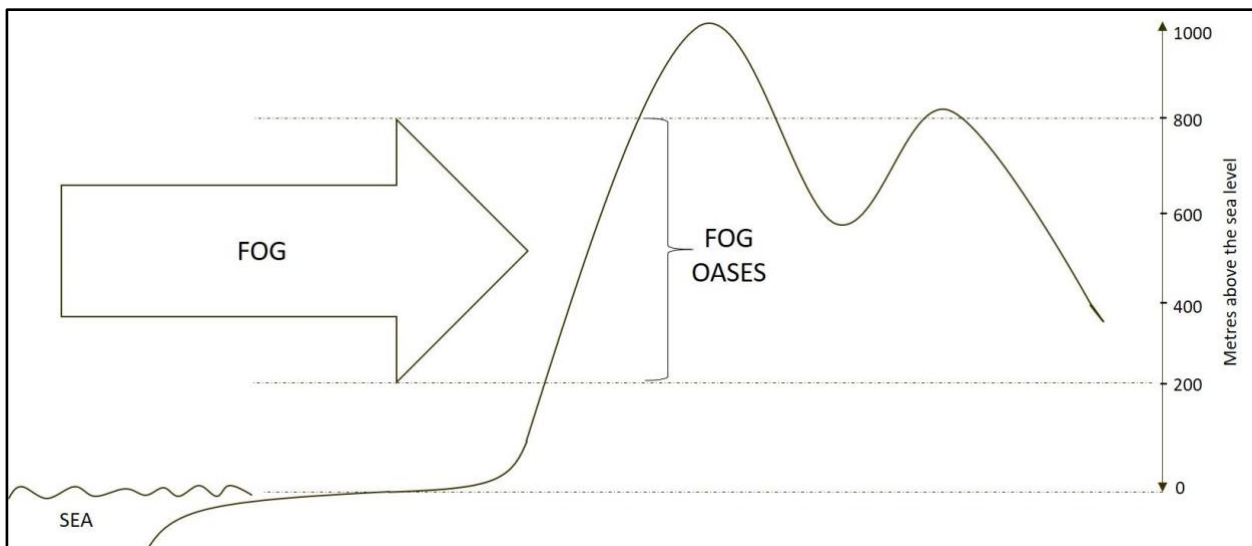
The Political Ecology of Fog Oases in Lima, Peru

Flood, D. & Niewiadomski, P. (in press) The political ecology of fog oases in Lima, Peru. Geoforum

Introduction

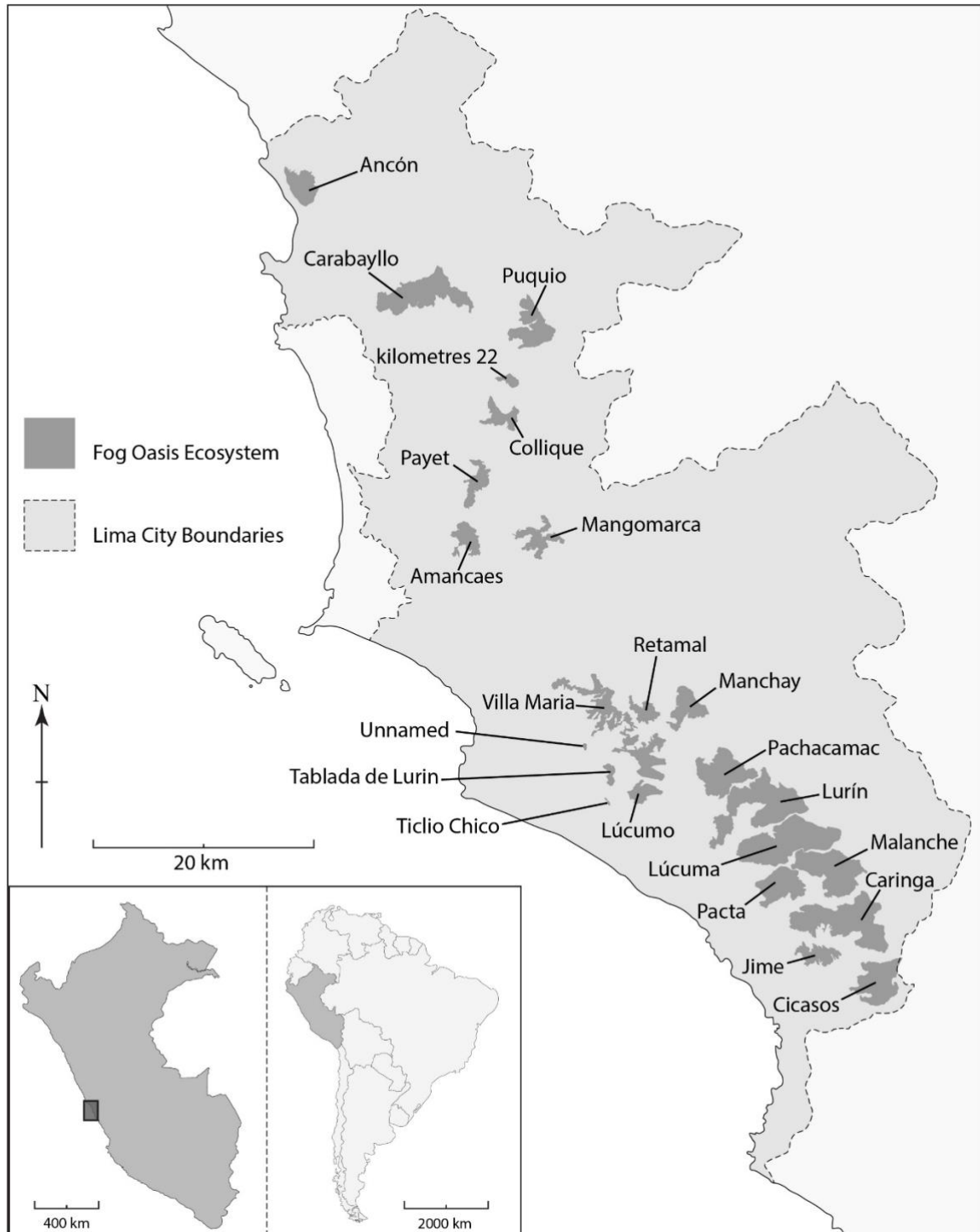
Fog oases (Spanish: *lomas*) are seasonal ecosystems in the coastal areas of Peru and northern Chile that develop during the austral winter at altitudes between 200 and 800 m a.s.l. While in the summer they are dry, less biodiverse, and apparently arid (and thus not much different from the surrounding deserts), in the austral winter, when the fog coming from the Pacific Ocean activates dormant seeds in the soil, they turn into highly biodiverse ‘islands’ of fog-watered vegetation (Dillon et al., 2011; Eisenberg et al., 2014; Manrique Paredes, 2011) (see Fig. 1).

Figure 1. Formation of fog oases in Lima, Peru
(Source: Own elaboration)



Currently, there are 23 such fog oases within the administrative boundaries of the Lima Metropolitan Area (Spanish: *Lima Metropolitana*) – the capital city of Peru (see Fig. 2). Scattered around the city as unconnected, fragmented green patches, they cover ca. 22,000 ha altogether, which makes them Lima’s largest ecological reserve every winter (July to October) (Eisenberg et al., 2014; Lleellish et al., 2015; Park Service of Lima, 2014). Indeed, Lima’s fog oases are home to 134 plant species, including endemic and vulnerable ones such as *Vasconcellea candicans* and various rare urban animal species such as coastal foxes (*Lycalopex sechurae*) or vizcachas (*Lagidium peruanum*) (Lleellish et al., 2015; Park Service of Lima, 2014).

