

## Resistance to hydropower developments in contexts of violence and organised crime in Mexico

*Mariana Pelayo Pérez*

Universidad Nacional Autónoma de México

*Elisabet Dueholm Rasch*

Wageningen University

### Abstract

Hydropower developments not only have far reaching consequences like ecological degradation and the disappearance of livelihood resources. They also spur micropolitical processes of territorial and productive re-ordering within and between communities. This article analyses the response mechanisms of the inhabitants of a community located in the reservoir of a hydroelectric project in Mexico, facing the construction of a hydroelectric dam and the related arrival of new actors involved in illicit activities. In doing so, it examines the strategies for protecting their territory and livelihoods, and minimising risks at the same time at three levels: intensification, intentional transgression of rules and regulations, and the objection of the imposed system. The article concludes that the response mechanisms are informed by, and produce micropolitics of illegality and violence as well as new codes of governance. *Keywords:* Mexico, hydropower, resistance, violence, narco-environments.

Resumen: Resistencia a desarrollos hidroeléctricos en contextos de violencia y crimen organizado en México

Los desarrollos hidroeléctricos no solo tienen consecuencias de largo alcance como la degradación ecológica y la desaparición de medios de vida, también implican procesos micropolíticos de reordenamiento territorial y productivo dentro y entre comunidades. Este artículo analiza los mecanismos de respuesta de los habitantes de una comunidad ubicada en el embalse de un proyecto hidroeléctrico en México, frente a la construcción de una presa hidroeléctrica y la llegada de nuevos actores involucrados en actividades ilícitas. Se examinan las estrategias para proteger su territorio y su medio de vida, y minimizar los riesgos a partir de tres niveles: intensificación, transgresión intencionada de reglas y regulaciones y estrategias de impugnación. El artículo concluye que los mecanismos de respuesta están informados por y producen micropolíticas de ilegalidad y violencia como nuevos códigos de gobernanza. *Palabras clave:* México, hidropoder, resistencia, violencia, narco-ambientes.

## Introduction

Hydropower developments not only have far reaching consequences like ecological degradation and the disappearance of livelihood resources. They also spur micropolitical processes within and between communities (Porto-Gonçalves 2006). Such processes might include the constitution of a specific sort of hybrid space (Rasch 2017) that we call narco-environments in this paper, for being inhabited by multiple violent actors and governed through codes of conduct that are shaped by drugs related violence and illegality. This often results in disputes over access to, and control over, natural resources, as well as in new ways of governing the territory based on illegality and violence. At the same time, residents of affected communities try to protect their livelihoods and as such develop different strategies to resist and mitigate the impacts of hydropower developments and the constitution of new forms of governance.

In this paper we analyse how residents of communities affected by hydropower developments navigate processes of territorial and productive re-ordering in a context of illegality and violence by way of a case study of the community in the state Nayarit, México. In this community the construction of a large hydropower dam, started in 2003 and finished in 2007, located in the basin of the Río Grande Santiago, impacted negatively on different dimensions of community life. There was a sudden detriment of the fish quality, the lands depleted, and fishing restrictions were not respected. Because of territorial and productive reconfigurations related to the construction of the hydropower dam, illegality and violence became an important part of daily life in the community. This violent, clandestine environment shaped the ways in which communities (could) respond to, and actively resisted, energy projects in order to secure and protect their livelihoods. At the same time, these acts of resistance transgressed local environmental and political norms. Everyday practices of survival became acts of resistance.

Resistance towards hydropower developments takes place within the broader context of large investments in large scale hydropower dams, road building, and industrial mining in Latin America. Such investments in large projects are often still considered as the way forward for development (Bebbington et al. 2018), notwithstanding the numerous studies that point at the negative socio-environmental consequences of such hydropower dams (Díaz et al. 2011; Fearnside 2015, 2017; Boelens et al. 2019; Walker et al. 2019). Resistance towards such developments has been widely documented by scholars for different parts of Latin America: Hidalgo-Bastidas and Boelens (2018) on Ecuador, Walker and Simmons (2018) on Brazil, and Aguilar-Støen and Hirsch on Guatemala (2017), among others. From this strand of literature, it becomes clear that resistance against hydropower is mostly not only about the negative consequences of such projects, but also about the participation in decision-making processes and power (see also Hommes et al. 2019).

Hydropower projects, as well as resistance against them, often go hand in hand with violence (Lync, 2006; Duarte-Abadía et al. 2015). The past decade, the violence has changed, becoming more and more intertwined with drugs related activities in the so-called narco-corridors (McSweeney et al. 2014; Aguilar et al. 2017). In addition, these narco-corridors impact negatively on ecosystems and rural communities (Wrathalla et al. 2020). In the case of Central America, for instance, drug traffic leads to increasing deforestation (Tellman et al. 2020), sometimes combined with illegal breeding of cattle as a way of laundering money (Devine et al. 2020). The work of Ballvé (2018) shows how narco-frontiers are characterised by colonial logics, uneven development, violent politics and deforestation as a result of the production of cocaine. Insurgency, counterinsurgency, and violence have become part of everyday life. These developments produce new hybrid spaces that are made up of different (violent) actors that compete for the same territories (Rasch 2017). Because of the impactful presence of actors related to drug production and traffic, and the specific explosive dynamics that their presence produces, we call these hybrid space 'narco environments'. Narco-environments are the (hybrid) spaces and ecosystems that are captured and re-coded, re-configured, by the criminal logics of groups dedicated to drug dealing and trafficking, money laundering that pursue territorial control by using material and symbolic violence.

In this article we examine how hydropower developments went hand in hand with increasing (drug related) violence. We analyse how its residents resisted these interrelated developments at three levels. First, we aim at identifying the ways in which inhabitants of the community respond to ecological and socio-political transformations, individually and collectively, in order to protect their livelihoods, territory and human rights. Second, we analyse how these responses are shaped by illegality and criminal activities that are part of the hydropower developments in the community. Third, we look into how, within this context, everyday practices are transformed into acts of resistance and shape micropolitics in the context of hydropower developments. In doing so, we aim to contribute to literature that brings together violence, illicit actors, and violence specialists in natural resource conflicts in Latin America (Rasch 2017; Ballvé 2018; Middeldorp & Le Billion 2019). Whereas this literature provides for growing insights in how residents are criminalised and what sorts of violence they face, and more macro perspectives on the environmental changes of the narco corridor, there is still little literature about how these transformations work out on the local level, and how violence shapes the responses of communities towards hydropower developments.

