Part II
New Politics of Natural Resources

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The Government of Nature: Post-Neoliberal Environmental Governance in Bolivia and Ecuador

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Introduction

In 2005 and 2006, anti-neoliberal coalitions won the elections in Bolivia and Ecuador, respectively. In both countries, this development put an end to the rules that had regulated the use of natural resources in hydrocarbon extraction during the latter part of the twentieth century (Hogenboom, 2014). The post-neoliberal governments constructed new institutions for the governance of extractive-industry activities. The new rules of the game have changed the way in which the Andean countries govern extractive industries. It has not put an end to their dependence on income generated from natural resources, but it has changed the way in which that income is distributed.

The process of change from neoliberalism to post-neoliberalism was fast, and fraught with confusion and abandoned experiments. This chapter describes that process. Two analytical objectives guide this description. First, I will identify the factors that guided the changes from neoliberalism to post-neoliberalism; and second, I will analyse the possibilities for the governance of mineral and hydrocarbon wealth and the creation of a "government of nature" that were opened up by the new regulatory framework.

Natural resources, rentier states, development and post-neoliberalism

The contemporary debate about development based on natural resources has existed since the 1990s. Numerous academic studies conducted in that decade called attention to the relationship between

income from natural resources and development, highlighting the negative impact of the former on the latter. In this century, however, the findings of those pioneering studies have been disputed by a growing body of literature primarily focused on political economy (Sachs and Warner, 1995; Karl, 2007; Whatchenkon, 1999; Auty and Gebb, 2001; Ross, 2001; Robinson, Tovik and Verdier, 2006; Acemoglu and Robinson, 2012).

The thesis of the "natural resources curse" questioned the policies advanced by international financial institutions and transnational companies. These stakeholders argued that the developing countries in the process of development could exploit their comparative advantages in the field of natural resources to accelerate their development (Bebbington et al., 2008). The neoliberal governments of the 1990s adopted this thesis. Critical studies developed in recent decades have examined the economic and social effects of those policies, stressing the effects of the rents from natural resources on the political and economic development of countries with an abundance of these resources.

The consequent debate failed to resolve the issue in the field of resource economics (Iimi, 2007; Collier, 2010), but not in the field of political institutions. In fact, political scientists and political economists who specialize in development have shown that an economy based on the extraction of natural resources actually has a negative impact on the development of political institutions that manage the appropriation and use of state income for these extractive activities (Bebbington et al., 2008; Collier, 2010). This adverse effect is mediated by a specifically political variable: the adoption of a rentier model of natural resource governance by the governmental decision-makers. The policy of the International Financial Institutions (IFIs) and transnational companies would instigate the governments of the developing countries to adopt some type of regulatory institution that would – in the medium and short term – guide the evolution towards a rentier state and very probably towards the creation of the conditions that produce an effect known as the "natural resource curse" (Bebbington et al., 2008).

Some Latin American scholars have criticized the idea of development based on natural resources in the thesis known as the "extractivist model": to the negative impacts of income from natural resources would have to be added two specifically Latin American effects. On the one hand, resource-based growth would have impeded the Latin American countries from earning great international autonomy. On the other hand, extractivist revenues would have induced the formation of a state that, in addition to being rentier, was also predatory by nature. This

effect would be especially serious since that predation occurs in areas inhabited by indigenous peoples, thereby affecting particularly fragile ecosystems. Both effects thus imply a predatory and dependent capitalist social trajectory (Acosta, 2003; Acosta and Schuldt, 2009; Gudynas, 2012, 2009).

In recent years, various scholars have criticized the negative consensus on resource-based development. The criticisms have been focused on two major areas. First, the simple relationship between the abundance of natural resources and poor development does not hold. The evidence of countries rich in natural resources shows that – under certain conditions – they could achieve high income levels, relative equality, and a great degree of economic diversification, and that they are democracies. More importantly, these achievements have occurred among developed countries (Canada, the USA, the UK, Australia, Norway) as well as emerging countries (Brazil, Chile, South Africa, Indonesia) and developing countries (Botswana is typically the most cited example, but increasingly Bolivia and Ecuador are mentioned as well) (Dunning, 2008; Gylfason, 2012; Hujo, 2012; Thorp et al., 2012).

The second area of criticism has to do with the double directionality of the effects of rents from natural resources. A boom of natural resources can have a favourable effect on authoritarianism or on democracy; it can augment the interest of predatory elites who are in control of the state to preserve their control over the distribution of income (Acemoglu and Robinson, 2010); and it can simultaneously mitigate the redistribution of private income, thus increasing the appeal of democracy (Dunning, 2008). Similarly, it is possible that a natural resource boom would elevate the costs of economic diversification, but an active state could pay those costs from the tax revenue that it obtains from natural resource income (Bebbington, 2012; Thorp, 2012). By investing those fiscal resources in institutions that promote coordination between emerging economic sectors and the accumulation of human capital, the state would favour economic diversification (Dietsche, 2012; Ascher, 2012; Guajardo, 2012; Orihuela and Thorp, 2012).

This controversy can be resolved by distinguishing the rentier states from other types of state (Dunning, 2008). The key variable is not the abundance of resources but rather the abundance of rents that produces effects on the states. The exploitation of mineral resources, oil and gas generates revenues for the states and, given certain conditions, can transform them into rentier states. Why does this happen?

Rentier states support themselves on a set of regulations that govern the extractive industries. These rules determine the conditions of

access to natural resources: how and how much of the profits obtained by extractive industries will be appropriated by the states; and who intervenes in the key decisions to authorize extractive activities and in the decisions corresponding to the distribution of income. This set of rules constitutes the core of natural resource governance.

Recent discussions have stressed the point that the distribution of income is the primary source of conflict and debate in rentier states. In particular, the literature asserts that such income may be used by governments in two ways. It can lead to a concentration of economic and political power in the hands of the elite. On the other hand, governments can also choose to use the revenues to reduce dependence on natural resources, diversify the economy, and provide benefit to the majority of its citizens. Bebbington (2012) has indicated that, in the study of development in the Andes, special consideration should be given to conflicts surrounding the extractive industries since they "have great significance for national and subnational political economic change". On the other hand, Gylfasson (2010) has argued that the investment of mineral incomes in social development is an integral strategy of economic growth. In particular, he states that "the level and composition of government expenditure should make a difference for growth".