Figure 2. Location and distribution of fog oases in Lima, Peru
 (Source: Own elaboration based on the data gathered by EbA Lomas between 2016-2018)



Importantly, as a part of the city’s ecological system (Eisenberg et al., 2014), Lima’s fog oases have always been a source of different ecosystem services (UNDP, 2018). For instance, pre-Columbian

communities harvested water from fog oases for agriculture (Balaguer et al., 2011; Beresford-Jones et al., 2015; Eisenberg et al., 2014), while during the colonial times new settlements extracted wood for construction and fuel, and used the land for cattle breeding (Rostworowski, 2005). Nowadays, Lima's fog oases deliver the following ecosystem services: air quality regulation, food and freshwater provision, maintenance of genetic diversity, pollination, soil formation, aesthetic impression, spiritual experience, tourism, and recreation (Park Service of Lima, 2014; UNDP, 2018). However, despite the ecological value, fog oases are now increasingly seen as mere places for dwelling, even though human activities have a highly damaging impact on them, and they do not offer safe conditions for settlement (Kato, 2018; Nieuwland & Mamani, 2017; UNDP, 2018).

Indeed, although Lima's fog oases are highly vulnerable to climate change (i.e. lower precipitation, less fog, and extreme weather events contribute to coverage reduction, landscape fragmentation, and biodiversity loss; Aponte et al., 2012; Metropolitan Lima Council, 2014; UNDP, 2018), climate change is not the most evident threat that fog oases face. Instead, over the last few decades, Lima's fog oases have been subject to intense ecological degradation that is caused by an array of economic, social, and political factors and that is a direct legacy of various historical developments and political negligence (Aponte et al., 2012; Miyasiro & Ortiz, 2016; Metropolitan Lima Council, 2014; Park Service of Lima, 2014; UNDP, 2018). The urban sprawl in the peripheries of the city in the form of various economic activities (e.g. non-metallic mining, urban agriculture, and overgrazing), informal housing, land-trafficking and illegal occupation of land (most of which is allegedly driven by criminal organisations) is by far the most destructive set of factors that put the existence of fog oases at risk (Arana & Salinas, 2007; Miyasiro & Ortiz, 2016; Metropolitan Lima Council, 2014; Park Service of Lima, 2014; UNDP, 2018). The under-developed legislation, combined with poor urban planning that does not account for the unique ecological value of these ecosystems, makes the situation even less promising (Nieuwland & Mamani, 2017; UNDP, 2018). As a result, some fog oases have permanently disappeared (for instance due to the fact that the land has been sealed with concrete), whereas others have been reduced in size or entirely isolated by newly urbanised areas (Apedjinou, 2019; Dillon et al., 2011; Metropolitan Lima council, 2014; Park Service of Lima, 2014; UNDP, 2018). In response to these threats, various local communities, together with civil organisations and NGOs, launch local tourism organisations (LTOs) whose main aim is to protect and conserve their fog oases by means of organising ecotourism activities (Nieuwland & Mamani, 2017; Park Service of Lima, 2014; Kato, 2018). However, to oppose all forces that instigate and benefit from informal urbanisation is not an easy task, particularly in the context of flawed urban planning, defective governance, weak regional authorities, and various illegal activities in the area (Metropolitan Lima Council, 2014; Soria & Romo, 2019).

This paper adopts an urban political ecology perspective to explore the emergence and operations of LTOs in Lima, analyse the formal and informal hurdles which they confront in their struggle to protect fog oases, and reflect on both positive and negative effects of their operations. It is demonstrated that the different claims on the land which fog oases occupy derive from various historical developments and long-lasting political negligence and, as such, they are intertwined with the wider structures of power across the city. The paper shows that, although LTOs strengthen local governance and make a contribution to the conservation of fog oases, their success cannot be taken for granted. Not only are their operations hampered by various social, political, and economic impediments, but also the effects of their actions cannot be always viewed as positive, fully sustainable, or free from conflicts. Thus, this paper adds to the growing field of urban political ecology (Heynen, 2014, 2016, 2018; Heynen, Kaika, and Swyngedouw, 2006; Swyngedouw and Heynen, 2003) – mainly to the issue of the production of nature and ecosystems services in urban areas with under-developed legal regulations and weak governance. More indirectly, this paper also contributes to the debate on tourism and its potential to foster environmental conservation in a bottom-up way (Mowforth & Munt, 2009; Williams, 2009).

To achieve the above aims, 21 semi-structured interviews were conducted in Lima, Peru in June and July 2018 with key stakeholders involved in the protection and management of fog oases, and the creation and management of local tourism organisations (LTOs). The pool of respondents included representatives of four LTOs (10 interviews), representatives of local authorities in three different districts with fog oases (3 interviews) and regional authorities (i.e. Lima Metropolitan Area) (1 interview), members of three local environmental NGOs (3 interviews), independent academic experts (2 interviews), and representatives of the EbA Lomas project – a large conservation project implemented by the United Nations Development Program (UNDP) and funded by the Global Environment Facility (GEF). EbA Lomas aims to protect fog oases and is a continuation of a former project which the city authorities left unfinished in 2014 (2 interviews). The interviews were complemented by an analysis of various available documents, including those recommended and/or produced by the EbA Lomas project. The ‘EbA Report’, which summarises the results of two surveys on the perception of fog oases – one with the general population of Lima and one with the communities living close to fog oases, was used here as a useful source of secondary data (Institute of Public Opinion, 2017). Two main general themes emerged from the interviews: 1) informal urbanisation (including land-trafficking) as the main source of environmental degradation, and 2) ecotourism as a conservation strategy and its effectiveness. The findings are related below theme by theme.

The remainder of this paper consists of three sections and conclusions. The next section discusses the urban political ecology perspective adopted in this analysis and provides a brief review of relevant literature. In order to set the scene, the following section offers background information on (informal) urbanisation in Lima, its damaging impact on fog oases, and the historical processes that led to the current status. The penultimate section relates key research findings, whereas the final section offers conclusions.

Urban political ecology, tourism, and local governance

As one of the key frameworks for analysing human-nature relations, political ecology (PE) offers an alternative to various market-based “apolitical” approaches such as ecological modernisation or eco-scarcity (Robbins, 2011; Neumann 2005, 2009a). Drawing from Marxist political economy, PE looks at ecological conditions as a product of political processes and assumes that environmental change (e.g. desertification, ecological degradation, changes in land-use) is shaped by the political-economic organisation of labour and the social relations of production under capitalism (Blaikie & Brookfield, 1987; Bryant & Bailey, 1997; Neumann, 2009a, b; Robbins, 2011; Swyngedouw & Heynen, 2003). By means of asking questions about wealth distribution, economic inequities, social exclusion, the role of the state, interclass relations, patterns of land ownership, and the distribution of benefits and costs associated with environmental change, PE recognises social relations, economic constraints, and structures of political power as key forces determining access to and control over natural resources (Neumann, 2009a; Paulson & Gezon, 2004; Robbins, 2011). Importantly for the analysis below, PE also argues that socio-ecological processes often give rise to scalar forms of organisation (Neumann, 2009b; Robbins, 2011; Swyngedouw & Heynen, 2003; Zimmerer & Bassett, 2003). It highlights how communities and social movements negotiate their rights to resources, and how collective community action (as a response to capitalist-driven development – the key cause of environmental degradation), attempts to solve socio-environmental problems (Neumann, 2009a; Robbins, 2011).

