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# Extraterritorial Investments, Environmental Crisis, and Collective Action in Latin America

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**Summary.** — A growing number of extraterritorial private-sector actors, often in partnership with the state, are expanding the frontiers of extractive and primary export economies to new rural territories in Latin America. This paper analyzes the conditions that might drive meaningful efforts to address environmental problems in territories dominated by large, externally controlled natural resource-based activities. It studies three cases: salmon aquaculture in Chiloé (Chile), fruit growing in O'Higgins (Chile), and gas production in Tarija (Bolivia). We conclude that such efforts are unlikely to occur unless environmental problems directly threaten the short-term viability of the activities or social movements emerge to demand change.


*Key words* — Latin America, Bolivia, Chile, extraterritorial actors, environmental institutions, extractive economies

## 1. INTRODUCTION

With the expansion of natural resource-based economies in Latin America, extraterritorial actors [1] have come to exercise increasing influence over the economic, social, and political dynamics of the rural territories in which they operate. While such actors have a long history in Latin America (sometimes dating to pre-colonial times), their number has increased over the last two decades as the combined effect of increased global demand for different natural resources, natural resource companies' efforts to identify new sources of supply and, above all, policy reforms promoting external investment in the primary sector and supported by dominant social coalitions that typically involve the central government, fractions of national elites, and interests linked to transnational investment (Gudynas, 2012; Kaup, 2013). This pattern is perhaps especially apparent for the case of mining and hydrocarbons but is also evident in the agroindustrial, bioenergy, hydroelectric, tourism, and forestry sectors (Bebbington & Bury, 2013; Borras, Franco, Gomez, Kay, & Spoor, 2012; Martínez-Alier, Kallis, Veuthey, Walter, & Temper, 2010; Muradian, Walter, & Martínez-Alier, 2012). The presence of these extraterritorial actors has catalyzed economic growth, introduced acute asymmetries of power within territories and exerted new pressures on environmental assets. [2]

These investments from extraterritorial sources and the transformations that they produce in rural territories go hand in hand with changes in environmental regulatory institutions. Typically, the institutional changes that occur earlier in these processes seek to facilitate and *initiate* new investment through the reform of laws that regulate the access to natural assets. Sometimes, the subsequent environmental and social impacts of these investments then induce various groups of actors to seek a stricter regulation of the activities undertaken by extraterritorial actors. This paper analyzes the process of institutional change when extraterritorial actors are *already* installed, have transformed economic dynamics, and have introduced new power relationships in the territory. In this context, we ask: (i) under what conditions might environmental institutions emerge that promote the protection of a territory's environmental assets; and (ii) what types of environmental institutions might be expected under those conditions? Asking these questions seems generally important, given the challenge of environmental stewardship under conditions of rapidly increased investment in natural resource industries in Latin America. The questions are also important within the context of the larger program of Latin American research of which this paper is a part (see Berdegué *et al.*, 2012 and Berdegué, Bebbington & Escobal, 2015): in that program, a detailed analysis of 20 different territories failed to identify a single territory where dynamics of change could clearly and definitely be considered environmentally sustainable. Indeed, the program's researchers spoke of an "environmental paradox" to indicate that environmental crises were seen in all types of socioeconomic dynamics, regardless of whether poverty was reduced or income distribution improved (Berdegué *et al.*, 2012).

The available literature on political ecology and environmental governance (see, for example, Bebbington, 2012; Bridge & Perreault, 2009; Lemos & Agrawal, 2006; Perreault, 2013) suggests that when powerful extractive or agroindustrial activities are present, institutional changes to reduce environmental pressures are difficult to achieve (Kirsch, 2012), and do not necessarily eliminate the conflict that these activities create (Arellano-Yanguas, 2012). In exploring the conditions under which such changes *might* occur, this paper suggests that it is important to distinguish between institutions that regulate *access to*, and institutions that regulate *management of*, the territory's natural resources. Typically, the state is proactive in creating institutions that

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facilitate large-scale investors' access to resources but much slower to fashion institutions that regulate how resources are managed by these investors. Furthermore the prior creation of institutions of access complicates possibilities for building institutions of environmental management. This study identifies two dimensions to the processes through which new institutions of environmental management might emerge: (i) the first dimension involves structural pressures on natural resources, pressures that derive in large measure due to the logics of capital accumulation as explored by ecological Marxism (O'Connor, 2001); (ii) the second dimension is one of collective action, either in the form of collective efforts of resource users to address acute environmental problems (the sort of collective action addressed by Ostrom, 1990, and others) or in the form of social mobilization and protest (as addressed by social movement scholars and political ecologists, e.g., Dubet, 1989; McAdam, 1982; Peet & Watts, 2004; Tarrow, 1983; Tilly, 1978; Touraine, 1978). [3]

Finally, we show why, even in the presence of structural pressures on the environment, management institutions might not emerge. First, the power asymmetries in the territory that are introduced by extraterritorial actors and dominant coalitions limit potential reforms to institutions that involve the management of environmental assets. In other words, extraterritorial actors might be willing to change technologies, introduce forms of monitoring, and offer some compensation for negative externalities in their projects, but will resist change in the rules that determine access to and use of natural resources. Second, the degree of inclusion of local actors in the new territorial dynamics catalyzed by investment in natural resource economies is crucial for determining their behavior with regard to extraterritorial agents and their investments. The greater the inclusion, the more concerns about natural assets are dissipated and the less likely it is that a process of mobilization against activities by extraterritorial actors will develop. Third, competition among resource users, and the fact that they experience the adverse effects of resource degradation at different times, limits the possibility that they will act collectively to address this degradation.

The empirical data for this paper were gathered in two phases. In the first phase, twenty territories were studied in depth, over an approximately year-long period and using a combination of quantitative and qualitative techniques. Each of these territories had been previously identified (on the basis of census and household survey data) as demonstrating progress against indicators of poverty, inequality and growth, and the in-depth studies sought to explain the drivers of these trends and (in most instances) identify the environmental changes that had accompanied them. In the second phase, a further round of qualitative research was undertaken in those territories whose dynamics of change had been characterized by (i) significant economic growth and (ii) the presence of powerful extraterritorial actors whose productive activities were based on natural resources. These three territories, and their related economic transformations, were: salmon farming in the Chiloé archipelago of Chile; fruit cultivation in the Chilean Region of O'Higgins; and natural gas production in the dry Chaco of the Department of Tarija, Bolivia. [4] In each instance, data were collected regarding the presence, activities, and environmental impact of these extraterritorial actors, as well as about broader economic, political and social processes, and patterns of environmental governance. The information was derived mainly from field visits, interviews with key actors and informants in the respective territories, and a review of the relevant national and sub-national legislation.