Taking advantage of studies advanced by ecological economics and political ecology, social movements, environmental organizations, and intellectuals from Latin America as well as from outside the region have looked at the extraction of natural resources as something more than just development. The common element in these diverse perspectives is that they value the sustainability of ecosystems and society in a way that is entirely different from the utilitarianism inherent in mainstream economic thought (Nelson, 1995).

A second common element is the double criticism of neoliberal capitalism and the idea of development itself (e.g. Acosta, 2003; Gudynas, 2009; Alimonda, 2011; Escobar, 2011). The main thesis of this criticism is that the expansion of capitalism constantly requires new sources of natural resources, whose exploitation exclusively benefits industrialized countries, and in the short and medium term it generates an "illusion of development" in Latin American countries. This illusion is characterized by cycles of rapid economic growth, with partial and fragmented modernization of societies. These cycles are illusory to the extent that they have historically proved to be unsustainable over time. The cyclical behaviour produces great costs for societies, particularly the destruction of highly diverse ecosystems and the destruction of human populations whose way of life has been radically altered by the presence of extractive

activities. These costs tend to crystallize in the political organization of Latin American societies, which aims to preserve and enhance social inequality and to keep the rural poor and indigenous populations out of political decisions.

The Latin American literature is very closely related to the arguments advanced by European and Anglo-Saxon ecological economists and ecological sociologists. The first have shown that the economic growth experienced by Latin American countries during natural resource booms has only been achieved on the basis of an unequal exchange of material flow (Vallejo, 2009; Martínez-Alier et al., 2010; Muradian et al., 2012). Similarly, Muradian et al. (2012) have noted that recent technological innovations in the extractive industries have made the exploitation of mineral and hydrocarbon deposits – located in remote areas inhabited by indigenous peoples (the Ecuadorian and Bolivian Amazon, for example) – economically profitable. The expansion of the "extractive frontier" implies the accelerated destruction of ecosystems that are essential for planetary survival, along with an increase in socioenvironmental conflicts that put the cohesion of Latin American, and especially Andean, societies at risk.

Environmentalist literature has made visible two innate elements of the rentier basis of the Bolivian and Ecuadorian states. First, the construction of rentier states represents a set of enormous environmental and social costs that are not only ignored by the literature of political economy and development economics but are also actively kept out of public discussion by academics, international financial institutions and the governments that have controlled these states. Second, the set of rules that govern the extractive industries in the rentier states is insufficient to achieve the objective of an environmental governance that ensures the sustainability of societies.

The set of debates that I have outlined allows me to present the central argument of this chapter in order to display and analyse in the next section the evidence offered by Bolivia and Ecuador on what I have called "post-neoliberal environmental governance". Analytically, post-neoliberal environmental governance in Bolivia and Ecuador – and possibly in other Latin American rentier states – can be understood as a system of three layers. In the centre would be the rules of natural resources governance. These are the rules that govern the extraction of resources and the production of revenues for the states. At this level the number of actors is minimal since it only includes governmental elites, certain state agencies and the companies (public and/or private) that conduct mining activities.

A second layer would consist of the rules that govern the distribution of income, particularly that which is intended to be some type of compensation for populations especially affected by extractive activities. It also includes rules that establish monitoring capabilities for the environmental damage caused by extractive activities and the organizational responsibility for such damage. This layer includes high-level policymakers and specialized state agencies – just as in the previous level – but also other stakeholders such as organized citizen groups and professional experts who act as consultants for the assessment, monitoring and determination of environmental damage (van Dijck, 2014).

Finally, the third layer would contain the general way in which the relationships between the state, society and nature (or environment) are regulated. Besides being the least formalized of all the layers, it is also that which supports the greatest number of actors, and is especially open to the participation of citizens who, for whatever reason, have some interest in the decisions to be adopted about nature and the use of resources in their society. Therefore this is the level where organizations of environmental activists, specialized citizen groups (e.g. academic communities) and other groups are active.

Bolivia and Ecuador: From the reconfiguration of rent-seeking to environmental governance

In order to function, the Bolivian and Ecuadorian states depend on the flow of rents to their treasuries. Both states capture this income directly from the activity of extractive industries of minerals and hydrocarbons, and these rents substitute other sources that are more politically expensive to obtain (e.g. taxes). Thanks to these rents, the states can carry out distributive policies that are less expensive than their alternatives (e.g. urban or rural property reforms). These characteristics interact to produce an overall effect of acceptance of the government in power and more generally of the state.

Beginning in the years from 2000 to 2002, approximately, Bolivia and Ecuador have regained significant economic growth rates; and this growth has been accompanied by significant reductions in poverty and inequality.[1] These trends are due to three main factors. First is the increase in world-market prices of the oil, gas and minerals exported by both countries.[2] Second, the Andean states have recovered their ability to capture the rents produced by the exploitation of natural resources. Third, the governments have invested in improving the state capacity to manage the rents, orienting them towards the broad distribution of the

benefits of economic growth, and – to a lesser extent – trying to induce a change in the relationships between the rentier sector and the production of their economies. These trends are interdependent and mutually reinforcing.[3] The Bolivian and Ecuadorian states have improved their distributive capacities and therefore have contributed to improving the quality of life of their populations – especially the poorest – because they have the fiscal resources captured from extractive industry activities (Paredes, 2012). At the same time, the increased capacity of the Bolivian and Ecuadorian states to capture rents from natural resources has improved their tax bases.

The current situation in Bolivia and Ecuador contrasts sharply with that which dominated in the last decades of the twentieth century.[4] During that time, both states significantly reduced their capacities to provide social services to the poor populations, such as health, education and money transfers. Low international prices of natural resources and the inability of the governments to increase state revenues prevented states from implementing distributive policies. Therefore, in the 1980s and 1990s, Bolivia and Ecuador experienced a continued deterioration of the living conditions of the population, increased poverty – particularly in rural areas – and growing inequality (Lefeber, 2003).

The current natural resources boom is not, however, the cause of the formation of Bolivia and Ecuador as rentier states but rather only of its reactivation and reconfiguration. The Revolution of 1952, in Bolivia, and the oil boom of the 1970s – for both countries – were key events that shaped the current rentier states, as will be discussed below.