What we add is that we analyse different acts of resistance in relation to violence and illegality that become part of daily life at the local level, using a micropolitical ecology perspective (Horowitz 2011). Such an approach allows for analysing the local particularities of environmental conflicts, and how the social complexities in and between communities evolve in such conflicts and within the context of broader political and economic developments (Rasch &

Köhne 2016). As such, we focus on understanding how the dynamics of mega-projects interact with local actors and local acts of resistance towards such projects in a context of violence and illegality. Through a detailed analysis of how acts of resistance transform over time, we show how such practices adapt, not only to global developments, but also to local relations, new ecological circumstances, and to increasing levels of violence and illegality.

The findings presented in this article are based on qualitative ethnographic fieldwork by Pelayo Pérez during eight months in 2017. The methods used, include participant observation, 26 open interviews fisherfolk, peasants (male and female), and community leaders. In addition, 3 focus groups were carried out. The interviewees quoted in this article have been anonymised. The quotes that we present here cannot be traced back to individual research participants. During fieldwork, their safety and the risks of talking freely was extensively discussed. Pelayo Pérez, who conducted the fieldwork, was always accompanied by a key informant during fieldwork who was well-known and respected in the community. We applied a process of open and axial coding to the material, organising the research data into categories and codes (Corbin & Strauss 1990).

The remainder of the article is structured as follows. First, we elaborate on the theoretical framework. We then go on to describe how hydropower developments arrived in the community, before we continue to analyse how new codes of water governance became hegemonic in the community through new actors that were involved in illicit activities. In the final section we examine the different levels of resistance that were developed by the inhabitants towards these developments, ranging from internalisation to strategies of objection.

### **Theoretical framework**

Resistance can be broadly understood as a social action that is carried out in some kind of oppositional relation to power (Hollander & Einwohner 2004). The approaches of Scott (1998) and van der Ploeg (2007) to resistance open up avenues for disclosing forms of resistance that are present at the local level and through which communities position themselves towards globalised markets that otherwise might not become visible. Van der Ploeg's (2007) third type of resistance includes action and production, giving an extra dimension to Scott's everyday forms of resistance, or infrapolitics, which are best described as acts of resistance by subordinate groups that might not be recognised as such. Van der Ploeg considers production as resistance, that is, practices of development that are developed as strategic actions with the intention to protect livelihoods and increase resources, as a response to risks that threaten livelihoods. Although van der Ploeg developed this conceptualisation in relation to technological innovations and the mercantilisation in rural areas (van der Ploeg 2007; van der Ploeg, Jingzhong & Schneider 2012), we find it useful to apply these insights to the way people respond to hydropower developments because it con-

cerns the alterations in livelihood strategies as a response to other forms of development implemented in rural areas. In the case study presented here, such forms of resistance develop not only with the intention to mitigate the risks of hydropower development, but also as a way of resisting a system of repression and influence the consequences of such developments for the environment as well as for the community. Together, van der Ploeg's third type of resistance and Scott's infrapolitics capture the myriad of ways that community members engage in responses towards hydropower developments and transformed codes of conduct.

In line with the work of Horowitz (2008), who has called for an analysis of resource conflicts through the lens of micropolitical ecology, we use a micropolitical ecology perspective to analyse these local responses to hydropower developments. Micropolitical ecology is rooted in political ecology and emerged as a way of responding to the macro-structural character of the political ecology of the 1990s (Moore 1993: 380). As a reaction to structural and functional understandings of natural resource conflicts, in which communities were often represented as homogenous unities (Blaikie & Brookfield 1987; Horowitz 2011), Moore (1993) emphasised the importance of incorporating micropolitics into a political ecology perspective in order to be able to understand the struggles through which access to natural resources is negotiated. Communities are then seen as heterogeneous and complex; and the existence of contradictory alliances and multiple internal power differences within them are recognised (Watts 2000: 268). Hence, local particularities and how individuals pursue their own interests in conflicts over natural resources, become central to a political analysis of environmental conflicts (Horowitz 2008).

To analyse local resource conflicts using a micropolitical ecology perspective, entails recognising resource conflicts within and between communities, and between communities and the state, while understanding them in their broader context (Rasch & Köhne 2016). It also enables us to look at the local level (Bryant & Bailey 1997: 24), applying an actor oriented perspective (Bury 2008; Giddens 1976, 1979; Long 1992; Murdoch & Marsden 1995). At the same time, it acknowledges how political and economic developments outside communities shape and inform the particularities of (seemingly) local conflicts (Horowitz 2012). Hence, it allows for a focus on local actors' daily struggles over livelihood strategies and claims to authority, without ignoring broader political, economic, and social forces (Horowitz 2008, 2011). Such a perspective is crucial for disclosing the otherwise invisible forms of responses towards hydropower developments and related illegality and violence.

We also use Briassoulis' (2017) idea of response assemblages to capture the different forms and levels of responses to hydro developments in the community. Such human responses to environmental degradation, according to Briassoulis, evolve in relation to the specific context, which on its turn shapes the causes, as well as the consequences of environmental degradation. She conceptualises responses as incomplete and mostly unconnected. Such re-

sponses are in continuous interaction with each other and seemingly unconnected and relatively autonomous elements, human and non-human, procedures and contexts. Such an approach acknowledges the importance of ‘the particular’ and the role of ‘uncertainties’ in how interventions turn out. Such assemblages are multilayered (Briassoulis 2017). In addition, responses in reaction to environmental threats multiply, compete and might contradict each other (Horowitz 2017).

Thus, bringing together micropolitical ecology with theories of resistance, opens avenues for understanding and unravelling resistance to global development projects in narco-environments – where, because of the explosive mix of violent actors, acts of resistance might become less predictable – looking at the interactions between different forms of resistance, the different actors, resistance strategies and where the resistance takes place (Rasch & Köhne 2016). It also allows for a deeper understanding of actual practices of participation and resistance (Singto, Fleskens & Vos 2018) and the complexities of (local water) governance (Hommes et al. 2019), including the sometimes less predictable ways in which, and reasons why, individuals create alliances as a way of engaging in resistance (Lohman 1995). In doing so, we not only add violence and illegality as disruptive and unpredictable elements that inform and produce new forms of resistance in micropolitics. We also follow Rasch and Köhne’s (2016) suggestion to add two more elements to the study of micropolitics in natural resources conflicts; the first is to take into account the way that people use natural resources as a way of making a living, and the second are the ways that micropolitics is entangled with, and at the same time co-construct practices that are related to development.