Although PE initially focused on rural places in developing countries, over time it escaped from this ‘rural Third World trap’ (Heynen, 2014, p. 598) to give rise to urban political ecology (UPE) (Cornea, Veron, and Zimmer, 2017; Heynen, 2014; Swyngedouw & Heynen, 2003). Since traditional questions asked by PE also proved relevant to cities, UPE developed as a response to rapid urbanisation (mainly in the developing world) and the recognition that numerous ecological problems have an urban origin (Neumann, 2009a, Swyngedouw & Kaika, 2014; Zimmer, 2010). As such, UPE established itself in the early 2000s (see Braun, 2005; Heynen et al., 2006; Keil, 2003, 2005; Pelling, 2003, Swyngedouw

& Heynen, 2003) as a viable alternative to the urban environmental justice and urban sustainability approaches (Swyngedouw & Kaika, 2014).

The main objective of UPE is to disentangle the interconnected ecological, economic, political, and social processes that form uneven urban landscapes (Heynen, 2014; Swyngedouw & Heynen, 2003; Zimmer, 2010). By means of recognising that urban environmental and social change determine each other, UPE blurs the boundaries between urban and natural environments without falling into the trap of ecological determinism (Heynen, 2014; Swyngedouw & Heynen, 2003; Swyngedouw & Kaika, 2014). Simultaneously, drawing from the notion of production of nature (Harvey, 1993; Smith, 1990), UPE views urban environments as the products of the intermingling of social and ecological forces and calls for historically- and geographically sensitive insights into how urban nature is produced (Neumann, 2009a; Swyngedouw & Heynen, 2003; Swyngedouw & Kaika, 2000). The production of urban nature is also seen here as contested terrain, where the process of capturing the benefits of socio-environmental relations usually follows the patterns of concentration of capital, thus also embodying and reflecting the unequal (and multi-scalar) power relations between different social groups (Jonas et al., 2015; Swyngedouw, 1996, 2019; Swyngedouw & Heynen, 2003; Swyngedouw & Kaika, 2014; Zimmer, 2010). In this respect, UPE aims to contribute to emancipatory urban politics and the pursuit of more just and more even socio-environmental conditions in order to hamper what Harvey (2003) labelled as ‘accumulation by dispossession’ (Swyngedouw & Heynen, 2003; Swyngedouw & Kaika, 2014, see also: Brownlow, 2006; Myers, 2008).

In light of the above, UPE is also a promising framework for addressing the production of ecosystem services in urban and peri-urban areas (Depietri, Kallis, Baro, and Cattaneo, 2016). Thus, ecosystem services are seen not only as a product of nature, but also as a product of socio-economic and political processes (Depietri et al., 2016; Ernston, 2013). As such, they can be mobilised in different ways and in different political projects (Kull, Arnauld de Sartre, and Castro-Larranaga, 2015), which implies that the role of social movements in producing ecosystem services (and thus countering ecological degradation) can often be significant (Depietri et al., 2016).

Despite its Marxist origins, UPE has also over time incorporated various post-humanist approaches that critique and complement the first framing of UPE – something that Heynen (2014) refers to as ‘the second wave’ of UPE (see also Heynen, 2016, 2018). Some of the developments associated with the second wave are also pertinent here – mainly those related to the issue of governance. As Cornea et al. (2017) note, much of the Marxist-informed UPE literature relies on a top-down understanding of governance where most attention is paid to the state and its role in providing urban services and

environmental policies, while the role of actors from ‘lower’ scales is seldom theorised beyond ‘social resistance’. This view contrasts with the rural PE literature where “conflicting interests and agendas of different actors at different scales”, as well as the various governance practices employed by these actors, have always been at the centre of analysis (Cornea et al., 2017, p. 3). Even though the role of non-state actors has been recognised in the UPE literature (e.g. Desfor & Vesalon, 2008; Gopakumar, 2014; Kitchen, 2013; Veron, 2006), a stronger engagement with the idea of governance is still needed (Cornea et al., 2017). Therefore, to account for “the plurality of governance actors, their practices, rationales, normative orientations, interests and imaginaries as well as their relative and contextual power”, Cornea et al. (2017, p. 2) draw from anthropology and make a case for the notion of ‘everyday governance’ to be incorporated into UPE. Defined as “the actual practices of how interests are pursued and countered, authority exercised and challenged, and power institutionalised and undermined” (Le Meur & Lund, 2001, in: Cornea et al., 2017, p. 4), the concept of ‘everyday governance’ complements UPE with more nuanced attention to the ability of local actors to negotiate and modify norms, rules and regulations (Blundo & Le Meur, 2009; Olivier de Sardan, 2008). It theorises power as relative, context-specific and dispersed amongst various categories of actors (Cornea et al., 2017). As such, it also recognises how different configurations of state and non-state actors engage in temporary and place-specific forms of governance, thus blurring the boundaries between private sector, civil society, and state (Cornea et al., 2017). In this respect, the concept of everyday governance accounts for the heterogeneous realities of policy implementation and resource use on the ground (Cornea et al., 2017) – something that is of relevance to the role of local social initiatives in solving socio-environmental problems of urbanisation.

As the discussion above demonstrates, UPE is well-suited to analyse the various socio-environmental ‘bads’ of urban sprawl that unfolds without much transparency, accountability, or local representation and that is often driven by obscure political and economic interests of powerful social groups (such as real estate developers who acquire land in collusion with local authorities and at the expense of the poor) (Jarvie & Friend, 2017; Seabrook, 2007). The impacts of such processes are indeed manifold. In social terms, they foster the segregation of the poor by forcing poorer communities to concentrate in deprived areas such as slums, and restrict their access to natural resources (Mulligan, 2017). The limited ability of authorities to invest in housing, sanitation and effective water and energy systems, combined with a lack of strong local governance, makes this problem even more difficult to address (Lee, 2007). In environmental terms, in turn, uncontrolled urbanisation tends to have a devastating impact on urban ecosystems and the services they provide (Mulligan, 2017; Puppim de Oliveira et al., 2011). Local climate alteration, habitat loss and other forms of environmental degradation are only examples of negative effects (see Cao et al., 2020; Kowarik, 2011; Larondelle & Haase, 2013;

Prugh, 2016). The general impacts of climate change often make this situation even worse (Emilsson & Ode Sang, 2017), mainly in highly biodiverse regions such as Latin America (Pauchard & Barbosa, 2013). In this respect, UPE – and mainly the notions of production of nature and everyday governance – is a very useful framework for analysing the relations between the informal urbanisation in Lima, the environmental degradation of fog oases, and the role of local tourism organisations in defending them.

Because of the fact that the natural environment is key to many forms of tourism (Butler, 2000) and that the economic, social and environmental costs and benefits of tourism development are seldom distributed in an even way (Mowforth & Munt, 2009; Niewiadomski, 2017; Sharpley & Telfer, 2014; Williams, 2009), political ecology has over time also proved relevant to research on tourism (see e.g. Mostafanezhad, Norum, Shelton, and Thompson-Carr, 2016; Nepal & Saarinen, 2016). In line with the Marxist roots of political ecology, most tourism research conducted from a PE perspective views tourism as a neo-colonial form of imperialism and as an agent of modernisation and Western-driven development, with major tourism projects usually imposed on destinations by Western organisations and agencies (Douglas, 2014; Nepal, Saarinen, and McLean-Purdon, 2016). In this respect, tourism is seen as a top-down force that marginalises local tourism stakeholders, deprives local communities of resources and restricts their access to its benefits – even if it is promoted as ‘sustainable’ (Douglas, 2014; Nepal et al., 2016). As such, tourism often (re-)produces uneven class relations and generates new (and escalates existing) socio-environmental conflicts (Adams & Hutton, 2007; Quiroga 2009; Sarrasin, 2013; Scheyvens & Russell, 2012). Moreover, it often invokes environmental conservation as an excuse to displace local communities and convert their land into a tourist attraction (Nepal et al, 2016), thus largely contributing to ‘accumulation by dispossession’ (Harvey, 2003). Such impacts are mainly evident in less developed countries where governance structures are under-developed and where natural ecosystems are highly biodiverse and, hence, attractive to tourists (Nepal et al., 2016). In this respect, PE-informed research on tourism is a part of the wider scholarship on Western-driven environmental conservation as a neo-colonial means of restricting host communities’ access to natural resources (see e.g. Braun, 2002; Gregory, 2001).