In the following section we give a brief overview of contemporary rural territorial dynamics in Latin America in the presence of powerful extraterritorial actors and introduce the three case studies. The third section explains what we understand by environmental institutions and why it is important to distinguish between institutions that regulate access and those that regulate the management of environmental assets. The fourth section analyzes the two dimensions to the pathways of institutional change that we found in our study: (i) structural pressures that lead to an environmental crisis, and (ii) social mobilization prior to environmental crises. In the concluding section, we discuss why meaningful institutional changes in the regulation of environmental assets are so difficult to achieve.

## 2. TERRITORIAL DYNAMICS AND EXTERNAL ACTORS IN LATIN AMERICA

This paper is part of a broader research project (the Rural Territorial Dynamics [RTD] Program) that analyzed how some 10,000 municipalities in 11 Latin American countries had performed over the past decade in terms of economic growth, poverty, inequality, and environmental quality (Berdegué *et al.*, 2012; Berdegué *et al.*, 2015). The program found that approximately 10% of the region's municipalities had experienced growth combined with a reduction in poverty and inequality. Such outcomes were rarely if ever experienced in isolated territories poorly connected to national or global society. Instead, this virtuous combination of the three economic variables seems to depend on some sort of connection with broader markets and the presence of "extraterritorial actors," in particular large scale enterprises and national governments. Based on the program's twenty case studies, [5] we identify two broad ways in which such actors have catalyzed growth. In the first, extraterritorial actors control and make direct use of the resources of a territory. In a case such as the production and industrial commercialization of salmon in Chiloé (Chile), or the extraction of natural gas in Tarija (Bolivia), the characteristics of the resource imply scales of operation, costs and information, capital and technology needs that make it difficult or impossible for local actors to exploit the resource without outside participation. Under these circumstances, extraterritorial actors' access to the resource becomes the principal driver of economic growth within the territory. Typically in these cases, the actors that *control* the drivers of territorial dynamics are large, private, and often transnational companies that tend to enjoy political support from the national government. The fact that these extraterritorial companies are sometimes linked to small or mid-size local companies (as is the case with salmon farming in Chiloé) or third-sector/non-profit organizations does not substantially weaken their dominant position within the territory. [6]

In the second situation, extraterritorial actors help create the initial conditions that give impetus to a territorial dynamic, but the economic driver is controlled by local actors. In 14 of the 20 cases, we found that the outside actor's intervention consisted of creating assets such as infrastructure, establishing links with markets, or providing training in key aspects that facilitated the territory's connection with other territories or with extraterritorial markets. The conditions most frequently modified by extraterritorial actors are road and communication infrastructure (which, in turn, create additional territorial assets), without which access to important markets for local products is impossible. In other territories, extraterritorial actors themselves are crucial for ensuring access to more

dynamic markets. This is the case of non-governmental organizations that connect agroecological coffee producers in Loja, Ecuador with organic coffee markets in Europe and the USA (Ospina Peralta & Hollenstein, 2015). Similar scenarios are found in dairy cooperatives in Santo Tomás, Nicaragua, which produce for international markets (Ravnborg & Gómez, 2015), or certification of mezcal production in Oaxaca (Mexico). In these cases, the connection established by extraterritorial actors is not so much physical (roads and means of communication) as social (mediation between territory and markets). Figure 1 shows a schematic summary of the two situations we identified.

In this paper we focus on three cases in which extraterritorial actors wield control over the economic driver. While these cases are a minority among the 20 territories studied in the program, their importance resides in the fact that across the region national governments have identified such large scale, extraterritorial investment in and control over natural resources as a strategy of local and national economic development. The first territory is the Chiloé archipelago in southern Chile, which has been characterized by a dramatic boom and bust in the salmon industry that displaced the centrality traditional local economy based on small-scale farming, sheep and small-scale fishing. Since its beginnings, aquaculture was strongly promoted by the national government and the salmon companies. Nevertheless, this industrial-scale salmon production was shaken in 2008 by an environmental and health crisis caused by infectious salmon anemia (ISA), the repercussions

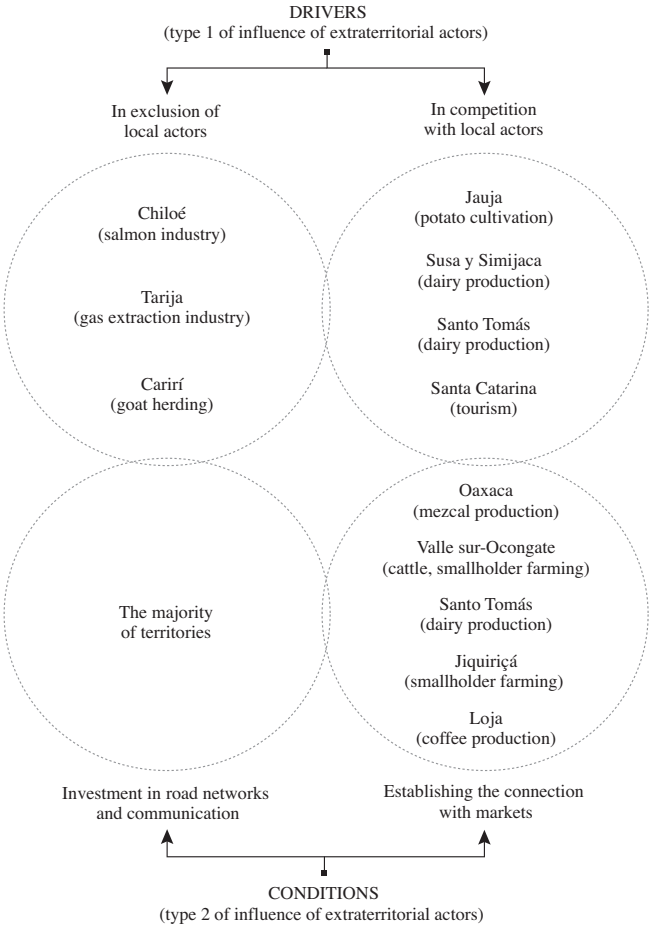


Figure 1. *Scheme of types of interventions by extraterritorial actors on the territorial dynamic.*

of which are still being felt. At the peak of the crisis, salmon production came to a practical standstill, and there were massive layoffs on the islands. Despite this crisis – itself triggered by damage to water resources that had been caused by the fish-farming industry – the local population's reaction regarding care and protection of the environment has been muted. Because the salmon industry has become their main source of employment, local communities view it positively as a source of jobs, rather than negatively as a cause of adverse environmental transformation. In 2010, however, the Chilean state developed new regulations which, though still not fully implemented, seek to support the development of the industry by improving sanitary controls and, therefore, the sustainability of fish farming (Barton & Fløysandb, 2010; Bustos-Gallardo, 2013; Macé, Bornschlegl, & Paulson, 2010; Mendoza & Ramírez, 2012; Nussbaum, Pavez & Ramírez, 2012; Ramírez, Modrego, Macé, & Yáñez, 2009).