### **Hydroelectric developments: beginnings**

The community under study is located less than 10 kilometres from a large hydroelectric power that is part of the hydrologic system of the Río Grande Santiago. The construction of the hydropower dam started in 2000 and the dam was inaugurated in 2007. Today, it is the second largest dam of the state; it has the capacity of generating 750 megawatts, is 640 meters long and 178 metres high (CFE 2002; CONAGUA 2014). The construction of the dam was justified by national energy demands and the global (neoliberal) economic model geared towards the amplification of the energy system. In addition, the exploitation of the water reserves of the Santiago river would serve an alternative to the depleted oil resources (CFE 2002). The project was funded by *Proyectos de Impacto Diferido en el Registro del Gasto (PIDIREGAS)*. This is a national fund that finances infrastructural projects. The construction of the dam did not take place one night over the other. The Federal Electricity Commission (CFE) realised the necessary assessments considering the geology and possible road construction already in 1962. In the 1980s the company resumed its research in the region, this time focusing on feasibility of the project. Almost a decade

later, the CFE finally proceeded with the census and continued to construct the dam in the year 2000. However, in 2001, access to the construction area was obstructed by a collapsed hill. Consequently, the CFE needed to find an alternative way to access the construction site. One of the options was via the community under study. To gain consent from the community for their access to, and use of, the road, the company asked for an official meeting with the authorities of the *ejido* (1).<sup>1</sup>

During the meeting with the *comisariado ejidal*, the CFE representatives promised the community several benefits related to hydro developments, such as more jobs, the activation of fisheries, the introduction of electricity, economic support for reforestation and for the sowing of pasture, water for irrigation systems, the improvement of houses, access to drinking water and the paving of the main road (2). Based on these promises, the company achieved a social license to operate. The local authorities trusted the company and gave permission for the use of the road. This way of reaching consent resonates with Navarro's (2015) analysis that forms of development that are discursively linked with progress and modernisation, and propagate that extractive projects will directly benefit the adjacent zones, function as mechanisms of co-optation of communities. Loyalty to such projects, then, is based on dependence and subordination. This mechanism also becomes manifest in the following quote:

Lastly the people convinced me. They said that things would become better, that there would be fish here and that they would support the cattle breeders with pasture, but they didn't convince us... then they promised [a] road and we laid it down in minutes that we as a commission gave them another opportunity. They constructed this road, and they arranged drinking water through a reservoir that goes down to the swamp, but it only lasted through the inauguration. There's the reservoir water pump [points at the reservoir], a small one, there's no water in it. I mean, this is pure deception, [they] only [did it] so that we would give our consent (3).

In sum, the CFE acquired permission to use the road to the construction site by promising benefits of the dam for the community and other related projects that would improve its inhabitants' living conditions. They reached this consent and legitimacy through negotiating with the *ejido* authorities.

### **New actors, new struggles**

The community, but also the *ejido*, suffered from environmental losses and numerous human rights violations as a result of (the construction of the) dam. *Ejidal* lands that were home to approximately four families, were flooded. In addition, the floods also caused the loss of paddocks and damaged the alluvial soils that were located close to the river. To make up for these negative impacts of hydropower developments, CFE offered compensation and deposited eleven million pesos to the *ejido* in the Fideicomiso Fondo Nacional del Fomento Es-

tatal (FIFONAFE) (Montalvo 2009). This amount of money, however, was not considered as enough to meet up to the damages the dam had caused and was thus not accepted as such by the local authorities. In their negotiations with the company, the *ejidal* authorities were supported by two new actors that had entered the playing field: the NGO KUPURI and the legal office of the Instituto de Derecho Ambiental (IDEA – Institute for Environmental Law). They accompanied the negotiations between the *ejido* and the CFE from 2004 to 2006. In 2006 the *ejidal* authorities (with the help of the abovementioned organisations) and the CFE reached an agreement: the CFE would pay 53 million pesos to the *ejido* in compensation for the negative impacts of the hydro developments. 47 million pesos were for the whole *ejido* to compensate for the communal goods and lands that had been expropriated. The remaining 6 million pesos were delivered to the individual inhabitants of the *ejido* and could be used for payments of personal different goods (Montalvo 2009).

KUPURI and IDEA became important actors in the struggle for justice related to the hydro developments. With their support, people from different ethnic groups and professions were all together in the same processes of contention; the field of force where the struggle took place became inhabited by *mestizos* as well as indigenous peoples. The conflict about the impacts of the dam and the subsequent resistance towards, and negotiations with, the CFE inadvertently contributed to the formation of a community identity that was rooted in the common rights that were violated (Ballard & Banks 2003: 298; Horowitz 2011); the community was identified as “the affected population”. In relation to other communities, the *ejido* became known as a community that had successfully reached a fair compensation. Some of its representatives were invited to support other socio-environmental struggles:

We went abroad, I was in El Salvador, supporting other families [who lived closed to] other dams that were going to be constructed. Another *compañero* went to Brazil, and we also were in Guerrero. We joined the indigenous people in Chiapas because they didn't want the hydroelectric dams to be constructed because that would make them lose their lands (4).

Local strategies of resistance, thus, developed in relation to global dynamics, but at the same time constituted new forms of micropolitics (Rasch & Köhne 2016). Parallel to the political and social processes of negotiation for compensation, a new form of making a living emerged in the *ejido*: the catching of tilapia. Community members founded a cooperative with the objective to capitalise the fish in the river and to organise the community to be able to manage the fishing resources. Fishing became momentous in the community between 2007 and 2010; several people were able to improve their living conditions and to purchase some home appliances. Fishing for tilapia became very fruitful and the extra income and improved living conditions in the community, shaped the way its inhabitants started thinking about impacts of hydroelectric develop-



ments. Those who benefitted from a higher income, became more sympathetic to the dam.

These developments attracted new actors to the community from 2010 onwards, further establishing the community as a narco-environment. Among these were illegal fishermen that had no permit and, in addition, did not consider the time restrictions that were put on fishing activities. According to testimonies from the community, these people came from different parts of Nayarit, but also from the state of Michoacán. The presence of multiple actors from different places in the same territory (Watts 2000: 268) and the benefits of the hydro resources would become important determinants of social reconfigurations that came about in the community through authoritarian practices like monopolisation and fixed prices. As we will see in the next section, by monopolising and controlling the price of tilapia these new actors gained control over the use of the river and the reservoir and the population was subjected to authoritarian politics and fish production impairment.