In light of the above, Smith’s (1990) concept of production of nature is pertinent to tourism research. As Rainer (2018, p. 63) argues, PE has enormous potential to “provide a more fine-grained picture of how, why, and with what effects nature is produced for tourism”. However, by contrast to the effects of top-down tourism-driven development on host communities and their natural environments, little attention has been paid in PE-informed research to how tourism can be used by local communities as a tool to protect their environment and oppose external exploitative forces. The ability of tourism to

become ‘sustainable’ and to foster economic development at the local level, promote local cultures, enhance environmental protection, and alleviate poverty, has been widely debated (see Mowforth & Munt, 2009, Sharpley & Telfer, 2014, Williams, 2009). Whilst there is agreement in international policy-making circles that ‘sustainable tourism’ can help address local environmental, economic and social problems (see e.g. UNWTO & UNDP, 2017), and positive examples of this can indeed be found (e.g. Boer, van Dijk, and Tarimo, 2011; Vong, Silva, and Pinto, 2015), there is also abundant evidence that sustainable tourism can be as exploitative as neoliberal-driven tourism development. As such, it can serve the interests of powerful elites, create or preserve uneven power relations, and restrict the engagement of non-dominant social groups, without leading to environmental conservation (Douglas, 2014; Hall, 2019; Lyon & Hunter-Jones, 2019; Mowforth & Munt, 2009; Wall & Mathieson, 2006; Young, 1999). Fletcher’s (2014) account of ecotourism as an extension of colonial rule, where local people’s rights to negotiate relations with Western tourists are limited, and Gardner’s (2016) analysis of the neo-liberalisation of the Serengeti National Park, where the economic interests of ecotourism investors and the social and economic interests of local communities are difficult to reconcile, stand out here as the best examples. Importantly, there is also abundant evidence from Latin America – see Carriere (1991) for the example of Costa Rica, and Flynn (1996) for the example of Guatemala.

Thus, in order to balance out the focus on tourism as a top-down force that ‘produces’ nature for the benefits of external actors, it is useful to apply PE to research on how tourism can be utilised by local communities as a bottom-up initiative to foster local well-being and protect local valuable ecosystems from external influences. The remainder of this paper adopts this perspective (especially the concepts of production of nature and everyday governance) to analyse the role of local tourism organisations in Lima in protecting fog oases from environmental degradation caused by uncontrolled urbanisation. Before the research findings are reported, the next section sets the scene by describing the processes of informal urbanisation in the peripheries of Lima that have historically led to the current status.

Informal urbanisation in Lima and local responses – a historical outline

As the country’s economic and financial centre (it generates approximately 50% of Peru’s GDP), the seat of the national government, and home to 30% of the Peruvian population, Lima is the largest and most important urban centre in Peru (Glave, 2016). The Lima Metropolitan Area is governed by a regional authority that oversees 43 local authorities (one for each of the 43 districts which Lima consists of). Despite its overall importance, Lima has a very uneven urban landscape which over years has been shaped by conventional urbanisation processes in wealthy and upper-middle class districts, and informal urbanisation in more deprived areas such shantytowns in the peripheries or some parts

of the city centre (Kahatt, 2014; Riofrío, 1991). Simultaneously, Lima's urban development is a result of different historical and socio-economic processes and political decisions, including mass migration from rural areas, illegal occupation of land in the peripheries, and various neoliberal measures (e.g. the withdrawal of the state from the economy, the weakening of trade unions, privatisation of state enterprises, and abolition of social housing as a human right) (see de los Ríos, 2008; Espinoza, 2020; Glave, 2016; Matos Mar, 2012; Mauceri, 1995; Montoya, 2016; Metropolitan Lima Council, 2014; Olortegui, 2001; Riofrío, 1991). The fact that each of the three levels of administration (local, regional and national) plays a different role in addressing population and urban planning issues (unfortunately, often in contradictory ways) makes the whole picture even more complex (Apedjinou, 2019; Glave, 2016; Kahatt, 2014; Matos Mar, 2012; Zucchetti & Freundt, 2019).

The growing economic prosperity in Latin America in the aftermath of WWII, which in combination with the historic centralism of Peru significantly fostered the economic development of Lima in the 1940s and the 1950s (often at the expense of other regions), inevitably resulted in mass migration to the capital from rural areas (Gilbert, 1996; Kahatt, 2014; Riofrío, 1991). Given that by that time Lima had already started experiencing problems typical for big metropolises (i.e. land invasions, squatter settlements, insufficient urban infrastructure, etc.), the city was hardly prepared for an influx of new residents (Kahatt, 2014). As a result, after overflowing the city centre in the 1950s, migrants started setting up informal improvised settlements on hillsides and sandbanks in the peripheries of the city (Glave, 2016; Kahatt, 2014; Olortegui, 2001; Riofrío, 1991). The urban plan, which was proposed at that time by the city authorities to modernise Lima and cope with the insufficient public infrastructure, services, and housing, not only failed to be fully implemented but, if anything, it benefitted those who were already in a position of power (mainly wealthy and upper middle-class areas) (Kahatt, 2014; Riofrío, 1991). While the socio-economic bias of the plan triggered the housing crisis, two different "Limas" emerged simultaneously – one with conventional urban planning and better access to public services, and one characterised by land invasions, self-help construction, and poor urban conditions (Gilbert, 1996; Glave, 2016; Riofrío, 1991).

Because "the poor, informal Lima" gradually followed the process of 'inverse urbanisation', where illegal settlements were formally legalised by the authorities and public services were subsequently provided (Arends & Hordijk, 2016), the number of informal settlements in the peripheries proliferated between the 1960s and 1980s, thus exposing the inability of the authorities to offer sufficient financial and technical aid in order to solve the problem (Arends & Hordijk, 2016; Gilbert, 1996; Glave, 2016; Olortegui, 2001; Riofrío, 1991). Another wave of migration to Lima, caused by a rise of terrorism in rural areas in the 1980s (Lima's population doubled between 1975 and the 1990s), made the urban

sprawl in Lima even more chaotic. The scarcity of land in the city prompted invasions to various inhabitable areas around Lima – steep slopes, wetlands, valleys subject to flooding, and, importantly, fog oases (Apedjinou, 2019; Gilbert, 1996; Glave, 2016; Kahatt, 2014; Olortegui, 2001). This, in turn, set the ground for the emergence of land-trafficking as a profitable (albeit illegal) economic activity, usually managed by criminal organisations, allegedly in collusion with local authorities (Dosh, 2010; Espinoza, 2020; Montoya, 2016; Olortegui, 2001). Durand (2019) refers to such a phenomenon as ‘the capture of the state’. In other words, land-traffickers utilised their economic power to secure political support from authorities (in the form of favourable policies) to continue their illegal activities in an uninterrupted way (Espinoza, 2020; Soria & Romo, 2019). Such activities have become the main threat to fog oases. For instance, as Apedjinou (2019) reports, the disappearance of the Cerro Negro fog oasis was likely caused by land invasions.