Bolivia

During the boom period of tin (1910–1954) and before the nationalization of the mines in 1952, "the State's attempts to capture more rent . . . implied a substantial redistributive dynamic . . . any capture of rent by the State for purposes of greater public spending would tend to redistribute income from the tin oligarchy to . . . the rest of the population" (Dunning, 2008: 235). In simplified terms, the pressure of the social groups excluded from mining revenues – particularly tin workers and reformist intellectual groups – generated attempts by the governments to capture mining revenues, which were answered by the mining oligarchy with coups d'état and repression. The state wanted to be rentier, but the property ownership and the economic and political power of the mining elite would not allow it. The Bolivian administrations during those years had a single resource to expand its fiscal base: to increase taxes on the non-mining sector of the economy,

which increased the discontent of the non-mining classes. Finally, this dynamic exploded with the Revolution of 1952.

The capture of the state by the Revolutionary Nationalist Movement (Movimiento Nacionalista Revolucionario (MNR)) and the Bolivian Workers' Union (Central Obrera Boliviana (COB)) in 1952 led to the nationalization of the mines in October of that same year and the formation of the state company Mining Corporation of Bolivia (Corporación Minera de Bolivia (COMIBOL)) (Paredes, 2012). Thanks to this direct control over mineral income, the mines became the main source of state income and the fuel for public spending in the rest of the economy. Between 1952 and 1964, when a military coup d'état put an end to the revolution, the Bolivian state used mining income to moderate the distributive conflict, to invest in the development of other sectors of the economy – particularly the manufacturing sector and the growth of the agricultural sector of eastern Bolivia – and to create a national citizenship (Klein, 2008; Soruco, 2010; Crabtree and Crabtree-Condor, 2012). However, domestic and international economic factors – primarily the prolonged and severe decline in the price of tin – conspired against this first attempt at the configuration of the Bolivian rentier state.

The decisive factor for the configuration of the current rentier state came with the oil boom of the 1970s. The administration of Hugo Bánzer approved a Hydrocarbon Law in 1972 that allowed for the opening of oil concessions, thus establishing new ways of capturing income. Oil exploitation throughout the 1970s expanded exponentially: in 1974, oil revenues allowed the state to balance its accounts, and in 1978, oil and natural gas exports represented 30% of Bolivian exports (Miranda, 2008). As Dunning notes, "by the end of the 1970s Bolivia had clearly witnessed an oil boom that . . . exerted a substantial impact on the coffers of the fisc" (Dunning, 2008: 244).

Although oil production and oil prices on the world market declined in the 1980s, oil revenues increased their share in the state treasury. In effect, the administration of Jaime Paz Zamora obligated the YPFB (Yacimientos Petroleros Fiscales de Bolivia) by law to transfer an increasing portion of its income to the central government, amounting to 60% of state revenues. In the 1990s the dependency of oil revenues tended to decline. This development initiated the neoliberal phase of the Bolivian state.

Confronted with serious macroeconomic imbalances, the government of Víctor Paz Estenssoro commissioned the minister of planning at the time – and future president – Gonzalo Sánchez de Losada to implement a reform of the oil sector. Inspired by neoliberal ideology, Sánchez de Losada pushed back the participation of the Bolivian state in oil

revenues from 50% to 18% (Dunning, 2008). The idea behind these cuts was to attract foreign investment for the exploration of new oil fields and to develop the exploitation of newly discovered deposits of natural gas. Tax revenues from oil income dropped dramatically, reaching a low of only 7% of total tax revenues (Dunning, 2008). On the other hand, although foreign investment actually flowed into gas exploitation – especially from 1997 onwards – Sánchez de Losada's reforms prevented this development from contributing significantly to government revenues. Instead, Latin American companies (Petrobras, Pluspetrol) and transnational non-Latin American companies (Repsol, British Gas, Amoco-British Petroleum, Total ELF) benefited mainly from the exploitation of gas.

The growing opposition of popular sectors and of leftwing politicians to the effects of capitalization and the increased expectations of gas as the motor of a renewed national development finally exploded in 2003 in opposition to the government project of constructing a pipeline from the East to Chile. The Gas War put an end to the second administration of Sánchez de Losada. This led to an end of the political struggle for the capture of natural resource revenues by the Bolivian state, which caused a rapid turnover of governments between 2003 and 2005.

The neoliberal experiment of disarming the Bolivian rentier state came to an end with the election of Evo Morales as president. The Morales government nationalized the Bolivian oil and gas industry again in 2006, increasing the state's share in the income of the sector to 82%, although the effective participation of the state was stabilized at 50% of revenues after 2007 (Miranda, 2008). Finally, in 2009, the state secured its control over non-renewable natural resources in a way that was favourable to the central government, and to the detriment of the grievances of the Media Luna departments (Santa Cruz, Tarija, El Beni) and of the claims of the organized indigenous peoples in the Indigenous Native Peasant Territories, where the hydrocarbon deposits were located (Humphreys-Bebbington, 2012). The importance of these developments has been widely recognized and disseminated by the Bolivian Government, which in 2013 stated that the nationalization of hydrocarbons had "generated more than $5 million USD for redistribution", and that YPFB had become "the country's largest business corporation" (President of the Republic, 2013).

Ecuador

More so than Bolivia, Ecuador benefited from the boom in oil prices in the 1970s. Along with the beginning of oil exploitation in the Ecuadorian Amazon, the military conducted a coup d'état and embraced

a programme of oil nationalization and development guided by the state. The military government of General Rodríguez Lara (1972–1976) explicitly followed a policy of "planting oil". This consisted of the investment of fiscal oil revenue into infrastructure as well as industry loans and other policies that sought to diversify the country's industrial foundation and to improve its productivity – and that of the agricultural sector. While there is still debate about the achievements of the Rodríguez Lara government (North, 1985; Conaghan, 1988), there is a consensus that this administration actually succeeded in institutionalizing a path of development that linked the country's economic growth, maintenance and expansion of infrastructure and government capabilities with the provision of comprehensive tax revenue from oil exports.

The development towards a rentier state was completed in two phases. In the first phase (1972–1976) a progressive fraction of the military controlled the state and maintained nationalist and inclusive development policies, although without much support from weak popular sectors. The second phase (1976–1979) actually halted some of those policies and instead used oil revenues as collateral to obtain international loans that were used to pay a bloated state sector, and as a source of cheap loans channelled into a dominant rentier class (Acosta, 2003; Larrea, 2009; Oleas, 2013). In both instances, tax collection – except those obtained in customs – practically stopped to the point that, according to Acosta (2003), "the dictator himself, Guillermo Rodríguez Lara, boasted decades later that in his government taxes were not collected. Any fiscal emergency, when oil revenues were insufficient or declining due to economic reasons, was covered by foreign loans."