### **Illegality and violence as new codes of governance**

The clandestine operations in the reservoir complicated making a living for residents and slowly started to shape multiple, sometimes contradicting, responses towards this new situation. Community members who made their living from the reservoir, started to face oppression by the *acaparador*, the commercial intermediary who had the absolute control over the selling of the reservoir's fish. He collaborated with illegal groups who would force local fisherfolk to over fish, instead of preserving the reservoir like they used to:

It's fishing 24 hours a day, the buyers are from Michoacán... if you don't fish, they will send people to fish, and if you turn laborious, you will wake up dead (*con una piedra en el pescuezo*), it's better to fish and not to die (5).

The *acaparador*, the criminal group and fishermen from outside the community slowly appropriated the reservoir by way of amplifying the catch of the tilapia and not adhering to the fishing restrictions. In addition, local fisherfolk had to pay quota for their right to fish. This clandestine way of working evolved further during the presidency of Felipe Calderón (2006-2012). During this era Mexico went through an armed conflict known as the "war on drugs". Nayarit also became home to the bloody struggle over territory between the state and criminal groups linked to the drugs economy. This resulted, among others, in the repression of *ejido* authorities. They were often forced to participate in clandestine activities, as was voiced by a former *ejido* authority:

This guy came and said to me, "come here, we came here to tell you that you will be our contact person when it comes to collecting the money [for

the right to] fish... you are going to be the link, you are going to make everybody pay” (6).

The combination of repression and violence described above is best understood as a “politics of terror” (Navarro 2015). A web of illicit actors, of which was not clear how they were connected to each other, gained control over the reservoir through authoritarian practices, as a community member illustrated:

Now, when you see a car with soldiers and judicials, this means that you see a car with criminals who come here and you don’t know what they’ll take from you, everybody is afraid of them, they nurture fear, the whole world is afraid (7).

The enforcement of new fishing quota by the *acaparador* as well as the new codes of governance, including repression, authoritarianism, and monopolisation, in addition to the absence of room for manoeuvre for community members, produced a situation in which community outsiders became the new hegemonic actors. These actors slowly, but consistently, spread a collective fear that undermined local political agency, like community meetings and the fishing cooperative.

Whereas in 2006 a fair compensation for the negative impacts of the dam was achieved by way of resistance by different local actors and NGO’s towards hydroelectric developments in the region, combined with a media campaign that put the struggle out in the public, from 2010 onwards ways of responding and resisting hydroelectric developments, often closely connected to criminal activities, became more hidden. The new order of illegality and violence silenced local resistance. In this context, the way the community’s response mechanisms developed were not so much informed by the construction of energy projects, but rather related to the violation of human rights, dispossession, and the constitution of a violent narco-environment. Again, these response mechanisms were embedded in micropolitics.

The presence of illegal fishers, the illicit group and the *acaparador*, combined with the complete absence of the state, produced a context in which the reservoir could be over-extracted. The *acaparador* worked together with illicit groups in coercing local fishermen to fish more and more and to sell the fish to him. This strengthened his monopoly in the community. The informal fishermen that were not from the community also earned money by fishing, and the clandestine group acquired more income by forcing local fisherfolk to pay for their right to fish, or to pay one peso for each kilo of tilapia that they would catch. This overfishing affected the amount of fish in the river.

Local fishermen also engaged in pirating practices, as becomes clear from the words of this fisherman: “Well, here we never stop fishing, pirating is here to stay. When it’s time to stop fishing [*se viene la veda*], we continue to fish, and that’s why there’s no tilapia!” (8). There are, however, differences between commercial pirating and pirating practices that are necessary to be able to pro-

vide one's livelihood. Pirating for livelihood sustenance means fishing 3 to 5 kilos for consumption, whereas commercial and extractive pirating involves filling whole trucks with tons of fish to sell on the market. Pirating for livelihood is, then, a way of resisting illicit over-fishing by the fishers external to the community. At the same time, the local population considered commercial pirating as a form of stealing.

In sum, repression and illegality became established as new codes of conduct in fishing activities. Clandestine groups intimidated and directly threatened local fishermen in order to coerce the local fishing industry. There were also cases of physical violence towards some fishermen, as well as forced collection of quotas. The fishers were not allowed to sell their fish to other people, like this fisherman exemplifies:

But, I mean, the buyer has his people to come and beat you up, they get angry so that you won't sell to anyone else. And if you do sell to someone else, they find out and they'll come and beat you, really beat you up (*te ponen una tabliza*) and they will keep your head under water, again and again, until you won't be able to say anything (9).

## Resistance

In this article we not only consider overt acts of resistance as resistance, but also, in line with the work of van der Ploeg, more covert acts, like forms of production that have been created to confront dominant steering and ordering mechanisms in society (Holland & Einwohner 2004; van der Ploeg 2007). The inhabitants of the community developed multiple ways – covert acts of resistance – of mitigating the effects of the hydroelectric developments and the related violent and repressive governance that became part of the community as a narco-environment. As such they secured their ways of making a living whilst facing different, but related developments: the establishment of the hydroelectric power dam, fishing as a main source of income, and the arrival of external actors that engendered a context of criminality, violence and the becoming of as a narco-environment. The different responses that evolved as a reaction to these transformations in the community can be understood as response assemblages (Briassoulis 2017) that, following Horowitz (2017), multiply, compete and might conflict as they develop facing environmental threats. The ways in which the inhabitants responded to the changes in their community, did not follow a pattern. Between 2007 and 2010 the main responses were internalisation and appropriation. By way of these responses, inhabitants mitigated the consequences of hydropower developments, like the flooding of pastures and alluvial crops, as well as the biophysical transformations rooted in turning a river into a reservoir (Pelayo 2020).

## Internalisation and appropriation

Internalisation as a (livelihood) strategy comprises the mechanisms that are developed to consolidate the bases of endogenous resources (van der Ploeg 2007). This entails small scale production for own consumption, which make themselves independent from products that can be bought at the market (Schneider & Niederle 2010: 931). In the case of the hydroelectric developments described above, internalisation can, in addition, be considered a form of resistance, because it uses local knowledge to mitigate the scarcity of fish and to organise the selling and distribution of fish. Community members resisted the transition towards new productive forms, such as fishing. One of the strategies developed to face the decreased fishing stock, was to continue with traditional agrarian practices like the *coamil* (growing maize). The growing of maize proved to be an important activity, like this *campesina* shares:

[First, they went] from [sowing the land] to fishing, and then they didn't want to sow the land anymore, because of the fish, but now the fish isn't there anymore, the people started to sow the land again (10).