The second case is that of the Chaco of Tarija, Bolivia, with an economy now based on the extraction of hydrocarbons, mainly by the transnational companies operating now in coordination with the state hydrocarbons company. Tarija is home to one of South America's largest onshore gas reserves, the Campo Margarita, operated by the Spanish company Repsol and lying beneath the Itika Guasu Community Land of Origin (*Tierra Comunitaria de Origen*, TCO). This TCO belongs to the Guaraní people, though is also occupied by non- Guaraní livestock owners. As in the case of salmon aquaculture in Chiloé, natural gas extraction in Tarija has been promoted by both the central government and transnational corporations, while the state has played only a passive role in implementing and enforcing environmental regulations. In this instance, however, the local population was more assertive and the Guaraní promoted important institutional changes. A "Friendship Agreement" that Repsol committed to in 2010 included an environmental audit, recognition of the right to prior consultation and the Guaraní communities' property rights, as well as the creation of an investment fund for community development (Anthias, 2012; Castro & Cortez, 2011; Hinojosa & Hennermann, 2011; Humphreys Bebbington, 2010, 2013).

The interior drylands of Chile's O'Higgins Region, our third case, were characterized in the past by an economy based mainly on extensive wheat farming. Land use gradually changed to support one of the country's largest agricultural industries, dedicated first to chicken and pork production and subsequently to the cultivation of olives and wine grapes. All are highly capital-intensive industries, organized as agribusinesses. This land use transformation resulted from a series of institutional changes that allowed the private use of groundwater in the territory without which the intensive agriculture that currently dominates the drylands in the interior of O'Higgins would be impossible. Agribusiness expansion, however, has been accompanied by water scarcity, the drying up of many wells, and the exhaustion or reduction of groundwater supplies, creating problems not only for the industry, but also for local residents and small farmers. The local communities opposed the installation of new agroindustrial plants and have organized protests against the increasing scarcity of water via an incipient civic movement (Mendoza & Ramírez, 2012; Ramírez, Modrego, Macé, & Yáñez, 2010).

The natural resource extraction and export-oriented agroindustry characterizing these three territories are increasingly common forms of investment in Latin America. Gudynas (2013) understands these different forms as "extractive" activities,[7] notwithstanding the obvious differences that exist among them, such as the renewability of the "extracted" resources or the scale of investment involved. More important

than the difference between extraction of minerals and cultivation of large-scale monocrops, however, is the difference between the types of productive structures that these activities foster in rural territories: cluster structures or enclave structures. While the former create a certain degree of economic inclusion for local actors and companies, in the latter, the degree of exclusion of the local population is much more significant. [8] While social resistance to the initial entry of these actors into territories has been more widely studied in recent years (e.g., Bebbington, 2012; Bury & Kolff, 2002; Latorre & Farrell, 2013), in this paper we examined the changes that might be expected in environmental institutions once such extra-territorial actors become established. We are especially interested in the factors that enable or complicate the emergence of environmental protection institutions under such conditions, and the contrasting experiences of our three cases allow us to explore this theme. In Chiloé, there was an environmental crisis followed by a significant adjustment in institutions of environmental protection. Meanwhile, the organization of the territory's productive structure in a "cluster" involving hundreds of small and mid-size providers of goods and services inhibited the formation of powerful local social movements that might call for new institutions to safeguard the environment. The contrast with Tarija is significant. In the latter territory, while there have been environmental impacts, there has not yet been a crisis – however, the "enclave"-type productive structure of gas production and the threat to the territorial control of a group of actors excluded from the activity (Guaraní communities), together facilitated the emergence of a locally based socio-environmental mobilization that led to the modification of environmental regulations before a crisis erupted. The case of O'Higgins confirms the importance of the two aforementioned factors (crisis and mobilization) for the emergence of new environmental protection institutions. In that territory (unlike Chiloé), there is only incipient environmental crisis and no locally based social movements have emerged (unlike Tarija). In O'Higgins, therefore, reforms to existing environmental institutions have not yet emerged, despite the serious state of underground water resources.

The three cases therefore help illustrate two factors that have driven the emergence of institutions for environmental protection institutions: ecological crisis and the collective action of social movements. The three cases, of course, do not exhaust the array of possible situations, nor do they illustrate the varied circumstances that facilitate or inhibit the emergence of the two factors. They also do not allow one to make generalizations that are applicable in all situations. Nevertheless, they offer useful explanations for interpreting the huge difficulty that exists in improving systems of environmental protection in rural territories of Latin America that are dominated by the presence of powerful extraterritorial companies.

Comparing these three cases is also interesting in that the Bolivian and Chilean states differ greatly in their degree of "statehood"—their ability to effectively exercise authority over territory and enforce the laws they issue (see the discussion of "statehood" [estatalidad] in Latin America in Altman & Luna, 2012). Over the last decade they have also differed significantly in their political orientation. Thus Bolivia is typically characterized as a weak state which, since 2006 has been explicitly critical of neoliberalism, while Chile has had a stable and strong bureaucracy and has embraced market reform and private enterprise for several decades. While regulations for environmental protection are, of course, not promoted only by the state, they do typically require states with strong oversight capabilities. Comparative analysis of the three cases in different contexts of statehood shows that constraints in environmental protection institutions are relatively independent of the state's historical organizational and enforcement capabilities and ideological orientation. Rather, as we will see, environmental protection institutions depend much more on interests, on the coalitions in which they participate, and on the states' economic concerns.

## 3. ENVIRONMENTAL INSTITUTIONS

We define environmental institutions as a set of rules, policies, procedures, practices, and norms that govern ownership of, access to and use of a territory's environmental assets (see North, 1991). For this study, it is crucial to distinguish between institutions that regulate *access* to environmental assets (the opportunity to use something and rules governing ownership of lands, forests or water, and other forms of authorization to benefit from things) and the institutions that regulate the *management* of environmental assets (the capacity to determine the way in which something is used, which includes the rules governing decisions about the technology to be used and modes of oversight and administration). Both are *environmental institutions*, as they determine the rules governing the relationship between a territory's social actors and its environmental assets. [9]

The classic formulation by Ribot and Peluso (2003) differentiates between access and ownership. While the latter refers to a right, access can include many other forms of benefit from a good. The concept of "access" is more useful than the concept of "property," because it is better applied to cases of resources in which the state grants rights to private parties by means of "concessions." A concession has some attributes of "property," but not all; for example, it does not imply the possibility of bequeathing access rights to heirs, and is typically time constrained, even if sometimes renewable. We will take up the term access used by Ribot and Peluso (2003), because the cases analyzed here represent forms of authorization to benefit from the use of something (natural gas, fjord water, underground aquifers), which do not imply ownership of that thing. The Bolivian state is still the owner of the hydrocarbons and the Chilean state of the groundwater or coastal areas. Access without ownership is granted to corporations or individuals that meet certain requirements defined by the owner.