In 1979 the military gave back the state government to elected civilian governments. The first civilian government (1979–1984) partially resumed the project of the progressive military government, using oil revenues to postpone adjustments to the economy and to increase social investment (Oleas, 2013). However, the impact of the international debt crisis in 1982 and the deterioration of international oil prices tested the ability of these civilian governments to handle the problems that they had inherited from the rentier state: a mostly inefficient, oligopolistic and slow-growing industry, rising urban and rural poverty, and so forth.

The institutions that made the capture of oil revenues possible in the 1970s remained practically unchanged in the 1980s. Only at the end of the decade, as a result of a sharp drop in oil prices, did the Ecuadorian Government make efforts to reduce direct state control over some elements of the oil industry and to attract foreign investment.

During the government of Sixto Durán Ballén (1992–1996), a politician of clearly neoliberal orientation, the state ceded a large part of its regulatory capacity and economic participation to private companies, and simultaneously reduced its oversight of mining activities. In an attempt to attract private transnational companies, state participation – in the form of royalties – decreased in favour of the creation of income taxes. In this period there was a systematic increase in socioenvironmental conflicts with indigenous peoples residing in the Amazon.

Oil revenues improved from 2002 onwards with the opening of new oil fields and the construction of a pipeline complementary to that which was constructed in the 1970s. Acosta described the situation in 2003: "Ecuador will be what it has always been, a primary producer country. And oil looms as the source of income that will alleviate pressures . . . The wager is how to produce and transport the greatest quantity of crude oil." This was a situation that, according to the author, was not beneficial to the state because the developments of the 1980s and 1990s had reduced the production capacity of the state oil company. The capture of oil rents by the state had decreased significantly (from 80% in the late 1970s to 18% at the beginning of the 2000s).

This bleak picture changed dramatically with the election of the current president, Rafael Correa, in 2006 (re-elected in 2009 and 2013). Armed with overwhelming electoral support, the new administration resuscitated the 1970s scheme of controlling oil revenues: he cancelled existing contracts, returned most of the concessions to the state, obliged companies to cede most of their income to the state, and strengthened the state oil company. All of these changes occurred just in time for the boom in international oil prices of recent years (Ray and Kozameh, 2012).

The reconfiguration of what I have named "the core of post-neoliberal environmental governance" in Bolivia and Ecuador happened within the institutional patterns established in the 1970s evolution towards rentier states. The current boom revives the countries' historical heritage, as shown in Table 4.1.

Endowed with abundant fiscal resources, the Bolivian and Ecuadorian governments have managed to distribute income by investing in social policies that seek to improve the living conditions of citizens, and to undertake ambitious programmes of industrialization and technological innovation (SENPLADES, 2013; Agenda Bolivia 2025, 2013). This aspect corresponds with the component of income distribution and it can be explained by two factors. First, in both countries the struggle for control

Table 4.1 Income capture in Bolivia and Ecuador

Mechanism of income capture	Bolivia	Ecuador
Royalties	18%	13.5%
Profit and export taxes	69.5%	60%
Total share of income	87.5%	73.5%
Non-taxed mechanisms	YPFB	PETROECUADOR

Source: UNASUR (2013), prepared by the author.

of the rentier state was resolved in the second half of 2000 in favour of rival political elites from the traditional oligarchies who had controlled their respective states during the 1980s and 1990s. Second, the pressure for a better distribution of wealth that developed in those years came from organized popular sectors, including rural groups affected by the exploitation of natural resources.

In short, political developments in previous years pushed for an income distribution different from that which predominated in the years of neoliberalism. However, since these developments incorporated new demands, they led to increased attention by the Bolivian and Ecuadorian governments to the themes relegated to the resource agenda that prevailed in the last quarter of the twentieth century, particularly the environmental costs of the extractive industries.

The current Bolivian and Ecuadorian governments originate from heterogeneous coalitions in middle-class and popular urban sectors, and – more in the case of Bolivia than Ecuador – rural sectors. Silva (2009) distinguishes two forms of inclusion of the popular sectors. On one hand, the ruling party in Bolivia – Movimiento Al Socialismo (MAS) – achieves the direct incorporation of popular sectors into the state government in the form of a classic party of the masses. Furthermore, the ruling party in Ecuador – Alianza País – is an electoral machine that had a strong mobilization, and participation of indigenous and peasant organizations, social movements with environmental roots, and NGOs from 2006 to 2009 (Becker, 2011; Andrade, 2012; Ortíz, 2013; Silva, 2013).

The difference between the origins and mechanisms of the incorporation of the governments is important. In Bolivia, the social support of the organized indigenous and peasants is key for the survival of the government. This factor has significantly influenced the discourse – strongly tinged by indigenous Bolivian ideology – and the way in which the project of *Vivir Bien/Buen Vivir* is configured. In Ecuador, the indigenous have maintained a tense relationship with the government of President

Correa as well as a progressive distancing from environmental organizations since 2010. This item is also reflected in the discourse of *Buen Vivir* (Dominguez and Caria, 2013).

One would expect, given these differences, that the policies of the two governments with respect to the economy–society–nature relationship would also be distinct. A government with high indigenous participation should have a policy that is more pro-environment than one with low participation; however, this is not the case. In fact, if a difference exists between Bolivia and Ecuador, it is in the degree of translation of environmental concerns into specialized state agencies. The strange thing is that, contrary to the prediction by indigenous theorists, the degree of incorporation of the environmental issue in Ecuador is higher than in Bolivia.

Environmental compensations and claims

Political sociological studies of the state administration (or management) of the environment have shown that it is composed of the following elements: a network of actors who operate – within and outside the state – around problems defined as "environmental"; certain professionals who define the situation and develop solutions to problems; institutional rules of the political process of decision-making; and the cultural ideas that legitimate these decisions (Lahusen and Münch, 2001). I have suggested that in Bolivia and Ecuador the core of resource governance consists of a strict set of governmental actors, namely, specialized ministers and state companies. Institutional rules in this core are highly formalized in their respective constitutions (state ownership of oil, gas and minerals being the basic rule). The relevant professions are basically administration, geology and – to a lesser extent – a diverse set of "environmental consultants". Finally, the cultural ideas that legitimate decisions are fairly simply: oil, gas and minerals are resources to be exploited for the benefit of national development (SENPLADES, 2013; Framework Law of Mother Earth and Integral Development for Living Well O431 Official Gazette, 2012; Agenda Bolivia 2025, 2013).