The different internalisation strategies that evolved, were rooted in, one, the trust that community members had in their traditional knowledge about agriculture, and, two, the scarce resources that withheld people from, for example, using fertiliser. These two elements resulted in a rejection of such ways of farming, like this elderly *campesino* confirms:

Everything (bad) is caused by these fertilisers. First you use them to work your land, and the next moment you have worms...adding more fertilisers (*productos*) only causes more diseases (11).

Fertilisers, in this case, are not considered any good. Re-using endogenous seeds as well as returning to growing the *coamil* are both examples of acts of resistance that developed during and after the installation of the hydroelectric power dam. People also employed strategies of appropriation to adjust to the loss of alluvial farming lands and pastures. This included taking advantage of new ways of making a living, like fishing, that became possible within the reservoir. The appropriation of the reservoir was realised by way of dividing the river among the inhabitants of the community, but also through the inauguration of cooperatives that were geared towards capitalising the catching of fish. These appropriation mechanisms were realised with the objective to protect the local production: "What the *ejido* did was defending its territory, nothing less, nothing more, through the cooperative"(12). Working through the cooperative, then, was a way of adjusting to the livelihood possibilities that were created by the construction of the hydroelectric power dam. As mentioned before, the resistance strategies developed after 2010 were geared towards mitigating the impacts of clandestine activities in the reservoir. These strategies can be divided in 1) intensification, 2) intentional transgression of rules and regulations,

and 3) the objection of the imposed system. We will now discuss these strategies, and how they can be considered as resistance, in more detail.

### *Intensification*

In this paper, we understand strategies of intensification as practices that increase productivity, involving a more intensive use of the workforce and economic resources, as well as environmental costs that evolved as a way to accommodate the dynamics of the market (Pelayo 2020). We consider these strategies as resistance because they entail explicit actions geared towards maintaining the resources that communities use for making a living. Intensification happened in four different dimensions: the workforce, fishing activities, forest clearance, and agricultural activities. The intensification of the workforce entailed that residents of the community started to alternate fishing and agriculture, and that women and children also became full members of the workforce. This implied more time and manpower that could be inverted in the productive process: “Before, they didn’t work as much, but there’s no product [fish] anymore they work more”(13). In terms of the intensification of fishing activities, fisherfolk started to use larger numbers of fully extended nets, for extended periods of time. Different species were caught in an earlier stage than usual: “There is no closed season [...] they take the fish out before they can reproduce themselves, there’s no breeding anymore” (14). The intensification of agricultural activities was realised by (excessive) use of fertilizer in order to increase production: “Well, in order to get the maize growing, it’s always been very small, but with the fertiliser, they become enormous (*se dan los botones grandes*) (15). Finally, the clearance of the forest on the hill slopes, was a way of compensating for the land and forest resources that were lost; a way for community members to protect their ways of making a living: “It’s not allowed to cut trees for the coamil... but they haven’t brought us a bag full of pasture to survive” (16).

### *Intentional transgression*

Intentional transgression strategies evolved as a response towards, first, the detriment of the fish, and, second, the illicit groups that had come to the reservoir to earn money from it through the repressive and violent methods, which contributed to the constitution of the community as a narco-environment, described above. Strategies of intentional transgression are actions that are realised because of material losses and damages. In addition, they reflect a political positioning towards the repressive model of governance (Pelayo 2020). Intentional transgression was mostly rooted in experiences of dispossession and materialised through transgressing environmental norms and regulations regarding fishing, as was expressed during one of the focus groups: “Well, other people come here and take the fish, so it’s better to do the same”. And “The closed

season is not respected. The organisation says, you have to respect it, but others don't. Some people also participate because the fish is taken away anyway" (17). Another way of actively rejecting repressive regulations, was the revival of forbidden traditional fishing practices after 2010, like the use of the *arpón* (harpoon), the *anzuelo* (fish hook), and the *atarraya* (a round net, used to fish in shallow water), like a fisherman shares in an interview:

There are many strategies, but they are illegal, one of them is fishing with the *arpón*, with *caña* or *anzuelo*. Fishing with *atarraya* is also not allowed according to the regulations (18).

These are traditional forms of fishing that had become illegal as part of environmental protection of the river. Through reviving traditional fishing practices, fisherfolk contested the imposed, repressive norms and regulations related to fishing in the reservoir. Also, community members transgressed environmental norms by not respecting the closed season, fishing in forbidden waters, employing illegal fishing strategies, and by using more than the allowed amount of nets (according to the regulations, no more than five nets are allowed) and as such broaden the range of fish that was caught: "We use like 150 nets and when the water rises they cover a large part of the surface" (19).

Transgressing fishing norms is, thus, a productive activity in the community. Fisherfolk know that it is prohibited to use a certain amount of fishing nets. However, the necessity to catch more fish to be able to provide for a living, as well as the absence of institutional authorities that regulate fishing, facilitate overfishing. At the same time, for the community, worries about the environment did not concern forest resources, but were oriented towards the conservation of fishing in order to be able to make a living. This concern about fishing resources is rooted in the fish crisis that occurred in the community. This was an important point in history for the community and constitutes an important building block of a collective identity, rooted in the protection of fishing resources. From 2011 onwards the community started to become more aware of the ecological consequences of their fishing practices and the closed season was broadened for a month to allow for the tilapia to complete its cycle to mature, as this fisherman explains:

It's all about taking care, that's it. After more or less two years of protecting the fishing in times of the closed season for fishing, there will be a recuperation [of the fish stock]. In Aguamilpa they also ran out of fish and they organised and started to protect two or three years and there was recuperation and they continued to take care of and protect the reservoir, so that there will be production (20).

This situation produced tensions between fisherfolk who wanted to conserve and let the fish complete its productive cycle and those that preferred an immediate fulfilment of their livelihood. The situation became more intense because of the intensive extraction of fish promoted by external actors. Hence, devel-

opments from the outside caused contradictory responses inside the community (Horowitz 2017).

### *Strategies of objection*

Although the *acaparador* had gained control and monopoly over the fishing through authoritarian repression. This did not mean that the community went along with this – they actively did express their unconformity with the system in various ways, using several strategies of objection, including manifestations of unconformity through which people contest and confront “the imposed” in subtle ways (Pelayo 2020). These strategies not only contain demands of justice intended to mitigate the results of oppression, but also search to disclose acts of injustice. One strategy of objection of community members was transferring the risk of engaging in illegal fishing activities to the *mozos*, who are community members that do not have their own permission to fish, but fish for others who do have a licence. The objective was to avoid being vulnerable towards the repression in the reservoir. The *mozos*, then, faced a double risk. On the one hand they faced insecure income (for not having their own licence to fish), and on the other hand they faced violence and illegality in the reservoir (while fishing for others). As a reaction, *mozos* started to turn themselves against the people with licences that they worked for and to get their own fishing permits, as this *mozo* explained:

And, the people say, let’s come together as a group, as workers, because we are workers, we work for them every year. We unite so that we can fight the *patrones*, take the permits away from them, that’s what he [the *acaparador*] said to us (21).