The shortage of public services and infrastructure in the peripheries of Lima fostered the emergence of social movements whose main aim was to highlight the needs of local communities to authorities and negotiate support for them (Olortegui, 2001; Stokes, 1991). However, since their political power quickly grew, in the 1990s the pro-neoliberal government dismantled them, thus reinstating clientelist relations in the peripheries (Glave, 2016; Olortegui, 2001; Stokes, 1991; Tanaka, 2001). Despite this, local social and political initiatives in the peripheries did not disappear. As Tanaka (2001) pointed out, entirely new social movements, such as grassroot organisations and NGOs, emerged instead in order to defend the shared interests of local communities. Local tourism initiatives (LTOs) who aim to prevent the ecological degradation of fog oases in their respective areas are the best example here (see Table 1) (Kato, 2018; Nieuwland & Mamani, 2017; Soria & Romo, 2019). They are composed both of locals (e.g. current and former social leaders, influential representatives of local communities, university students, and various entrepreneurs) and visitors who join such organisations after visiting fog oases (Apedjinou, 2019; Kato, 2018; Soria & Romo, 2019). Apart from organising ecotourism activities, LTOs campaign to raise environmental awareness, undertake legal actions against land-traffickers, and lobby in favour of better environmental policies (Kato, 2018; Llellish et al., 2015; Soria & Romo, 2019).

Table 1. Local tourism and conservation organisations related to Lima's fog oases (Peru)*(Source: Own elaboration on the basis of Kato, 2018)*

Organisation	Fog oasis	Main features, activities and objectives
Asociación Circuito Ecoturístico Lomas de Lúcumo (Lúcumo fog oasis Ecotourism Circuit Association)	Lúcumo	<ul style="list-style-type: none"> • The first local conservation organisation related to fog oases. • Created by local entrepreneurs with over 20 years of experience in local development.
Asociación Ecoturística Lomas de Paraíso (Paraíso fog oasis Ecotourism Association)	Villa María (also known as Paraíso)	<ul style="list-style-type: none"> • Created by local social leaders and young tourist guides. • Aim to conserve the respective fog oasis through tourism, forestation and cleaning up.
Asociación Ecológica Lomas de Primavera (Primavera fog oasis Ecologic Association)	Carabayllo (also known as Primavera)	<ul style="list-style-type: none"> • Promotes conservation of the local fog oasis through tourism, forestation, cleaning up, and awareness campaigns.
Comité Ecoturístico de las Lomas de Mangamarca (Ecotourism Committee of the Mangamarca fog oasis)	Mangamarca	<ul style="list-style-type: none"> • Created by local residents. • Aims to protect the local fog oasis through tourism and forestation.
Instituto de Cultura, Historia y Medio Ambiente ICHMA (Institute of Culture, History and Environment)	Mangamarca	<ul style="list-style-type: none"> • An NGO created by local professionals. • Promotes conservation of the local fog oasis and local cultural heritage through education and tourism.
Kusi Sonqo (Happy Hearts)	Mangamarca	<ul style="list-style-type: none"> • Created by the local public-school 'Daniel Alcides Carrión' • Aims to conserve the local fog oasis and local cultural heritage.
Protectoras de la Flor y las Lomas de Amancaes PAFLA (Protectors of the Flower and the Amancaes fog oasis)	Amancaes	<ul style="list-style-type: none"> • Established by local social leaders and local residents • Works towards protecting the local fog oasis through tourism, forestation, and halting land invasions.
Haz tu Mundo Verde (Make your world green)	Amancaes (on the area known as Mirador fog oasis)	<ul style="list-style-type: none"> • Established by local youth • Aims to conserve the local fog oasis working with local pork farmers • Offers additional experiences to the visitors (i.e. extreme sports such as rappel and canopy). They indicate that they have proper certified training.

Despite their relevance and increasing popularity (e.g. in 2013 one LTO attracted 15,882 visitors), LTOs require a lot of technical and legal support. For instance, better accessibility and better public services and infrastructure are essential if tourism activities are to be sustained (Boscato, 2015; Soria & Romo, 2019). To address these issues, LTOs strive to develop relations with and gain support of various actors (authorities, local communities, conservationist organisations, private businesses, etc.). In some cases, however, such relations result in conflicts that hugely affect the effectiveness of LTOs' activities. For example, LTOs are not appreciated by those members of local communities who directly benefit from questionable economic activities in the area, such as informal farming and land-trafficking (Boscato, 2015; Miyasiro & Ortiz, 2016; Soria & Romo, 2019). Likewise, LTOs rarely develop positive relationships with local authorities – especially those who are inefficient, colluded with land-traffickers, and not interested in protecting and conserving fog oases (Espinoza, 2020; Soria & Romo, 2019). Thus, the 'everyday governance' of fog oases which LTOs try to practice in order to 'produce' fog oases for ecotourism, and for the benefits of local communities, tends to be challenged by multiple formal and informal forces both within and outside their own communities. The following section looks at these processes from the perspective of urban political ecology.

Urban political ecology and the fate of Lima's fog oases

Land-trafficking and the ecological degradation of fog oases

As a result of urbanisation, Lima's fog oases face continuous ecological degradation. Those located close to or surrounded by settlements (formal or informal) and extractive industries (legal or illegal) are particularly affected. Real estate developments that suspiciously obtain authorisation from local authorities, infrastructure construction, and accumulation of pollutants from various industries are the key factors here. However, as a member of EbA Lomas (Interview, June 2018) pointed out, none of these factors has a more destructive impact than land-trafficking.

Moreover, informal urbanisation and land-trafficking affect not only the natural environment but also local communities. While in environmental terms illegal settlements physically reduce the coverage of fog oases and thus restrict the provision of ecosystem services which they offer (Apedjinou, 2019; Arana & Salinas, 2007; Miyasiro & Ortiz, 2016; Park Service of Lima, 2014; UNDP, 2018), in socio-economic terms they hinder legal interventions by authorities (e.g. informal urbanisation has allowed multiple overlapped land tenures, which in turn obstructs effective legal procedures), dissuade tourists from visiting fog oases (LTOs often cancel pre-booked tours because of threats from land-traffickers), and dilute many conservation and research activities. An academic expert said:

“One time, land-traffickers did not let us access a fog oasis to carry out our research activities (...) and also interrupted the research done by students because students had equipment such as fog-catchers and tanks. Therefore, that keeps any research away from fog oases. Those people [land-traffickers and invaders], who are often carrying guns, have been one of our main obstacles (...)”

(Interview, June 2018)

Informal urbanisation and land-trafficking, the processes rooted in the historical development of the city (Glave, 2016; Gilbert, 1996; Kahatt, 2014; Olortegui, 2001; Riofrío, 1991), promote informal occupation of fog oases. As a result, every piece of undeveloped land in the peripheries (including fog oases) can be turned into a place for dwelling and an economic asset at any time (according to the Institute of Public Opinion (2017), 12.5% of Lima’s population and 8% of people living nearby fog oases consider fog oases as a place for dwelling). In other words, informal urbanisation in the peripheries has created an informal land market, where, on the one hand, poor families pay for land where it is risky (steep slopes) and unhealthy (a lot of fog in the winter) to live (UNDP, 2018), while on the other, some people invest in that land (either by buying or invading it), expecting high returns. For instance, land-traffickers who take advantage of such opportunities, invade land and then sell large plots (often including fog oases) at a profit (Dosh, 2010; Espinoza, 2020; Montoya, 2016; Olortegui, 2001; Soria & Romo 2019). An academic expert commented:

“Once land, including fog oases, is sold, land-traffickers will look for other land to invade and sell. They play with such opportunities. If they invade land and they are not fined, if they bribe authorities with ca. \$300, they can later sell that plot for ca. \$6,000. There is no bank with a better interest rate. (...) If that land happens to acquire public services, it can be sold at ca. \$40,000 or even \$80,000”.