Nevertheless, we believe it is necessary to emphasize management as a third area of environmental regulation. In legal terms, the distinction between the right to use or manage a good and other rights related to ownership, such as alienation, transfer or bequest, or taking advantage of its benefits is well known (Honoré, 1961). In the case of environmental institutions, the distinction is crucial, because in nearly all systems for regulating natural resources, there are restrictions on "unlimited availability." These constraints are justified by the effects that the use of a natural resource has on other natural resources or on ecological relationships, of which that resource is a part. The benefits stemming from access to natural assets therefore can only be gained by respecting certain guidelines for use that do not jeopardize the rights of another individual or the integrity of other natural resources. The way in which environmental assets are used is therefore subject to additional rules that are different from the rules for access and ownership. We group these additional rules under the concept of management institutions.

With that distinction in mind, we can highlight four dimensions of change in environmental regulations. First, the three

cases analyzed show that institutional change in *access* to certain natural resources in territories is crucial. [10] The new regulations governing access typically resulted from an agreement between the state and powerful extraterritorial actors, replacing not only previous regulations for access, but also informal institutions governed by local actors (as in the case of small-scale fishermen in Chiloé and their access to and use of the coastal area). The new regulations for access always required a change in national legal frameworks (see Table 1).

Second, the rules for management of environmental assets, including technology, forms of administration, standards for evaluation of impacts, etc., in the three cases took the form of corporate self-regulation and some government monitoring regulations that were not or could not be implemented. [11] In Chile, these rules for free determination of forms of management are much more explicit and formal: it was assumed that private owners would have an interest in the rational and careful use of water, rather than its overuse, and that the private salmon corporations would safeguard the coastal area on which their business depends. Accordingly, it was assumed that the companies could therefore be regulated through internal codes of conduct and, basically, by the rule of their own economic interests. Alternatively, in the case of Bolivia, the state was seen as incapable of providing or unwilling to provide rigorous and systematic monitoring of corporations' environmental management.

Third, it is important to note that the initial institutions for access and environmental management were the result of agreements and a convergence of interests between large extraterritorial actors (private corporations) and the respective national government. These initial institutions were established without any participation of local actors, who often were not even informed of the new rules.

Finally, the initial systems of environmental regulation were originally conceived to achieve non-environmental goals, particularly economic growth. The institutions therefore regulate access to resources, but not environmental management *per se*, which is left to the "good will" or "self-regulation" of the direct beneficiary of that access.

As noted above, in only two of the three cases was there a second phase of institutional changes aimed at reducing environmental impact. In the following sections, we show that a readjustment of the initial environmental institutions is possible, but we also suggest that the probabilities are highly dependent on certain political, social, and environmental processes. We identify two main factors that explain such institutional readjustment: structural pressure leading to an environmental crisis and collective social action.

## 4. PATHWAYS OF CHANGE IN ENVIRONMENTAL INSTITUTIONS

Comparison of the three cases indicates that structural pressures leading to an environmental crisis and the collective action of social mobilization are two distinct, albeit related, dimensions of the pathways through which environmental regulations can change. The distinction is not perfect, of course. All collective action by social movements needs structural conditions to emerge, and all structures are reproduced by means of people's action. Both dimensions are embedded in social life and in processes of historical change. Our study suggests, however, that the distinction is helpful because it draws attention to the fact that in one of our cases (Tarija) dominant actors were forced to change environmental regulations because of pressure from other actors who mobilized, while in the other cases (Chiloé and O'Higgins), pressure for change came only from the effects of environmental crisis itself and even then the resource users did not respond by modifying environmental institutions, though the central state ultimately did.

### (a) *Environmental crisis and institutional change: Chiloe and O'Higgins*

A first dimension to pathways of change in environmental institutions detected in our cases stems from structural pressures that "force" institutional change, sometimes even against the will of the resource users themselves. When we say that structures function outside the will of actors, we do not mean that social structures are external to human beings. It is always specific (individual or collective) actors who reproduce, reinvent, and sometimes benefit from structures through their day-to-day actions. [12] What often occurs, however, is that the logic of their everyday action, especially their cumulative effect, goes beyond the intentions of the agents who realize them, including powerful ones.

This structural pressure was particularly apparent in Chiloe and O'Higgins. In Chiloé, the highly intensive salmon aquaculture model led to a sanitary crisis that resulted in a dramatic loss of productive capacity and a drastic decrease in exports during three years, with losses of billions of dollars for the local population, the industry, and the country. In the drylands of O'Higgins, aquifers were overused to such an extent that the environmental authority stopped granting permits for new wells. Without water for irrigation, the intensive production of export crops is impossible in that part of the country. In each of these cases, this structural pressure takes the form of a paradox: the actors involved, local or extraterritorial, end up destroying natural resources even though they do not want to and it is not in their interest to do so. In Tarija, in contrast, while there has been incremental impact on water and land-cover, there has been no shock and anyway an environmental crisis or large-scale destruction of surface ecosystems would not jeopardize gas production. Here we discuss the Chiloe and O'Higgins cases.

The aquaculture boom in Chiloé was enabled by an institutional model established in the ten years following the creation of the Fishing and Aquaculture Law (1991) and based on the principle of self-regulation. In this self-regulated model, multinational companies decide on their own to develop a series of

Table 1. *Initial institutional changes*

| Territory | Institutional change | Formal institution affected |
|---|---|---|
| Tarija | Privatization of gas deposits<br>Change in distribution of gas revenues | Hydrocarbons Law No. 3058 (1980, reform 2005) |
| Chiloé | Privatization of use of coastal area (1980 and 1990) | General Fishing and Aquaculture Law No 18.892 (1980, reform 1991) |
| O'Higgins | Privatization of groundwater | Executive Decree (*Decreto con Fuerza de Ley*) No 1.122 (1981) |

*Source:* Anthias (2012), Mendoza and Ramírez (2012), Nussbaum *et al.* (2012). Compiled by authors.

voluntary agreements and norms, which enable them to avoid norms and rules imposed by the governments of countries where they set up operations, which could affect their competitiveness (Escobar & Vredenburg, 2011). In response to pressure from international markets, the companies also established agreements on clean production and environmental best practices. The ISA crisis shook the foundations of this scheme, which at one point had sparked criticism—quickly brushed off—from organizations of small-scale fishermen, NGOs, and some academics (Ramírez *et al*., 2009).