Hence, in the community meetings as described above, people joined forces in order to obtain their own fishing permits.

Fishermen also actively rejected the new, violent forms of governance by way of (non) actively occupying the reservoir. In the end, occupying proved to be an effective way to prevent other actors from coming to the reservoir, although it did not result in catching more fish, as the catch was very scarce. This occupation of the river, without catching fish was realised on a daily basis between 2010 and 2017. A fisherman tells about this:

And when you don’t work *el tipo* [the *acaparador*] sends his own people... this year he sent a crew (*cuadrilla*) over there where we weren’t fishing, different people were into placing their nets all over the place... and there’s nothing that you can say, there’s nothing you can say because it’s the era of pirating and the people want to work (fish), no matter what it takes (22).

Although the occupation of the river protected the territory to a certain extent, the illicit groups still benefited from massive extraction of fish. This strengthened the position of external actors, a community member explained:

It's because of too little respect for the biology of things and the closed fishing season and this something everybody is involved in. The first year it was people from outside that did this, but then the fisherfolk from Cantiles said, we are going to take with us, what they want to take with them... but what happened... the reservoir (*el charco*) remained without tilapia (23).

In sum, the resistance strategies did not have positive effects for the fishermen and the community. This resonates with the point that Horowitz has made that local resistance strategies are often competing and confronting (Horowitz 2017). These confrontations give space to “unwanted socio-environmental settings”, unexpected biophysical transformation of the ecosystem with negative results for the population (Pelayo 2020). The overall crisis was produced, first, because of the repressive character of the *acaparador* towards the fishermen. Because of this, fishermen transgressed the fishing norms. Second, resistance mechanisms such as occupying the reservoir during the closed season protected the territory from outsiders.

## Conclusions

This paper analysed how livelihood strategies and micropolitics became articulated in the context of transforming energy and fishing markets, and the constitution of narco-environments. By way of a case study of hydropower developments in Mexico, we demonstrated that hydropower projects can easily develop into economic enclaves that are characterised by clandestine activities. This violent narco-environment started to evolve when illicit actors from outside the community arrived and settled down and started to develop illicit activities. Fishing intensified and the codes of governance became repressive and violent. The inhabitants reacted to repression and transformed their ways of living as a way of resisting these developments in ways that were at times contradicting and counterproductive. These micropolitics in resistance evolved in the context of and are informed by the violent dynamics that characterise narco-environments.

In the face of repression, residents joined forces in the resistance. They developed (transgressing) resistance strategies towards hydropower developments, like illegal fishing for sustenance, transferring risks to informal laborers, and occupying the productive space. Different narratives started to emerge about how to continue fishing activities. These, at times contradicting, responses to hydropower developments and repressive water governance structures, reveal how livelihood strategies and means of production can operate as resistance mechanisms, when other forms of resistance might be too dangerous and risky because of the unpredictable and disruptive character of narco-environments.

This paper has shown how inhabitants gave meaning to hydropower developments in their living environment and interiorised these developments in



their ways of life. These, sometimes contradictory, ways of livelihood sustenance can be seen as a way of resisting the consequences of hydropower developments, among which the constitution of a narco-environment: the establishment of criminal actors and violent and authoritarian ways of governance in the community. The act of resisting does not end in open and static conflict, but is dynamic and often hidden. Finally, the paper highlighted how responses towards hydropower developments intensified the environmental crisis and informed new micropolitics based on clandestine activities, environmental degradation and social vulnerability, shaped by the becoming of a narco-environment.

\* \* \*

**Mariana Pelayo Pérez** received her PhD in Sustainability Sciences at Universidad Nacional Autónoma de México (UNAM). She is an instructor and researcher at the Social Sciences school at the Universidad Autónoma de Nayarit. Her research approach favors a transdisciplinary approach, including political ecology, human geography and environmental sociology. Her research interests include hydropolitics, micropolitics of conflict and resistance, human-environment relational ontologies, and biopolitics.

Email: pelayombpp@gmail.com

**Elisabet Dueholm Rasch** is associate professor at Wageningen University. Her research topics include (indigenous) mobilization toward neo-liberal policies and extractive projects, and energy production in Latin America (Guatemala) and the Netherlands. Her contemporary fieldwork in Guatemala focuses on how territory defenders experience violence and criminalization.

Address: Sociology of Development and Change group (Bode 18), P.O. Box 8130, 6700 EW Wageningen, The Netherlands

Email: elisabet.rasch@wur.nl

## Notes

1 The numbers in parenthesis refer to the interviews, which are listed in the appendix.

## References

- Aguilar-Støen, M., & Hirsch C. 2017. Bottom-up responses to environmental and social impact assessments: A case study from Guatemala. *Environmental Impact Assessment Review*, 62, 225–232. <https://www.sciencedirect.com/science/article/abs/pii/S019592551630258X>
- Aguilar, B., Cerdán, P., Kocian, M. & Aguilar, A. 2017. Impactos de la narco deforestación sobre las áreas protegidas en Centroamérica: una aproximación desde la economía ecológica crítica. A. Azamar Alonso, D. Escobar Moreno & S. Peniche Camps, *Perspectivas de la Economía Ecológica en el Nuevo Siglo*, 241–270. México: UDG.