Outside this nucleus, both Bolivia and Ecuador have ministries of the environment (the Ministry of Environment of Ecuador (MAE) and the Ministry of Environment and Water in Bolivia (MAyA)), departments and other state agencies that integrate a diverse network of professionals. Also, in both cases, final decisions are taken by the government. The principles that structure the cultural ideas of this sector are precaution, the need to restore environmental damage; the prevention of such

damages; and the concern for ensuring sustainability. The diagnosis of environmental problems includes, in both cases – and even more clearly in Ecuador – checking for damages caused by oil activities, such as deforestation, soil and water pollution, and loss of biodiversity and cultural diversity.

The solution to the detected problems is also common. In Ecuador, environmental governance is defined as the realization of the "citizen's right to live in a healthy environment, free of pollution and sustainable, and the guarantee of the rights of nature through comprehensive planning to manage habitats, to manage resources efficiently, to holistically repair and return life systems to real harmony with nature" (SENPLADES, 2013: 222). The Bolivian Government affirms that it has an obligation to "create the conditions to ensure the sustainability of the State itself in all its territorial areas in order to attain the standards of Living Well . . . to incorporate integral development in harmony and balance with Mother Earth in order to Live Well in the policies, rules, strategies, plans, programmes and projects at the central level of the State and of the autonomous territorial entities . . . to formulate, implement, monitor and evaluate policies, standards, strategies, plans, programmes and projects for the compliance of the objects, targets and indicators of Living Well, through integral development . . . " (Gaceta Oficial, 2012: 12).

In both countries, and as the culmination of long historical evolutions of the twentieth century (Baud and Ospina, 2013), the respective ministries of the environment administer "systems of environmental management". Key components of these systems are national parks and ecological reserves. In Ecuador the National System of Protected Areas (Sistema Nacional de Áreas Protegidas (SNAP)) comprises the State Heritage of National Areas (Patrimonio de Áreas Naturales del Estado (PANE)) – managed by the central government – and three other "subsystems" to make room for the participation of subnational governments, organized local communities and the private sector: "the Autonomous Decentralised Governments, the Subsystem of Protected Community Areas and the Subsystem of Private Protected Areas". Together these areas of conservation and protection comprise nearly 8 million Ha of the country.

The Bolivian Government, meanwhile, has organized a complex institutional framework that grants powers to the Public Ministry, the Ombudsman of Mother Earth, the Agro-environmental Court, the Ministry of Environment, and the Plurinational Council for Living Well in Harmony and Balance with Mother Earth. It integrates the ministry

of Developmental Planning (the Bolivian equivalent to the Secretaría Nacional de Planificación y Desarrollo/National Secretary for Planning and Development (SENPLADES)), the Autonomous Departmental Governments and so forth. This organization multiplies the actors and entry points in environmental issues. As in Ecuador, the basic component of this system is the National System of Protected Areas (Sistema Nacional de Áreas Protegidas (SERNAP)). The Plurinational Council is directly hinged to the presidency of the Republic.

Another important environmental agenda of the two countries is climate change. The respective ministries and other state agencies have created plans for adaptation to and mitigation of climate change. The development of this theme, and of the environmental agencies overall, has relied heavily on international cooperation. Prominent international actors, who are common to both countries, are the World Bank, UNEP and the official German cooperation.

Finally, the Bolivian and Ecuadorian governments agree that the rich biodiversity of the two countries provides opportunities for some kind of "green" development, and they have advanced policies in this direction. Since 2001, Ecuador has been developing a National Program of Bio-knowledge, whose management depends on the ministries of environment and agriculture under the National Biosafety Framework (MAE, 2013; Andrade and Zenteno, 2014). In Bolivia the "Framework Law . . . " and the "Bolivia Agenda, 2025" contemplate a similar development, but the government has not made progress in the implementation of these policies.

As indicated above, the Ecuadorian environmental policy differs from that of Bolivia in the importance that it gives to the environmental damage caused by oil exploitation. Since 2008 the Ecuador's government has promoted an active policy of environmental remediation, executed by the Reparation Program of Environmental and Social Liabilities (Programa de Reparación de Pasivos Ambientales y Sociales (PRAS)).

The notion of "shared responsibility" – between the state and local communities in the management of environmental problems that prevail in institutional environmental designs – opens up opportunities for the participation of local communities and municipal, provincial and (in Bolivia) departmental governments. The role of scientific knowledge in this layer of environmental governance is important. Agencies generate and require scientific knowledge for the installation of environmental indicator systems, environmental accounts, early detection of environmental damage and so on. This necessity has created state organizations populated by local experts – specialized in public

administration and in certain branches of knowledge, such as biology and geography – and scientists mostly of international origin or trained in first-world universities (Andrade and Zenteno, 2014, http://www.conocimiento.gob.ec).

Although the Bolivian Government shares this point of view to a great extent, it gives senior ranking to the generation of knowledge and technology to add value to "food processing, lithium, gas and hydrocarbons . . . " (Agenda Bolivia 2025, 2013). In fact, the sixth objective of the development of the Bolivian Government's agenda indicates that such technological advances will be accompanied by an increase in hydrocarbon and metallic and non-metallic minerals. The incorporation of technology refers not only to processes of industrialization but also to minimizing environmental damage.

In summary, this level of post-neoliberal environmental governance – summarized in Table 4.2 – incorporates not only a range of actors but also well-established international actors and issues of the global environmental agenda (deforestation, environmental remediation, environmental services, climate change, etc.). The latter should not be surprising given that the state agencies that organize the sector originated precisely from pressures and institutional global designs, or they at least count on international cooperation for their operation. Environmental administration is focused on environmental management, and its basic attention is devoted to widely accepted global issues – deforestation, the preservation and administration of water resources, the remediation of various forms of environmental pollution, and increasingly climate change – and its function is to produce public policies on these issues. Its fundamental political component is the administration of national and international resources for the reproduction of environmental management.

There remains to be examined the third layer. Unlike the previous two layers, which are directly hinged to the state, this last one is the domain of civil society. Even when it resorts to formal rules, it is mainly informal and is open to a number of state and non-state actors. This level is important because, on the one hand, it has provided some of the discursive resources that comprise the environmental rhetoric of the Bolivian and Ecuadorian governments and, on the other hand, civil actors use this rhetoric as a resource of political action.