The ISA crisis triggered a process in which voices that had been ignored years before were now heard and partly taken into account. In early 2008, a working group, originally intended to create incentives to double production by 2015, turned into a sort of "crisis committee" to salvage salmon aquaculture. The working group, whose members were appointed by the Ministry of Economy, formally consisted only of public officials. The executive secretary of the working group created a task force of professionals who were to conduct assessments and propose regulatory and legal measures to support the industry during the crisis, as well as develop guidelines for promoting increased production. The only academic invited to participate in the working group was a researcher well known for his work with algae, who, despite his lack of knowledge of salmon farming, was invited because he served as an environmental adviser to the Ministry of Economy at the time.

This group initially defined several contingency measures, but quickly realized the gravity of the situation and the possibility that companies might go bankrupt, increasing unemployment. In response, the decision was taken to support the industry more radically, on the grounds that regulatory changes were not enough, and that the 1991 law also needed to be changed. The private banking sector said that to continue lending to the industry, it would no longer accept the fish themselves as sufficient guarantee, and that less risky assets were needed. The proposed legislation therefore focused on allowing the aquaculture concessions themselves (which had been granted to companies by the state) to serve as loan guarantees, as well as on facilitating the transfer of concessions so that they could be physically grouped together in order to better organize sanitation management.

The draft legislation was submitted to Parliament in January 2009, and the ensuing public debate expanded its focus somewhat. The debate continued for fifteen months and the law was finally approved in April 2010. The debate organized by the Senate was attended by local and national organizations of fishermen, environmental NGOs, associations of producers of other marine resources, representatives of salmon and service industries, and others groups. In that debate, which introduced about 200 amendments, NGOs introduced modifications related to safeguards for protected areas, cancellation of permits because of inadequate environmental conditions, and penalties for fish escapes. Workers' organizations, meanwhile, tried to introduce the cancellation of concessions for anti-labor practices, but only managed, with support from the Ministry of Labor, to win the inclusion of sanctions for those practices and a temporary article to strengthen training and labor development for workers in the aquaculture industry.

Despite these modifications, the overall emphasis of the reform of the Fishing and Aquaculture Law of 1991 continued to be on providing economic incentives, loan assistance, and facilities for the commercial negotiation of concessions. Only secondarily did the reform address environmental and sanitation issues. The main environmental provisions introduced were penalties for fish escapes, limitations on fish density, severe penalties for non-compliance with environmental parameters for aquaculture in lakes, and the suspension of new permits for aquaculture in lakes. Above all, the measures strengthened SERNAPESCA, increasing its budget allocations for 2010 and 2011. Although a significant step forward, that was not enough to offset problems in the regulatory agency caused by a long-standing lack of funding and staff (see footnote 13).

The experience in Chiloé is revealing. Pressure from the sanitation crisis led to an institutional change that while mainly designed to solve the companies' financial problems also had to do something to avoid similar crises in the future. A political opportunity was therefore created for actors other than those from the dominant coalition to introduce their views and demands. The result was new legislation that reinforced certain environmental management regulations, even if the new rules remained inadequate in the view of many of the actors who had promoted them.

Interpreting this experience through the lens of ecological Marxism (see O'Connor, 2001), the paradox noted earlier occurs because of the cumulative consequences of a structural contradiction between the economic-technological model of production and the ecosystems that sustain it. In other words, the internal logic of capitalism is incompatible with the ecosystems that sustain human life. While models of "rational action" (Hardin, 1968; Ostrom, 1990) help understand why resource users in Chiloe (the salmon companies) were unable to act collectively to address problems of fish and water health, they pay much less attention to the "structures" (Bourdieu, 2005) that condition, constrain or, in some cases, even determine actors' preferences as they interact with each other and the environment. Theories of ecological Marxism account for these structures.

An ecological-Marxist conception also helps understand the self-destructive tendencies of extraterritorial corporations in the case of water over-use in O'Higgins. In the controversy over water scarcity, the General Water Office (Dirección General de Aguas) maintained that there was no real physical scarcity of groundwater, just an excessive granting of concessions, which the beneficiaries had not been able to use effectively. As of 2000, the DGA was so unconcerned that it had no studies of aquifer availability and granted all requests for rights to water. It was not until 2003, when demand for water rights became problematic, that studies were conducted to measure actual groundwater availability. After that, a final quantity of rights to be distributed was defined, and concessions for new water sources in the territory were closed. Chilean government agencies responsible for resource management expect that the closing of water concessions will increase their price, encouraging more investment in technology and more careful use of water (Mendoza & Ramírez, 2012, pp. 103–110).

This reflects the conviction that awareness of the problems of resource exhaustion is real. It also indicates that changes seem to occur *after* an environmental crisis and that, as in Chiloe, this response was ultimately led by the state, not the resource users themselves. Furthermore, as in Chiloé, corporate actors only act (or acquiesce to new institutions of environmental regulation) once the crisis has affected their own businesses. When the impacts do not directly affect the extraterritorial corporation's production conditions, those who are affected are left to take care of these impacts themselves, at best receiving "compensation". When the crisis occurs, the dominant coalition does everything possible to solve the problems that are specific to its own economic needs, but does not necessarily question the management of the territory or ecosystem.

(b) *Collective action and change in environmental institutional: Tarija*

A second pathway through which institutions that regulate the access to and the use of a territory's environmental assets change, involves collective action, i.e., the initiative of either the dominant coalition or other social groups that pressure that coalition from outside. Unlike the first path, in which actors *are forced* to act because of the effects of a crisis on the continuity of the economic dynamic, here the actors decide to act before or even in the absence of such a crisis. How and why does this occur? What conditions lead to such a proactive intervention?