(Interview, July 2018)

Despite being considered as the main threat to fog oases by 31% of Lima’s population (Institute of Public Opinion, 2017), land-trafficking is a growing illegal economic activity due to issues with social housing in Lima that date back to the 1950s (de los Ríos, 2008; Glave, 2016; Kahatt, 2014). It can be expected that, if it is not severely penalised, it will continue thriving. This originates from flaws in the existing legal framework which does not sufficiently discourage people from participating in the informal land market. It also reflects an insufficient capacity of local, regional and national authorities to deal with the problem (e.g. existing laws are not fully enforced), and a growing demand for housing

in poorer areas. The latter is a part of the wider housing crisis in the city, as described by an NGO representative:

“We are talking about a housing issue, a real social housing issue in our country; people do live in risk areas because there is an uneven distribution of property, or a concentration of it.”

(Interview, June 2018)

The factors that foster land-trafficking simultaneously provide land-traffickers with enough economic power to exercise control over the territory where they operate. That economic power often translates into a political one – either through bribes for existing authorities (mainly local), or through financial support for candidates to district councils during election times (Espinoza, 2020; and Soria & Romo, 2019). Interviewed representatives of local authorities neither confirmed nor denied the existence of this collusion. Instead, they pointed to the lack of strong leadership within district councils and a lack of interest in protecting fog oases, thus confirming a clear gap in how these ecosystems are governed. By contrast, LTOs, NGOs and regional authority representatives pointed out that such collusion could easily be found in at least a few cases (Interviews, June 2018). In fact, the political power which land-traffickers hold is manifest in tailored laws and acts at the local scale which they directly benefit from. An LTO member declared:

“Instead of creating local policies to protect fog oases, local authorities do the opposite. For instance, one [local authority] has created a law to legally recognise land invaders. [Land-traffickers] look to work with employees within local institutions (...).”

(Interview, June 2018)

Similarly, a representative of the regional authority confirmed:

“(...) It [corruption] is inside the institutions; there are many local municipalities that promote land-trafficking by providing resources (approved permits) to land-traffickers so that they can occupy an area.”

(Interview, July 2018)

In general, although people living close to fog oases are of a view that local authorities (90.3% of respondents), the regional authorities (72.3%), and the central national government (68.3%) have the responsibility to protect fog oases (Institute of Public Opinion, 2017), according to the majority of interviewees (app. 90%) land-trafficking is often (unofficially) facilitated by local authorities and,

more indirectly, by the inaction of regional and national authorities. The inability of the authorities to react reflects a few decades of inefficient policies and poor urban planning (as discussed by Espinoza, 2020; Glave, 2016; Olortegui, 2001; Riofrío, 1991; and Soria & Romo, 2019).

Ecotourism as a conservation and political strategy

Over the last decade, LTOs have emerged as important actors trying to oppose informal urbanisation and land-trafficking and protect and conserve Lima's fog oases. Although they operate locally, LTOs are composed of actors working at different scales. For instance, some local grassroot organisations, established by people who settled down close to fog oases in the 1970s and 1980s, are operated jointly with volunteer groups and NGOs that are active in more than one district and which can be therefore classed as regional actors. Besides, there have been cases where LTOs develop as regional networks to increase their incidence. To put it in another way, LTOs are a response to an apparent absence of the state, political negligence, and weak governance at many levels. Inefficient legal enforcement interventions against land-traffickers in fog oases on the one hand, and a shortage of conservation projects on the other, are the best evidence for this. In this respect, LTOs have become important agents of local governance who try to modify existing illegal, environmentally insensitive practices and implement new, much more environmentally orientated norms. By giving a voice to local communities and protecting the ecosystem services which fog oases provide them with, they promote more even socio-environmental conditions in and around fog oases. An LTO member commented:

“LTOs are very interesting initiatives that are sometimes doing what should be done by the state and its institutions (...); [because] there is a permanent divorce between authorities and various institutions, including these actors [LTOs].”

(Interview, June 2018)

Likewise, an NGO representative indicated that the emergence of LTOs responds to:

“...the desire to conserve a natural area, a peri-urban ecosystem, that is constantly under the risk of being degraded by urban sprawl (...).”

(Interview, July 2018)

LTOs do not aim to completely stop informal urbanisation because they do not have sufficient power to address the wider structural problems that underpin it (Glave, 2016; Matos Mar, 2012; Olortegui, 2001; Riofrío, 1991), but they do aim to protect the existing fog oases from its impacts. In this respect, they have assumed the role of protectors of fog oases, with ecotourism as a main strategy to conserve,

defend and manage fog oases in as sustainable a way as possible. Apart from bringing income, which allows LTOs to survive and continue their operations, ecotourism also serves as a political strategy. Its role is to help LTOs recruit important political allies who can both support LTOs and politically benefit from this cooperation. A member of the EbA Lomas project mentioned:

“When you talk about fog oases in urban environments, you do not only talk about protecting fragile ecosystems, you talk about everything that it involves (...) like risk management that can protect local people, giving them a better environment (...). That could result in something positive for authorities (...), but they do not see it yet; so, you have to find ways to convince them (...).”

(Interview, June 2018)

In order to attract and recruit other actors, LTOs focus their attention on local schools and local people to raise awareness of the environmental importance of fog oases through small campaigns. LTOs also engage other actors in their everyday activities. This includes representatives of authorities from all three levels – national (e.g. congresspeople and ministers of environment), regional (e.g. metropolitan environmental head officers), and local (e.g. local mayors), as well as NGOs – national (e.g. Centro Urbes and ALEV) and international (e.g. German Alimon). In fact, all interviewed LTOs agreed that recruiting “political allies” – especially those involved in conservation and pro-environmental policy-making – helps them increase public awareness of their existence, their mission to protect fog oases, and their everyday struggle against land-invaders (Various interviews with representatives of LTOs, June 2018). By means of attracting political support, LTOs promote more intense cooperation between national, regional, and local authorities, thus also actively discouraging local authorities from approving (directly or indirectly) land-trafficking and informal urbanisation. For instance, a member of the EbA Lomas project mentioned that:

“Somehow, LTOs are the catalyst for governance attempts made by authorities, because their presence and their management (...) partners them up with national, regional, and local institutions that are in charge of generating measures to recover or to revalue fog oases (...).”

(Interview, June 2018)

Likewise, an independent academic expert added:

“When you work in fog oases, you can work with various people. (...) In [this fog oasis], we have worked with a congressman who is a member of a specialised commission, (...) who is

responsible for generating environmental policies. (...) That commission was later invited to explain their progress on the initiative to promote a law to protect fog oases nationwide.”

(Interview, June 2018)

As a result of the involvement of key political actors, LTOs gain more political recognition. As such, they develop an ability to exercise political power (similarly to actors involved in land-trafficking, except in a legal way) in protecting fog oases. Such political power tends to be used in three different ways. First, they advocate better policy making with regard to environmental protection, which often engages them directly in the policy-making process at the local and regional level. For instance, a representative of the regional authority stressed the important role which LTOs play in the ongoing creation of a Regional Conservation Area (RCA) and confirmed that they would be invited regularly to take part in the decision-making process about the RCA (Interview, July 2018). Second, and connected to the first, LTOs press for a stricter regulation of urbanisation processes in the peripheries and for more severe penalties for land-traffickers. As such, they recognise local urban planning officers as pivotal actors in the conservation of their local fog oases (Various interviews with representatives of LTOs, June 2018). Likewise, a member of the EbA Lomas project noted that LTOs also call for actions from the Ministry of Housing and its related agencies to recover public land from land-traffickers (Interview, June 2018). And third, LTOs commit and promote new candidates to local and regional authorities who, they believe, would support their cause. As a representative of an LTO declared:

“We have recently had a meeting with all the ‘lomeros’ (i.e. people interested in the conservation of fog oases many of which are members of LTOs) to design a guideline document for the candidates who will run for the city council so that the new mayor would pay more attention to the problems that affect the fog oases.”