A cursory examination of the rhetoric of "living well" and "good living", in Bolivia and Ecuador, respectively, indicates the constant appeal to three ideas: harmony with nature, the sacredness of nature (revealed in the frequent use of names such as Mother Earth and *Pachamama*), and

Table 4.2 Environmental administration in Bolivia and Ecuador

	Bolivia	**Ecuador**
Formal rules	Framework Law Agenda Patriótica 2025 Specific laws	Constitution National Plan for Living Well Specific laws
State actors	Ministry of the Environment and Water Plurinational Council for Living Well	Ministry of the Environment Various ministries and departments
Other actors	Subnational governments International cooperation	Subnational governments International cooperation
Scientific knowledge	Integrated into the identification of problems and solutions Dependence on standard scientific knowledge	Integrated into the identification of problems and solutions Dependence on standard scientific knowledge
Issues	Administration of national parks Policies of conservation and environmental reparation Climate change	Administration of national parks Policies of conservation and environmental reparation Climate change

the rights of this entity. The Ecuadorian Constitution, both in its preamble and in its Chapter 4, recognizes the right of Ecuadorians to live in a healthy and balanced environment, in harmony with nature. A similar phrase appears in Chapter 1, Article 1 of the Bolivian "Framework Law…" in the form of "comprehensive and balanced development" and as a guarantee of the "continuity of the regenerative capacity of the systems and components of Mother Earth". The "living well" and "good living" discourses also agree on two other points. First, this state of harmony does not exist at the moment, but it will be obtained in the more or less distant future as a result of social efforts led by the state. Second, a key component of this company is the respect and use of "ancestral knowledge" ("originating" in the Bolivian rhetoric) (SENPLADES, 2009, 2013; Domínguez and Caria, 2013).

Regardless of the ideological value that these discourses may have to legitimate governmental actions, "living well" and "good living"

have encouraged complaints, protests and demands of indigenous and environmentalist actors as much in Ecuador as in Bolivia. In effect, the anti-mining protests in Ecuador in 2012, the staging of anti-mining referenda in that country (see Chapter 11, this volume) and the failed Yasuní-ITT initiative articulated the idea that the achievement of "good living" depended on at least three conditions. These comprised the preservation of ecological balance, the need for governments to take into account the voice of those who are possibly affected (van Teijlingen, 2013), and, in the case of Yasuní, the obligation of the Ecuadorian state to preserve cultures whose ancestral knowledge preserves the rights of nature (Rival, 2012). In Bolivia the conflict over TIPNIS national park was also articulated and could be processed through the resource of the "living well" and rights of nature rhetorics (Ortiz, 2013).

Both the Yasuní-ITT initiative and the TIPNIS conflicts show some of the processes, mechanisms, actors, potentials and limits of the "living well" and "good living" rhetorics. In both cases, policies initiated by their respective governments tried to protect the rights of the indigenous peoples who lived in areas of the Amazon. Similarly, in both cases these policies implied that the state would abstain from exploiting oil resources in those territories. Finally, when both governments changed their policies, they incited intense conflicts between the executives and national indigenous and environmentalist groups that had international support.

In summary, the third layer provides discursive and legal resources for stakeholders to advance their environmental demands. These actors are, in principle, any group of citizens; and even those citizens are not limited to national boundaries as they may be international organizations. In special circumstances – such as the temporary control of the state by "green" coalitions – actors, issues and modes of operation that arise in this sphere can become national and international public policies (Sodërbaum, 2000), as happened in Ecuador between 2007 and 2010. In Bolivia this position was occupied by indigenous movement organizations (Hogenboom, 2014). However, when that careful step contradicts the preservation of the core of natural resource governance in a rentier state, these same actors and themes are again expelled to the periphery, as indeed happened with the Yasuní-ITT initiative and the Bolivian TIPNIS conflict. The expulsion depends on how the decisive power is organized in the Bolivian and Ecuadorian states. In both cases the standard decisive power falls on the president and state agencies that are nuclear to the rentier states; this group can veto policies that would infringe on their reproduction.

Conclusion

The Bolivian and Ecuadorian experiences show that although new forms of regulating the exploitation and use (income) of natural resources can be created, they have prioritized the preservation of the states' access to income and, by implication, of the extractivist activities themselves. This burden differentiates environmental government at various levels, as long as their existence does not compromise the reproduction circuit of the rentier state (extraction cycle, income and distribution). Bolivia and Ecuador have abundant natural resources, both in the narrow sense of mineral resources – oil and gas – and in the extended sense of ecosystem diversity. Additionally, in both countries the long-term historical development has been towards the installation and consolidation of rentier states. The current commodity boom created room so that governments that might have followed a different path opted to recreate the rentier states of the 1970s. The policy option resulted in the differentiated post-neoliberal mode of environmental governance that is currently being consolidated in the two countries.

In both countries the original formation of the rentier states depended both on internal political struggles and the existence of high international prices for hydrocarbons – and in the case of tin in post-war Bolivia, the collapse of these international markets. The current reactivation of the rentier states reflects factors similar to those of the past: the boom in mineral exports enabled the Bolivian and Ecuadorian governments to reconfigure the rent-seeking mechanisms that ensure their access to the abundant returns produced by extraction and export to international markets. This development, in turn, increased the ability of states to provide basic services, and consequently legitimized the extractive activities supported (and to some extent controlled) by the states.

The explanation is not only economic. Politics has also played a role in creating post-neoliberal environmental governance. The Bolivian and Ecuadorian governments are the result of processes of dispute over the use of natural resources. The arrival of new players to the control of the state, and the means by which they attained that power, would seem to explain the construction of a sort of macroideology with strong environmental tones: "living well" and "good living". This element completes the set of environmental governance and gives it ideological coherence. The regulation of natural resources, including the use of income from exploitation, makes sense only to the extent that it serves a greater

purpose: to achieve a new relationship between Bolivian and Ecuadorian societies and their natural surroundings.