In the case of the Assembly of the Guaraní People of Itika Guasu (*Asamblea del Pueblo Guaraní Itika Guasu*, APGIG), based in Entre Ríos (Tarija), we have an important example of collective action in the absence of an environmental crisis. Anthias (2012, p. 71) notes that around 2003 the APGIG began to complain to the state and to Repsol about the social and environmental impacts of natural gas extraction "in the context of a broader campaign for the recognition of their rights by the company [... and] it denounced the lack of prior consultation and demanded recognition of its ownership rights to the Community Land of Origin (*Tierra Comunitaria de Origen*, TCO) and easement payments for the land occupied by the company [...]. Amid this conflict, which lasted approximately eight years (2003–10) [...], the APGIG began to take steps to measure and monitor the environmental impact of hydrocarbons, with support from the NGOs CERDET and CEADESC. In 2003, a monitoring team was formed to inspect the wells and camps [...]. In December 2010, the APGIG and Repsol signed a "Friendship Agreement" ("*Acuerdo de Amistad*" or formally the Community Relations Agreement or *Acuerdo de Relacionamiento Comunitario*) which included payment of US $ 14.8 million to the APGIG for an investment fund. Other key points are the establishment of an environmental audit [...] and formal recognition by Repsol of the rights of the Guaraní, including consultation and their ownership rights to the TCO" (see also Humphreys Bebbington, 2013).

The indigenous organization, with the aid of local and international NGOs, was able to force the creation of new environmental regulatory institutions: an independent audit every five years, a local development fund, and a system for ongoing monitoring of the company's activities. It is important to clarify that the Bolivian government and several regional actors in Tarija questioned the Friendship Agreement, because it implied recognition of the Guaraní organizations' territorial authority and, in their opinion, implicitly questioned the Bolivian state's authority to assume the task of representing and protecting its citizens. In practice, however, none of them have formally rejected its existence (Anthias, 2012, pp. 70–80). The Bolivian state has not, however, recognized other of the Guaranís' demands and the relationship between APGIG and the government continues to be conflictive, with APGIG's perception being that the state does not represent the organization's interests, but is mainly driven by the demands of an economy based on gas extraction (Anthias, 2012, pp. 76–77). Indeed, as in the case of Chiloé after the crisis, the new institutions created in Itika Guasu did not question the rules governing access to environmental assets by extraterritorial corporations. On the contrary, they ratified them by granting them a certain social legitimacy that complements the corporations' legal rights. Nevertheless, they do imply a change in the rules for managing those assets by questioning both the virtual self-regulation of the gas company and the (theoretical) monopoly on regulation by the central state of Bolivia.

There continues to be controversy over the possible effects of the monitoring system anticipated in the Friendship Agreement. Some believe it is a simple way of co-opting the APGIG, which would abandon its critical stance in exchange for monetary compensation. Others question the legitimacy of extra-official monitoring, while still others say that a more precise assessment of its effects will only be possible after these institutions have been in place for a longer time (Castro & Cortez, 2011; Cortez, 2011). These almost irreconcilable viewpoints notwithstanding, the new institutions that emerged from the Guaraní peoples' collective action give reason to think that it may at least be possible to combine the environmental priorities of extraterritorial actors with those of at least one of the relevant local actors. Sustainability is not guaranteed, but there are more propitious social-political conditions for achieving it.

Repsol's operation in Tarija is conditioned not only by the collective action of the Guaraní, but also by another form of mobilization, this time located in Europe. Interviewee accounts noted that the company has its own environmental management standards over and above those required by the Bolivian state. Why? The following quotes illustrate the reasoning of the contractors and company officials:

> Repsol is in twenty countries. All it needs is one accident, one accident with the operator. So more than anything, it is the company itself that said no, "We have our standards here, we have to comply with the law, because often the government may be corrupt or it may not care, but the company has to keep operating."
>
> [Cited in Anthias, 2012, p. 63]

> That's how policies of respect for culture and biodiversity begin, policies for relations with indigenous communities. Just thinking about shareholders isn't sustainable. There will come a time when other interest groups, who are also your stakeholders, will throw you out. So the approach changed. We're talking about the past 10 years, when these internal rules began to evolve. Environmental issues arose first, and now social issues.
>
> [Cited in Castro & Cortez, 2011, p. 20]

Repsol's environmental management rules were therefore implemented because of the social and political pressure of NGOs and public opinion in Europe, and the collective efforts of different actors on local and international actors. There has been no such international pressure on the salmon companies in Chiloé nor among the consumers of farm products from O'Higgins. Moreover, organizations of artisanal fishermen in Chiloé and of small-scale producers in O'Higgins had none of the experience of struggle for territory nor of international support networks that the Guaraní people had. The greater prior organizational weakness and greater political isolation of local Chilean organizations conspired against possibilities for collective action once the extraterritorial companies were established in their territories.

Theories of social movements and collective action help account for both the presence *and* absence of collective social action in the three cases. First, since the 1980s, the socio-political context in Bolivia had been more open to and conducive of social mobilization than had been the case in Chile, creating a political opportunity structure facilitating the emergence of collective action over a longer period. In addition, the international "opportunity structure" regarding environmental problems related to hydrocarbon activities and the rights of indigenous peoples facilitated effective Guarani mobilization. While the opportunity structure dimension worked in Tarija's favor, it was much more adverse in the cases of Chiloé and O'Higgins, where there is no international movement for monitoring agribusinesses or salmon-farming companies. Second, "mobilizing structures" – the formal organizations, networks,

forms of leadership, and places in which broader ties of group solidarity can be created (McAdam, 1982; Tarrow, 1983; Tilly, 1978) – were more supportive in Tarija. Chiloé's small-scale fishermen and O'Higgins's small, independent farmers had none of the external and international connections enjoyed by the Guaraní. Third, "frames" of indigeneity and territory in Tarija served as far more powerful mobilizing devices than any sets of meanings or concepts through which actors in Chile could understand, give meaning to and mobilize around their situation (Dubet, 1989; Moore, 1978; Smelser, 1963; Touraine, 1978).

Possibilities of collective mobilization around environmental institutions were also affected by differences in structures of production across the three cases. With the existence of an economic cluster structure in Chiloé, in which more than 500 local service companies are linked to the fifteen salmon farming companies, and thousands of workers depend directly or indirectly on the industry, the range of actors who consider themselves beneficiaries of the activities that drive the territorial dynamic tends to expand. In the case of O'Higgins, a significant number of local fruit and vegetable farmers and day laborers, as well as groups of women and young people who are employed in modern agribusinesses, became beneficiaries (smaller scale, but beneficiaries nonetheless) of an economic dynamic that depended on overusing groundwater in the territory. In Tarija, although the dominant economic activity creates an enclave structure, the distribution of royalties to the local government also tends to allow the pool of potential beneficiaries to increase through expansion of public employment and infrastructure. It is not surprising, therefore, that the main opponents of gas extraction are precisely those actors who potentially receive its worst negative effects and who are far from the areas that receive these fiscal benefits. In their territory, the Guaraní peoples receive the largest part of the potential impacts, and because of their distance from towns, have far more limited access to public sector employment or the positive effects of public works and public services financed by gas rents.