- Ballard, C. & Banks, G. 2003. Resource wars: The anthropology of mining. *Annual Review of Anthropology*, 32, 287–313. <https://doi.org/10.1146/annurev.anthro.32.061002.093116>
- Ballvé T. 2018. Narco-frontiers: A spatial framework for drug-fuelled accumulation. *Journal of Agrarian Change*, 19 (2), 211–224. <https://doi.org/10.1111/joac.12300>
- Bebbington, D., Verdum, R., Gamboa, C., & Bebbington, A. J. 2018. The infrastructure-extractives-resource governance complex in the Pan-Amazon: Roll backs and contestations. *European Review of Latin American and Caribbean Studies*, (106), 189–214. <http://doi.org/10.32992/erlacs.10414>
- Boelens, R., Shah, E. Bruins, B. 2019. Contested knowledges: Large dams and mega-hydraulic development. *Water* 11 (416). [https://www.researchgate.net/publication/331359295\\_Contested\\_Knowledges\\_Large\\_Dams\\_and\\_Mega-Hydraulic\\_Development](https://www.researchgate.net/publication/331359295_Contested_Knowledges_Large_Dams_and_Mega-Hydraulic_Development)
- Bury, J. 2008. Transnational corporations and livelihood transformations in the Peruvian Andes: An Actor-oriented political ecology. *Human Organization*, 67 (3), 307–21.
- Blaikie, P.M. & Brookfield, H. 1987. *Land degradation and society*. London/New York: Methuen
- Briassoulis, H. 2017. Response assemblages and their socioecological fit: conceptualizing human responses to environmental degradation. *Dialogues in Human Geography*, 7 (2), 166–185. <https://doi.org/10.1177/2043820617720079>
- Bryant, R.L. & Bailey, S. 1997. *Third world political ecology*. London/New York: Routledge.
- CFE, C. F. 2002. *Manifestación de Impacto ambiental*. México: CFE.
- CONAGUA. 2014. *Estadísticas del Agua en México*. México: Secretaría de Medio Ambiente y Recursos Naturales, Comisión Nacional del Agua. [http://sina.conagua.gob.mx/publicaciones/EAM\\_2017.pdf](http://sina.conagua.gob.mx/publicaciones/EAM_2017.pdf)
- Corbin, J. & Strauss, A. 1990. Grounded theory research: Procedures, canons and evaluative criteria. *Qualitative Sociology*, 13, 3–21.
- Devine, J., Currit, N., Reygadas Langarica, Y., Liller, L. & Allen G. 2020. Drug trafficking, cattle ranching and land use and land cover change in Guatemala's maya biosphere reserve. *Land Use Policy*, 95 <https://doi.org/10.1016/j.landusepol.2020.104578>
- Douglas, I. 1988. Book reviews: Blaikie, P. and Brookfield, H. 1987: Land degradation and society, *Progress in Human Geography*, 12 (4), 615–618. <https://doi.org/10.1177/030913258801200425>
- Díaz, O., Escobar, E., Gómez I., & Morán W. 2011. La dinámica agroambiental de la zona norte del Humedal Cerrón Grande. Chile: Rimisp.
- Duarte-Abadía, B., Boelens R., & Avendaño R., T. 2015. Hydropower, encroachment and the re-patterning of hydrosocial territory: The case of Hidrosogamoso in Colombia. *Human Organization* 74 (3) 243–254.
- Fearnside, P. 2015. Brazil's Belo Monte Dam: lessons of an Amazonian resource struggle. *DIE ERDE—Journal of the Geographical Society of Berlin* 148(2-3), 167–184. <https://www.die-erde.org/index.php/die-erde/article/view/265>
- \_\_\_\_\_. 2017. Amazon dams and waterways: Brazil's Tapajós Basin plans. *AMBIO A Journal of the Human Environment*, 44 (5), 426–439. [https://www.researchgate.net/publication/273833463\\_Amazon\\_dams\\_and\\_waterways\\_Brazil's\\_Tapajs\\_Basin\\_plans](https://www.researchgate.net/publication/273833463_Amazon_dams_and_waterways_Brazil's_Tapajs_Basin_plans)
- Giddens, A. 1976. *New Rules of Sociological Method*. London: Hutchinson.
- \_\_\_\_\_. 1979. *Central Problems in Social Theory*. London and Basingstoke: Macmillan.
- González, F. 2013. Espacialización de la violencia en las ciudades latinoamericanas: una aproximación teórica. *Cuadernos de geografía, revista colombiana de geografía*, 22 (1), 169–186.
- Hidalgo-Bastidas, J., & Boelens, R. 2018. Inundaciones políticamente construidas. El megaproyecto hídrico Chone en Ecuador. *Cuadernos de Geografía*, 101, 127–148.

- Hollander, J., & Einwohner, R. 2004. Conceptualizing resistance. *Sociological Forum*, 19(4), 533–554. [www.jstor.org/stable/4148828](http://www.jstor.org/stable/4148828)
- Hommes, L., Veldwisch, G., Harris L. & Boelens R.(2019) Evolving connections, discourses and identities in rural–urban water struggles. *Water International*, 44(2), 243–253, DOI: 10.1080/02508060.2019.1583312
- Horowitz, L. 2008. ‘It’s up to the clan to protect’: Cultural heritage and the micropolitical ecology of conservation in New Caledonia. *The Social Science Journal*, 45 (2), 258–278. <https://doi.org/10.1016/j.soscij.2008.03.005>
- \_\_\_\_\_. 2011. Interpreting industry’s impacts: Micropolitical ecologies of divergent community responses. *Development and Change*, 42, 1379–1391. <https://doi.org/10.1111/j.1467-7660.2011.01740.x>
- \_\_\_\_\_. 2016. Rhizomic resistance meets arborescent assemblage: UNESCO world heritage and the disempowerment of indigenous activism in New Caledonia. *Annals of the American Association of Geographers*, 106 (1), 167–185. <https://doi.org/10.1080/00045608.2015.1090270>
- \_\_\_\_\_. 2017. Power, cooptation, and the multiplicity of response assemblages: An example from New Caledonia. *Dialogues in Human Geography*, 7 (2), 192–196. <https://doi.org/10.1177/2043820617720092>
- Humphreys Bebbington, D., Verdum, R., Gamboa, C., & Bebbington, A. J. 2018) The Infrastructure-extractives-resource governance complex in the Pan-Amazon: Roll backs and contestations. *European Review of Latin American and Caribbean Studies*, (106), 189–214. <http://doi.org/10.32992/erlacs.10414>
- Lohmann, L. 1995. No rules of engagement: Interest groups, centralization and the creative politics of ‘environment’ in Thailand. J. Rigg (ed), *Counting the costs: Economic growth and environmental change in Thailand*, 211–234. Singapore: Institute of Southeast Asian Studies.
- Long, N. 1992. From paradigm lost to paradigm regained? The case for an actor-oriented sociology of development. N. Long and A. Long (ed.) *Battlefields of knowledge: The interlocking of theory and practice in social research and development* (16–43). London/New York: Routledge.
- Lynch, B. 2006. *The Chixoy Dam and the Achi Maya: Violence, ignorance, and the politics of blame*. NY: Center for International Studies <https://hdl.handle.net/1813/55025>
- McSweeney, K., Nielsen, E., Taylor, M., Wrathall, D., Pearson, Z., Wang, O., & Plumb, S. 2014. Drug policy as conservation policy: Narco-deforestation. *Science* 343, 489–490. <https://doi.org/10.1126/science.1244082>
- Middeldorp, N. & Le Billon P. 2019. Deadly environmental governance: Authoritarianism, eco-populism, and the repression of environmental and land defenders. *Annals of the American Association of Geographers*, 109 (2), 324–337. <https://doi.org/10.1080/24694452.2018.1530586>
- Moore, D. S. 1993. Contesting terrain in Zimbabwe’s eastern highlands Political ecology, ethnography, and peasant resource struggles. *Economic Geography*, 69 (4), 380–401. <http://doi.org/doi:10.2307/143596>
- Montalvo, M. 2009. *Nos agarraron verdes. El proceso de negociación de las comunidades afectadas por la Presa El Cajón* (Tesis de licenciatura).UAM, México.
- Murdoch, J. & Marsden, T. 1995. The Spatialization of Politics: Local and National Actor-Spaces in Environmental Conflict. *Transactions of the Institute of British Geographers*, 20 (3), 368–380. [https://www.jstor.org/stable/622657?seq=1#page\\_scan\\_tab\\_contents](https://www.jstor.org/stable/622657?seq=1#page_scan_tab_contents)
- Navarro, M. 2015. *Luchas por lo común. Antagonismo social contra el despojo capitalista de los bienes naturales en México*. México: BUAP.
- Neurath J. 2003. *Huicholes. Pueblos indígenas del México contemporáneo*. México: CDI-PNUD.