(Interview, June 2018)

One of the key outcomes of LTOs exercising their political power is the continuation of the regional authorities’ project that was interrupted in 2014. The project had two main aims: to empower LTOs in technical and organisational terms and to create an aforementioned RCA. After the insistence of LTOs, in 2016 the project was reinstated under the EbA Lomas’s guidance. A representative of regional authorities described the importance of LTOs’ political influence:

“If it had not been for LTOs and the pressure they exercised over the authorities, (...) it would not have been possible to reach the point where we are now regarding conservation. (...) Fog

oases have been reduced in size, but what is left is being conserved and protected [by LTOs] despite the difficulties that they face during that process.”

(Interview, June 2018)

Similarly, a representative of EbA Lomas added:

“These organisations, these people that defend fog oases, and that so far have played very important roles in introducing the conservation of fog oases to political agendas, are fundamental. They are the ones who are going to monitor the situation and make sure that the authorities comply with their functions.”

(Interview, June 2018)

However, despite being a promising political and conservation strategy, ecotourism is also sometimes locally contested and therefore not always as effective as intended. First, as a resource-demanding activity, ecotourism competes for resources with other economic activities, with which it is usually incompatible, and which are often the local communities’ preferred choice as a relatively easy source of income (albeit often informal or illegal). Second, some of the local communities where LTOs operate do not share LTOs’ environmental objectives, or even have opposite agendas. For instance, members of two LTOs indicated that their community leaders, who are not LTO members, also colluded with local authorities and land-traffickers, which in turn reduces the effectiveness of these LTOs’ activities (Interviews, June-July 2018). Thus, even though the main objective for LTOs is to conserve fog oases for the benefit of all local stakeholders, the production of fog oases for tourism is not a straightforward process. Because of the diversity of interests within local communities, LTOs often find themselves in conflict with the very communities whose natural environment they strive to protect. To resolve these conflicts and prevent them from occurring, LTOs campaign to inform local communities about the ecological and economic benefits of ecotourism and invite locals to join them. Fortunately, such campaigns often prove successful. For instance, in the El Mirador fog oasis local pork farmers decided to engage with the respective LTO to gradually replace informal pork farming with more formalised ecotourism activities (Interview, June 2018).

Furthermore, on top of the resistance from some segments of local communities, LTOs also receive frequent threats from land-traffickers, which demonstrates that in the context of weak governance and an undeveloped legal framework, protecting and defending fog oases is a risky ambition. Several LTO members reported life threats, without receiving any formal protection from the authorities. A member of an LTO commented:

“Of course [it is dangerous]! What can a guy that only has his word or his will do to face people that see the environment [fog oases] as something from which they can benefit enormously by trafficking land? They use heavy machinery, they rent it to destroy a whole hill and to create access which it is very expensive to do. To stop that lucrative business organised by mafias is an attempt against your own life.”

(Interview, June 2018)

All of this illustrates that the ‘everyday governance’ of fog oases which LTOs assume in the absence of more formal governance structures, and the ‘production of fog oases’ for ecotourism which they steer with their own conservation agenda, are not unchallenged. In order to promote and contribute to the conservation and sustainable management of fog oases, LTOs have to counter various informal forces and complex illegal and informal structures, which entangles them in risky power struggles.

In addition to the various internal and external political struggles, LTOs must also deal with economic hurdles. Despite the support which LTOs regularly receive from EbA Lomas, NGOs and volunteer organisations in the form of forestation campaigns, sale of souvenirs, improvement of tourist paths, training for local guides, legal advice, marketing campaigns, etc., they are economically vulnerable. This economic vulnerability originates from three sets of factors. First, LTOs do not have sufficient access to essential market information that could help them set adequate prices for guiding services. For example, while they charge \$1.5 per person per entry on average, the Institute of Public Opinion (2017) argues that visitors would be willing to pay up to \$6 per person. Second, LTOs do not possess sufficient resources to develop necessary infrastructure in order to provide tourists with all the essential services and thus enhance their tourist experience. For instance, according to the Institute of Public Opinion (2017), visitors would expect facilities such as toilets (77%), children’s playgrounds (43.5%), camping areas (42.3%) and sports facilities (38.8%), most of which cannot be guaranteed at all. Third, LTOs also often lack necessary expertise to manage their finances sustainably. The necessity to spend their income on legal procedures against land-traffickers instead of re-investing them in ecotourism makes this situation even worse. In this respect, members of three LTOs reported economic troubles in their organisations highlighting the need to seek additional income (Interviews with representatives of LTOs, June 2018). A member of an LTO further explained:

“Being a volunteer-based organisation is perhaps one of the obstacles (...). [LTOs] require investment (e.g. money, time) and that investment comes from our own pockets. No one else will cover that money, and that is a problem.”

(Interview, June 2018)

Meanwhile, it remains under-appreciated that substantial investment in LTOs might bring direct and indirect economic and social benefits to local communities. As a member of the EbA Lomas project confirmed:

“[Assistance to the LTOs] could create income and jobs for young unemployed local people (...) and community leaders (...), and could also diversify the local economy through the development of better spaces (...)”

(Interview, June 2018)

It is also essential to acknowledge that, in parallel with the genuine initiatives to protect and conserve fog oases, LTOs can also sometimes impact these ecosystems in a negative way. Bringing tourists to fog oases as well as organising various activities for them (e.g. extreme sports such as rappelling or zip lining) requires different infrastructural interventions (designing roads, tourist paths and rappelling stations, etc.) which may often clash with the principles of ecotourism. Not only do LTOs lack technical expertise to do this in a non-invasive way, but they also cannot afford to purchase such expertise at a reasonable cost. Also, the economic objective to generate profits from tourism, which naturally requires visitation at a considerable level, may result in the carrying capacity of a given fog oasis being exceeded and some of the ecological objectives compromised (Interviews, June 2018). This is an inevitable trade-off that has been long recognised in the literature on sustainable tourism (Creaney and Niewiadomski, 2016; Hunter, 1997; Mowforth and Munt, 2009).

Furthermore, despite the ongoing formalisation of LTOs, the organisation of tourist activities is associated with various legal issues that have yet to be addressed. This includes insurance and various licences. As an independent academic discussed:

“LTOs are a legitimate conservation tool, but they are not necessarily legal and that is a problem (...) Do they have a tourist operator license? What happens if a visitor gets injured? Who is responsible? Do they have insurance?”

(Interview, July 2018)

Clearly, the state (national, regional, and local authorities) has not found a way to sufficiently support LTOs and the ecotourism activities they do, nor to incorporate those organisations into policy-making processes. Aside from the RCA (which is not accepted by all LTOs since it sets them aside, undermines their operations and does not even cover all fog oases across Lima), the support from national, regional, and local authorities has only been very infrequent, mostly in the form of marketing

campaigns. Thus, LTOs still demand strong decisions from authorities to tackle the deep structural problems that are degrading fog oases. At the same time, they expect that ecotourism as a conservation and political strategy will provide them with enough political influence to convince local and regional authorities and the unconvinced segments of local communities that the conservation of fog oases should be fully incorporated into local, regional, and national environmental agendas. LTOs remain committed to their objectives despite the required time and resources, despite the threats from land-traffickers, and despite all the other internal and external political conflicts which they confront.