Nevertheless, the idea of a simple transaction between distribution and environmental protection must be nuanced. It is important to remember that environmental conflicts do not occur in isolation. Although the Guaraní people's acceptance of compensation might be interpreted as a transaction in which complaints about environmental impacts are traded in return for money, it can also be seen as the outcome of mobilization for demands that had both environmental and distributive dimensions but which were made under conditions of asymmetries of power. Indeed, an apparent trade-off may, in fact, be no more than the unintentional result of a negotiation conducted in contexts that were socially and politically disadvantageous for the Guarani. Environmental demands should not be understood simply as an excuse or a facade for economic grievances, just because they are sometimes indistinguishable from one another.

Above all, it is important to remember that for the Guaraní, the presence of the gas company constitutes a threat to recognition of the territorial *rights* for which they had been fighting for years before Repsol began its operations (Anthias & Radcliffe, 2013; Humphreys Bebbington, 2010, 2013). We can therefore conclude that collective action is much more likely when local actors feel or see a threat to their rights to access environmental assets of which they consider themselves owners, beneficiaries or caretakers. When that does not occur, the conflicts are less intense. In Chiloé, when the salmon companies arrived, small-scale fisherfolk suffered inconveniences and restrictions, but they managed to avoid major obstacles to exercising their right to coastal fishing. Although they had grievances, these did not lead to prolonged conflict. Indeed, during the institutional adjustment of the salmon industry after the ISA crisis, small-scale fisherfolk managed to secure greater protection for their traditional fishing grounds.

At first glance, it could be assumed that local actors are more concerned about the environment because their subsistence and livelihoods depend on more components of the territory's environmental assets than do those of extraterritorial actors, which normally take advantage of more delimited and specific resources. The cases analyzed do not confirm that assumption. In Chiloé, O'Higgins and Tarija, the relevant local actors do not show greater environmental concern than the extraterritorial stakeholders. Nevertheless, the Guaraní case suggests that when new institutions question or threaten the rules for local actors' *access* to environmental assets, then conflicts and collective action may arise more easily. If, in addition, the group's cultural and historical identity is associated with the territory and its ecosystems, its consideration of environmental issues is likely to include more components of the environmental assets than those whose relationship with the territory is purely one of economic use. These two conditions, which we group in the "framing processes" of collective action, help explain higher levels of collective action undertaken by indigenous groups in various conflicts in Latin America in order to improve environmental regulation of extraterritorial corporations.

## 5. INSTITUTIONAL CHANGE AND TYPES OF INSTITUTIONS

Based on the three cases, we can also indicate which institutional changes occur with regard to what type of institutions and why, ultimately, it is so difficult to bring about changes in environmental institutions. We have already noted that extraterritorial actors seek changes in the rules for *management* of environmental assets that generally do not question or constrain the rules for *access* to those resources. Solutions to the crisis sometimes even consist of deepening the very rules for access that, because of market rights, facilitated the extraterritorial corporations' entry into the business in the territory.

Some elements of institutional change in Chiloé could be considered "paradigmatic," because they partly question self-regulation by corporations and improve conditions for state oversight of the sector (increase in budget and areas of responsibility of the state agency responsible for sanitary controls, etc.). Some actors, however, especially academics and environmentalists, although they do not dismiss the progress that has been made, see this basically as an "adjustment" to the regulatory system, because it does not consider all regulations that would be necessary to protect all coastal ecosystems. Moreover, the process of discussion and creation of new regulations shows that environmental management *per se* is not the main concern of either the industry or the government. The priority is the need to ensure the financial viability of the industry in crisis, through systems of guarantees and the transfer of rights among private entities to solve the problem of bank debt. Even so, the different coalitions that were formed in the process of parliamentary discussion demonstrate that, after the environmental crisis, *space was created* in which other actors with various alliances could push for institutional changes that were broader in scope and ambition. [13] With the environmental crisis, the position of the extraterritorial companies lost credibility, and the position of those who had criticized existing regulations in the past gained ground; as a result, new actors

found room for their actions and views to be considered (Nussbaum *et al.*, 2012).

Cases in which there was no change before an environmental crisis, as in O'Higgins, also seem to indicate that if this institutional change occurs, it is likely to focus on technological modifications that do not affect the rules of access to key resources, or which even reinforce the market mechanisms that gave rise to the over-exploitation of the aquifers. This was indicated by a top government official:

> "Since this water scarcity, now there will be people who are going to have the right and others who are going to have to acquire it somehow, no longer through a request for a permit, but through some transaction, perhaps even by friendship, someone may be able to offer part of their rights, it's going to be informal. But it's logical that this will be traded in the market, period."
>
> [Cited in Mendoza & Ramírez, 2012, p. 115]

Finally, the case of Tarija confirms that even when there is a group of actors who, like the Guaraní, are outside of the dominant coalition, the existing power asymmetry also tends to result in what Mahoney and Thelen (2010) call "institutional changes by layering" – in this case the superimposition of rules for local monitoring of hydrocarbon extraction on top of rules allowing for state oversight. In practice, under the conditions of asymmetrical power relations studied here, the rules of access to the territory's environmental assets are much more difficult to change, in that they constitute the source of security and confidence that enables extraterritorial actors to make and expand their investments.

## 6. CONCLUSIONS

In this paper we have analyzed three cases of rural territories in which powerful extraterritorial actors invested in extractive enterprises (*sensu* Gudynas, 2012, 2013) based on different types of natural resources. The new territorial economic dynamics triggered by these investments became possible once new institutions were created that gave extra-territorial actors secure access to key natural resources. These institutions were not, however, designed to regulate management of those resources, a role that was instead left to self-regulation by the actor that benefited from that access. In general, the new institutional arrangements were the result of agreements between actors within the dominant coalitions, namely powerful extraterritorial actors (private corporations) and the respective central state. Local actors played a minor role.

We identified two distinct dimensions to the pathways through which change in environmental institutions can occur subsequent to this initial conferral of access rights. In none of our three cases did extraterritorial companies or the state address environmental issues proactively. Instead, they addressed them only in response to ecological crises and/or collective social action. Achieving collective action before crises occur is difficult, because it requires a rare and difficult combination of factors: local groups must (i) be situated in a context of favorable opportunities, (ii) have organizational structures powerful enough to influence extraterritorial corporations, and (iii) perceive more risks than benefits in the territorial dynamic guided by those corporations.