The dynamics of post-neoliberal environmental governance are complex. On the one hand, the rentier status of the Bolivian and Ecuadorian states promotes the social and biological reproduction of societies and new attempts at industrialization. On the other hand, rentier states have an interest in promoting the expansion of resource frontiers, which compromise fragile ecosystems and the survival of rural societies, thereby increasing political conflicts. However, it is still incipient and relatively exclusive, and its mechanisms are insufficient to solve the operation/preservation dilemma. Finally, the open possibilities in the ideological or cultural layer provide symbolic and material resources for the expression of socioenvironmental conflicts, and some mechanisms for its processing. However, its implementation depends on the strength of the democratic regime.

It is reasonable to assume that the tensions, conflicts and dynamics that gave rise to the current mode of environmental governance will continue to influence future developments. At the moment, however, it is difficult to say if at some point in this development it will organize itself in a more pluralistic and open way than it is at present, or whether – as in periods of decline in international prices – it will be reconfigured in an increasingly exclusive and unstable direction.

Notes

1. In Bolivia, poverty improved more rapidly than inequality, which actually seems to be increasing, while in Ecuador the two indicators have decreased simultaneously and at accelerated rates. A report from the Central Bank of that country indicates that the accelerated rate is due to two factors: "the improvement of the international environment" and the degree of destruction provoked by the crisis of 1998–2002. See Dirección General de Estudios, Banco Central del Ecuador, *La Economía Ecuatoriana luego de 10 años de Dolarización* (*The Ecuadorian Economy After 10 Years of Dolarisation*) (Quito: Banco Central del Ecuador).
2. The exportation of minerals is not important for Ecuador, but the high prices of mineral ores have stimulated the government to promote the development, albeit still incipient, of metal mining in Ecuador, for which Chinese investments have flowed into the country.
3. For an overview of the financing of social policy from mineral (or hydrocarbon) resources, see Hujo, K. (2012).
4. See CEPAL (2013).

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5
Changing Elites, Institutions and Environmental Governance

Benedicte Bull and Mariel Aguilar-Støen

Introduction

The topic of elites has always been controversial in Latin American social sciences. Elites have been studied indirectly as landowners, capitalists, business-leaders or politicians, and have also been approached directly using concepts and theory from elite studies. Although there is a significant amount of literature on the role of elites in democratic transformations (see e.g. Higley and Gunther, 1992), elites have often been considered to be an obstacle to the formation of more democratic, prosperous and egalitarian societies (e.g. Paige, 1997; Cimoli and Rovira, 2008). This is also the case in the literature on environmental governance, in which elite groups are often considered to be an obstacle to sustainable development and an obstacle to establishing more equitable influence over the use and benefits of natural resources. Therefore, although an elitist conservation movement has long existed in Latin America, struggles to protect the environment from overexploitation and contamination have commonly been related to struggles against local, national and transnational elites by subaltern groups (Martínez-Alier, 2002; Carruthers, 2008; chapters 1 and 2 in this volume).

Over the last decade a number of changes, which might have an impact on the composition and attitudes of elites, have occurred in Latin America. Such changes could have consequences for environmental governance in the broad sense of the concept, as outlined in the Introduction of this book. Out of 49 presidential elections in the 2003–2013 period, 22 were won by centre-left candidates, and with the exception of Mexico and Colombia, centre-left governments were in power in all the large economies in Latin America for most of this

period (Bull, 2014). Many of these governments represent groups that have previously been marginalized from politics and antagonized by the elites, including indigenous and environmental movements. With the changes in the global political economy, including the rise of China and a number of other emerging economies, Latin America has also seen the entry of a number of new economic actors, including new transnational companies and new lenders. Furthermore, in key sectors, new technologies have changed the production structure and therefore also the concentration of resources – and, in turn, possibly the composition of elites.

In spite of several such changes, the initial optimism regarding implications for environmental governance has subsided. In 2010, environmentalist Eduardo Gudynas (2010) rhetorically asked the new governments: If you are so progressive, why do you destroy the environment? In the aftermath, several other questions have been posed about why governments that publicly rejected genetically modified agriculture later promoted it; why they accelerated the issuing of mining concessions in spite of protests from their former constituencies; and why they expanded logging and oil exploitation in vulnerable areas in spite of pledging to protect them.

The aim of this chapter is to provide new insight into the elite dynamics that may provide answers to some of the questions outlined above. The chapter empirically interrogates elite shifts based on six case studies, outlining how new elites have emerged, how old elites have continued to influence politics and the economy, and how the relationship between new and old elites has affected environmental governance in the region.

For our analysis we use a "resource-based" definition of elites in environmental governance: "Groups of individuals that due to their economic resources, expertise/knowledge, social networks, or positions in political or other organizations stand in a privileged position to influence in a formal or informal way decisions and practices with key social and environmental implications" (Bull, 2015: 18). This is a multifaceted definition of elites that allows for the existence of both parallel and competing elites. Nevertheless, our analysis places particular emphasis on elites that control economic resources, including business elites and landowners. Therefore below we discuss the relationship between the concept of elite and that of class, and we discuss how elites and classes are considered to contribute to or hinder democracy and development, how they might change, and how they might be thought to impact environmental governance.

The rest of the chapter is structured as follows. The second part presents the puzzles motivating our study. In most cases these refer to environmental practices or environmental policies that were less sustainable than what was expected. Yet there are also cases in which surprising progress has been made. The third part summarizes the different problems of elites as discussed in the literature. The discussion includes the structural limitations to the transformative potentials related to a shift in the command of liberal political institutions, the predominance of "elite circulation", and what we call the "state/development" imperative based on a Weberian understanding of the need for state construction. The fourth part discusses different ways in which our case studies illustrate and confirm the problems discussed in the elite literature: how entrenched elites have hindered structural transformations towards an environmental governance that ensures more sustainable and equitable production; the conflicts over land use and how they have their roots in institutions that are kept weak due to historical control by elites; and how new governments accommodate their politics to the demands of the elites. However, some of the findings also challenge the rather pessimistic outlook of elite theory. In the fifth part we concentrate on the role of global economic transitions and technology, and elite shifts. The sixth part discusses the possibilities for change due to the emergence of new elites with different attitudes towards environmental governance. These include both new political elites and new knowledge elites. Finally, the conclusions are presented.