Conclusions

This paper has adopted an urban political ecology (UPE) approach to analyse the role of local tourism organisations (LTOs) in Lima in defending unique fog oases ecosystems from informal urbanisation and land-trafficking in the peripheries of the city. This paper shows that the ecological degradation of fog oases is an outcome of different historical socio-economic processes and political decisions (mass migration to the city, poor provision of social housing, underdeveloped urban planning, inverse urbanisation, neoliberal measures, etc.) and, as such, it is embedded in the uneven power structures across the city. The conflict between two major forces – illegal land-traffickers (who allegedly operate in collusion with some local authorities), and LTOs, who organise and promote ecotourism activities as a measure to conserve fog oases – lies at the heart of the production of fog oases in Lima and the ecosystem services which they supply.

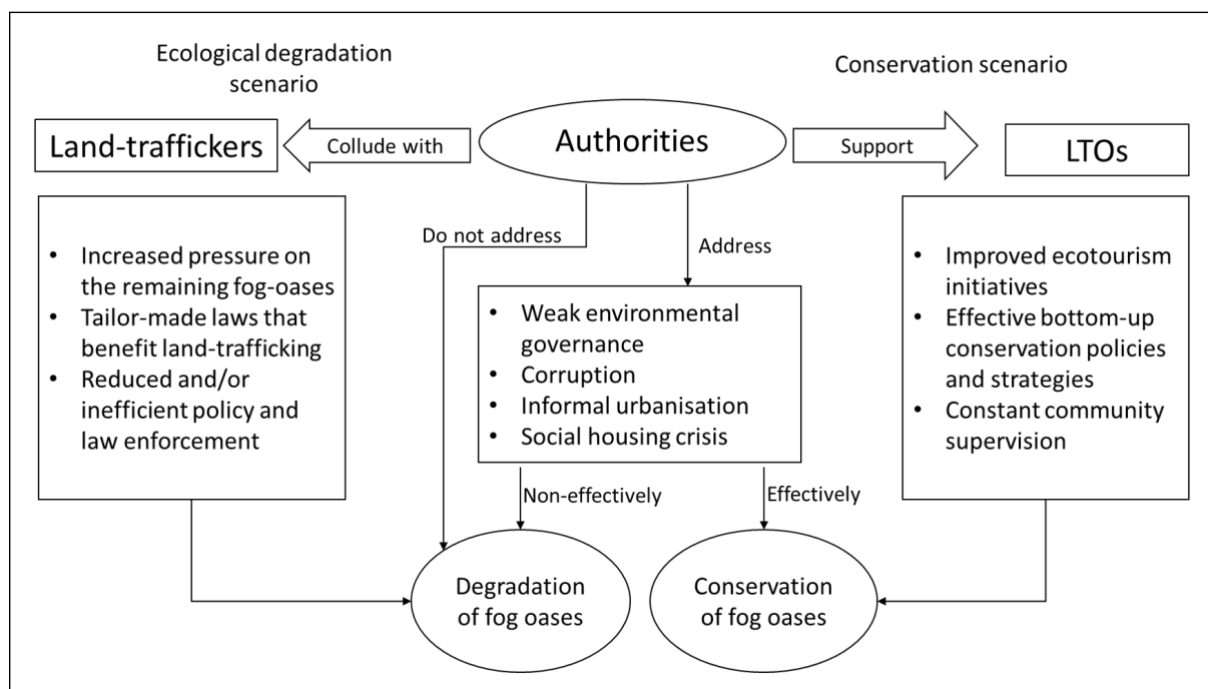
In line with the observation that the production of nature tends to follow the concentration of capital and reflect unequal power relations between social groups (Jonas et al., 2015; Swyngedouw, 1996, 2019; Swyngedouw & Heynen, 2003; Swyngedouw & Kaika, 2014; Zimmer, 2010), the degradation of fog oases in Lima is mainly driven by land-traffickers who possess significant economic capital to turn remaining fog oases into further real estate assets for their own benefits. Moreover, they translate their economic power into political power to influence local authorities and tailor legal regulations to their own needs (Espinoza, 2020; Soria & Romo, 2019). The support which land-traffickers allegedly receive from local authorities, combined with the ineffective enforcement of existing laws, weak or non-existent governance, continuous informal urbanisation, and the ongoing social housing crisis, are the key structural problems that put fog oases at risk.

Meanwhile, LTOs, who have emerged as a response to the inaction of the state, engage in organising and promoting ecotourism activities in fog oases in order to sustain their ecological, recreational and aesthetic value. At the same time, they utilise ecotourism as a bottom-up political strategy to recruit political actors and develop political power to counterbalance the strength of land-traffickers. Thus,

rather than being a top-down force that exploits local communities and fosters uneven class relations (Nepal et al., 2016), ecotourism serves here not only as a conservation strategy, but also as a political tool in a struggle for better socio-economic conditions for local communities and for stronger political engagement from key stakeholders in fostering local growth, promoting local culture, and conserving fog oases. Moreover, by assuming the responsibility to govern fog oases at the local level, LTOs compensate for the inefficiency and the relative absence of state institutions, thus bridging the gap between national, regional, and local administrations, environmental initiatives, NGOs, universities, and civil society. In this respect, LTOs serve as influential agents of everyday governance who promote new environmental norms and call for more inclusive and environmentally sensitive policy making. Their activity, however, is not unchallenged and uncontested. Even though they contribute to emancipatory politics at the local level, their agendas clash not only with the economic objectives of land traffickers and the local authorities that support them, but also with those members of local communities who have vested interests in the status quo.

The role of authorities in this conflict remains ambiguous. On the one hand, authorities are deemed to support land-traffickers by providing them with the political power which they need to continue operations, and, more indirectly, by failing to address the complex problem of informal urbanisation. This holds authorities co-responsible for the degradation of fog oases. On the other hand, however, because of the incipient political power of LTOs, authorities gradually recognise the environmental and socio-economic value of fog oases and slowly incorporate their conservation into wider agendas. The Regional Conservation Area is a promising example here (although much still needs to be done, e.g. essential green-grey infrastructure in existing fog oases remains under-developed, while fog oases outside the conservation area are still not protected). It is therefore in the hands of authorities to decide which side of the conflict they wish to support. The future consequences of their decisions are fairly easy to anticipate. Two different future scenarios are illustrated in Figure 3.

Figure 3. Two potential future scenarios (ecological degradation vs conservation of fog oases) as a result of authorities’ decisions pertaining to the conflict between LTOs and land-traffickers
(Source: Own elaboration)



Finally, on the basis of the analysis above, it is also important to highlight the theoretical implications of this paper. First, the discussion has shown that – by contrast to the common conviction – the production of nature is not always driven solely by powerful actors that represent the wider forces of the capitalist economy, but, instead, nature is also effectively ‘produced’ by local actors – either to resist external exploitative forces or to protect local environments from destructive local processes. However, even as a bottom-up initiative, the production of nature will be still subject to various political agendas and will be shaped by the clashing interests of various local and non-local actors. Second, the paper has shown that various local structures of governance, which emerge to fill the gap left by an absent state and stop exploitative forces from taking advantage of the state’s absence, may be powerful enough to ‘produce’ nature for the benefit of the communities from which they originate. In this respect, the concept of ‘everyday governance’ is of particular value in understanding how the production of nature unfolds at the local level and in a bottom-up way, beyond the Marxist account of social resistance to capitalist exploitation. Third, both points above also add to the general understanding of ecotourism as a conservation strategy. It is shown that tourism – and particularly various sustainable forms of it – are not always a top-down force that marginalises local communities and deprives them of access to resources. Instead, ecotourism can also be utilised by local communities as a conservation strategy and a political instrument to oppose environmental degradation and draw political actors’ attention to problems which they could not see otherwise.

Nevertheless, such processes are never straightforward and always rooted in the context-specific political, economic, and social structures.

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