In the three cases analyzed, a first pathway for changing the environmental institutions occurs when the actors in the dominant coalition are forced to change their behavior because of environmental crisis. When the rules for access to and use of the territory's environmental assets are conducive to the exhaustion of a natural resource that is crucial for the reproduction of the economic dynamic itself, the actors—even those with the power to avoid the crisis—tend to erode the natural basis of their own activity. It is not in their medium- or long-term interest to do so, and they often are fully aware of the problem, but they still hew to a course of action that ends up causing an environmental crisis or collapse. It is the structure of economic incentives and motivations that leads to such crisis. Dominant extraterritorial actors are unwilling to change the rules that allowed the dynamic to begin, since doing so would imply substantial modifications both to their ability to profit from the use of natural resources as well as to the balance of power in the territory. The central state would lose sources of national economic growth and of tax revenue; corporations would see pressure on profit margins.

A second pathway of change in environmental institutions has been through collective social action within or outside of the dominant coalition. This action forces consideration of broader social interests or of different dimensions of the territory's environmental assets. For collective action to affect the underlying structure of environmental institutions in the territory, it must have a decisive influence on actors in the dominant coalition, whether private corporations or the state. The actors that decide to act must have extraterritorial social allies and sufficient political or symbolic resources, including coherent and credible discourses, to modify the behavior of the dominant coalition. In general, these actors (perceive that they) enjoy fewer economic and political benefits from the territorial dynamics linked to extractivism and (perceive that they) are subject to greater harm.

In none of the cases studied did the change in environmental institutions require that any actors in the dominant coalition be excluded from it nor that new actors become part of that coalition. The institutional change occurred when one or both actors in the coalition that gave rise to the initial territorial dynamic, either the central state or extraterritorial corporations, ceded ground as a result of structural pressure or pressure from actors outside the dominant coalition. The process of institutional change undoubtedly allows other actors to influence political decision making, although this does not mean that they modify the composition of the dominant coalitions in the territory.

The three cases under analysis confirm that collective action is generally difficult to achieve and turns out to be strongly dependent on the extent to which actors, including the state, benefit from the economic outcomes of territorial dynamics—that is, from the way in which the dominant activity modifies and reconfigures the local productive structure. This implies that when territorial actors are included in the benefits of territorial economic growth (whether through employment, subcontracting, fiscal transfers or corporate responsibility), they are less likely to act collectively to demand greater environmental regulation. In our case studies, men and women tend to minimize or dismiss environmental impacts in favor of redistributive policies. In contrast, when they feel excluded, and especially when their access to the territory's environmental assets is under threat, their environmental concerns are more likely to result in mobilization to demand a response. This implies that, at least in these cases, economic growth can create greater inequality or greater environmental risk, but will not spark environment-related collective action as long as it generates a certain degree of access to economic opportunities.

In these cases, the central state institutions that regulate the activities of extraterritorial actors also act as close allies of those same actors and together with them form part of a dominant coalition endorsing extractivism as a development path. This coalition is not, however, immutable. First, the state itself

is an intrinsically heterogeneous actor. Second, there is evidence in other rural territories (Cerdan & Policarpo, 2012) that the state *can* act differently, instead encouraging collective action by local groups supported by environmental organizations. In this scenario, state action could be decisive for balancing power in territories instead of tipping it further toward powerful extraterritorial actors. Nevertheless, the difficulty of achieving such behavior on the part of the state represents an additional obstacle to the emergence of new and more robust institutions for environmental regulation under conditions in which powerful external actors configure the economic dynamics of a rural territory.

## NOTES

1. Extraterritorial actors are groups, corporations, or other types of organizations that are not controlled by actors in the territories where they operate, and which do not have identities based in those places.

2. The natural resources boom in Latin America has led to a growing literature about extractivism and neo-extractivism (cfr. Bebbington, 2009; Escobar, 2010; Gudynas, 2012, 2013).

3. It is important to note that whenever we refer to "collective action," we do so in the sense of schools of thought on and analysis of social movements, not in the sense used by Ostrom (1990).

4. See Ramírez & Ruben, 2015; Hinojosa-Valencia *et al.*, 2015.

5. The Territorial Dynamics Program's publications can be found at: www.rimisp.org.

6. Conversely, where the barriers to entry implied in the exploitation of the local resource are not as high as in the cases mentioned, extraterritorial actors *coexist and compete* with local stakeholders over control of the main drivers of local economic development. Among the territories studied in the RTD program, this is the situation that characterizes, for instance, potato farming in Jauja (Peru), dairy production in Susa and Simijaca (Colombia) and Santo Tomás (Nicaragua: see Ravnborg & Gómez, 2015), and the creation of a tourism industry in Santa Catarina (Brazil).

7. According to Gudynas (2014, p. 80), "extractivism is defined as a particular case of natural resource extraction, characterized by extracting resources in large volumes or through the use of high-intensity procedures, with the resources being subsequently export oriented [...] as raw materials or with minimal processing [...]. Extractivist activities therefore include some mining and petroleum operations, but also intensive monocropping agriculture (such as soy or some biofuel crops), shrimp farming, etc."

8. Agricultural activities such as large-scale monocropping of soy or corn tend to function as enclaves, while systems of mining royalties for municipalities tend to moderate the "enclave" effect of these activities.

9. The significant existing bibliography on environmental governance is relatively recent (Lemos & Agrawal, 2006) and has taken a basically normative approach (De Castro, 2013). Nevertheless, studies that combine this approach with political ecology and its emphasis on power asymmetries are important, as we will see, for the approach taken in this work (cfr. Bebbington, 2012).

10. The central role that institutions play in access is also confirmed by analysis of the 20 case studies: all of the economic activities analyzed have a strong material-natural basis and are related to the means of access to, rather than the management of, the resources.

11. In none of the cases does the state have the resources or the interest to gather its own environmental information, much less to effectively control the technologies that are used or the type of intervention in the territory. In short, institutions for management of environmental assets consist, in practice, of a great deal of freedom to adapt to each situation, which is left in the hands of the extraterritorial actors themselves. Details about the environmental institutions that gave rise to the territorial economic dynamics in Tarija, O'Higgins and Chiloé are found in Hinojosa, Chumacero, Cortez, and Bebbington (2011), Modrego *et al.* (2011) and Ramírez *et al.* (2009).

12. For Giddens (1984), this everyday repetition comes through a "practical consciousness" that makes agents competent, and which is different from "discursive consciousness." For Bourdieu (1991), agents act because of dispositions or matrices of perceptions of reality that have been inculcated in them as a "given" that is rarely explicit.

13. Although the process of drafting the emergency legislation was coordinated by the Ministry of Economy with limited participation by actors other than the salmon industry, academics, trade unions and organizations of small-scale fishermen were heard during the parliamentary debate, so that some adjustments to the law were introduced, in a limited way (cfr. details in Nussbaum *et al.*, 2012, p. 126).

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