- Pelayo, M. 2020. Reconfiguración de modos de vida, mecanismos de respuesta local y procesos emergentes de gobernanza ambiental de comunidades aledañas a presas hidroeléctricas en el Río Santiago, Nayarit, México (Tesis de doctorado). UNAM, México. <http://132.248.9.195/ptd2020/marzo/0801687/Index.html>
- Pellegrini, L., & Arsel, M. 2018. Oil and conflict in the ecuadorian amazon: an exploration of motives and objectives. *European Review of Latin American and Caribbean Studies*, (106), 217–226. <http://doi.org/10.32992/erlacs.10413>
- Porto-Gonçalves, C. 2006. El agua no se niega a nadie (La necesidad de escuchar otras voces). *Polis, Revista Latinoamericana*, 5(14). <https://www.redalyc.org/pdf/305/30551410.pdf>
- Rasch, E. & Köhne, M. 2016. Hydraulic fracturing, energy transition and political engagement in the Netherlands: The energetics of citizenship. *Energy Research & Social Science*, (13), 106–115. <https://doi.org/10.1016/j.erss.2015.12.014>
- Rasch, E. 2017. Citizens, criminalization and violence in natural resource conflicts in Latin America. *European Review of Latin American and Caribbean Studies*, (103), 131–142. <http://doi.org/10.18352/erlacs.10193>
- Registro Agrario Nacional. 2017. Solicitud de información 1511100053617. INAI INFOMEX, Gobierno Federal, 24 agosto, 2017.
- Rodríguez, A. 2017. Configuración hidrosocial: ¿paisaje, territorio o espacio? *Waterlat-Gobacit Network Working Papers*, 4 (3), 27–41. 10.5072/zenodo.167126
- Silva, E., Akchurin, M., & Bebbington, A. J. 2018. Policy effects of resistance against mega-projects in latin america: An introduction. *European Review of Latin American and Caribbean Studies*, (106), 27–47. <http://doi.org/10.32992/erlacs.10397>
- Singto, C.; Fleskens, L. & Vos, J. 2018. Institutionalizing participation in water resource development: Bottom-up and top-down practices in southern Thailand. *Water*, (10) 781.
- Schneider, S. & Niederle, P. 2010. Resistance strategies and diversification of rural livelihoods: the construction of autonomy among Brazilian family farmers. *Journal of Peasant Studies*, (37), 379–405. <http://doi:10.1080/03066151003595168>
- Scott, J. 1998. Seeing like a state. How certain schemes to improve human condition have failed. New Haven/London: Yale University Press. <https://doi.org/10.1017/S0007087400334240>
- Tellman, B. et al. 2020. Illicit drivers of land use change: Narcotrafficking and forest loss in Central America. *Global Environmental Change*, 63. <https://doi.org/10.1016/j.gloenvcha.2020.102092>
- Van der Ploeg, J. D. 2007. Resistance of the third kind and the construction of sustainability. Paper presented at the ESRS Conference, 20-24 August. Wageningen. <http://www.jandouwevanderploeg.com/EN/publications/articles/resistance-of-the-third-kind/>
- Van der Ploeg, J. D., Ye Jingzhong & Schneider S. 2012. Rural development through the construction of new, nested markets. *Journal of Peasant Studies*, 39 (1), 133–173. <https://doi.org/10.1080/03066150.2011.652619>
- Walker, R., & Simmons .2018. Endangered Amazon: an indigenous tribe fights back against hydropower development in the Tapajós Valley. *Environment: Science and Policy for Sustainable Development* 60 (2) , 4–15.
- Walker et al. 2019. Avoiding Amazonian catastrophes: Prospects for conservation in the 21st century. *One Earth*, 1 (2), 202–215. <https://doi.org/10.1016/j.oneear.2019.09.009>
- Watts, M. 2000. Political ecology. E. Sheppard & T. J. Barnes (eds.), *A companion to economic geography*, 257–274. Oxford/Malden: Blackwel.
- Wrathall, D. et al. 2020. The impacts of cocaine-trafficking on conservation governance in Central America. *Global Environmental Change*, 63. <https://doi.org/10.1016/j.gloenvcha.2020.102098>

## Appendix

### *Interviews*

1	Community member (46), June 25, 2017
2	Representative of the compensation commission (55), June 25, 2017.
3	Rancher (46), December 12, 2017.
4	Community leader (57), December 12, 2017.
5	Focus group with community members, June 25, 2017.
6	Focus group with community members, June 25, 2017.
7	Focus group with community members, June 25, 2017.
8	Fisherman (31), September 3, 2017.
9	Fisherman (31), September 3, 2017.
10	Campesina (30) July 20, 2017.
11	Campesino and fisherman (67) September 3, 2017.
12	Fisherman (31) July 20, 2017.
13	Campesina (30) July 20, 2017.
14	Focus group with community members, June 25, 2017.
15	Campesino (71), September 24, 2017.
16	Community leader (57) December 12, 2017.
17	Focus group with community members, June 25, 2017..
18	Fisherman (31) July 20, 2017.
19	Fisherman (31), July 20, 2017.
21	Focus group with fishermen, September 3, 2017.
22	Fisherman (30), September 3, 2017.
23	Community member (57), December 12, 2017.