The puzzles: Progress and setback in environmental governance under leftist governments

In 2009, when El Salvador got its first president supported by a leftwing and former guerrilla party (Frente Farabundo Martí para la Liberación Nacional (FMLN)), it was a major break with the past. Before Mauricio Funes' electoral victory, El Salvador had been ruled for 20 years by the same business elite-led party (Alianza Republicana Nacional (ARENA)). During this period the country had undergone a major economic transformation from an agroexport country to one dependent on remittances and the service sector (Segovia, 2002). This conversion brought temporary relief to the environmental impact of agroexport-oriented agricultural production, of which the most damaging products were cotton and sugar (Hecht et al., 2006). Nevertheless, when Funes took power, the country faced a triple crisis – economic, social and environmental – which enhanced the vulnerability of the population to natural

catastrophes. Yet the country was also characterized by significant rural as well as urban political mobilization, and by the existence of various organizations that had developed sophisticated alternatives to the conventional agricultural development model. In spite of this, the Funes government struggled hard to set El Salvador on a different path, and, in the end, new ideas related to alternative agricultural development became marginalized in the national agenda, while there was no consensus on why no new development model was allowed to emerge while the old one continued to perform badly.

In Bolivia, Evo Morales – who came to power in 2006 with his Proceso de Cambio (process of change) – gave priority to family and small-scale agriculture over industrialized agriculture. This also implied a rejection of all GM organisms due to their environmental and health implications. This position echoed the viewpoints of a broad array of social movements upon which the governing party, MAS, was based. Since coming into power, MAS has been in deep conflicts with the country's old elite, with their stronghold in the "half-moon" states (Santa Cruz, Beni, Pando y Tarija) and controlling most of the country's economic sectors, including agriculture. Paradoxically, during the government of Evo Morales, the amount of genetically produced soy in Bolivia more than doubled (Zeballos, 2012), and the question of how the government could make this compatible with the official anti-GM discourse became more and more pressing.

Argentina has also been marked by deep conflicts between the governments of Nestor Kirchner and Cristina Fernández de Kirchner of the Peronist party (Partido Justicialista) and agricultural elites. Yet, at the same time, Argentina has become one of the major producers of genetically modified soy in the world, with major implications for the structure of the agricultural sector as well as for the environment (Trigo, 2011). Why was there so little public debate about it?

In Ecuador a major puzzle regarding biotechnology also arose. A major shift in the governance of the country occurred when Rafael Correa came to power, leading a broad coalition (Alianza PAIS) with strong participation from both indigenous and environmental movements. The platform for the coalition strongly rejected GM organisms and other uses of biotechnology in agriculture. However, once in government, Correa strongly promoted their use.

The mining sector is probably the most controversial in Latin America today, with its notable expansion, and its obvious environmental and social impacts, along with the large number of conflicts mining has generated across the region (see also chapters 2 and 11). In Guatemala,

in the silver mining project El Escobal in the south-eastern part of the country, a transnational company (Tahoe Resources Inc.) and national elites face the protests of the indigenous Xinka people and their organizations. However, in spite of stated good intentions by the government as well as the companies, repressive practices against the protesters have continued and there has been virtually no room for dialogue. We attempt to explain why it has proved so difficult to mediate between the conflicting parties.

However, there are also positive cases. In the Brazilian states of Acre and Amazonas, there have been significant improvements in forest policy and forest protection over recent years. This stands in stark contrast with the rather disappointing record regarding forest protection of the federal government during the three consecutive governments led by the Worker's Party (Partido dos Trabalhadores (PT)), those of the Luiz Inácio Lula da Silva (2003–2007 and 2007–2011) and Dilma Rousseff (2011–2014) administrations. Moreover, advances in forest governance have occurred in states governed by different parties. What can explain Acre and Amazona's success?

Environmental policies and practices are not only influenced by domestic and local politics. There are also questions to be asked of international initiatives. One of the international initiatives with the most far-reaching consequences for forest governance in Latin America at the moment is the project known as Reducing Emissions from Deforestation and Forest Degradation (REDD). In spite of its rhetoric of inclusion, not all involved parties seem to have found their views expressed in the initiative. Instead, REDD is generating its own "elite" and its own discourse, and the question is how this can really address the pressing issues in Latin America's environmental governance.

Our approach to answering these questions has been to focus on elites. Thus in the following section we will discuss what elite theory might say about the questions above.

The "elite problem" in theories of development, democracy and environmental governance

The recent increase in interest about elites and development in academic literature is closely connected to an increasing consensus about the importance of institutions for development, and the role of elites in shaping those institutions (Acemoglu and Robinson, 2012; Amsden, Di Caprio and Robinson, 2012). A focus on elites and institutions is in no way new in development theory. It has been a central element

in Weberian-inspired development theory, from Gunnar Myrdal to the literature on the "developmental state"[1] (Myrdal, 1968; Woo-Cumings, 1999). Elites have sometimes been considered a hindrance to the emergence of such a state. As argued by Myrdal, "In fact, [elites] are best defined as people who are in a position to hinder reforms or to manipulate them, and, in the end, to obstruct their implementation" (Myrdal, 2010 [1979]: 335). However, others have considered elites to be capable of the efficient and productive channelling of resources, although they have frequently also acted as rent-seekers and have directed resources towards favoured and inefficient social groups (Amsden, Di Caprio and Robinson, 2012: 5).

Much less discussed is the relationship between elites, institutions and sustainable development, a dynamic that also necessitates the analysis of environmental governance. The literature referred to above is almost exclusively focused on economic growth and industrial upgrading. Furthermore, the term "institutions" is largely equated with "state institutions", and "development" is understood as economic growth at the national level. This literature has, to a very limited degree, problematized the environmental sustainability of development, and its distributional implications are only considered to the extent that they have consequences for long-term national economic growth. In other words, distribution of the benefits of growth and development across social groups and geographical areas is only considered a problem if it leads to decelerated growth – for example, if the majority are too poor to constitute a market or lack the health and education to provide the necessary human resources.

This view of development is often rejected by the literature on political ecology that takes "Capitalism and its historical transformations [as] a starting point for any account of the destruction of nature" (Peet, Robbins and Watts, 2010: 23). What was characterized above as "development" is, in political ecology literature, considered to be the privileging of certain exploitative productive systems over others, causing intertwined distributive and ecological conflicts and the degradation of the environment (Alimonda, 2011). In the political ecology literature, however, elites are largely "black boxed". Elites appear as the perpetrators: they are the capital owners, the business and knowledge elites, and the groups controlling the state, thereby contributing to the marginalization of people inhabiting rural landscapes and to the overexploitation and pollution of natural resources (Carruthers, 2008). However, elites in the political ecology literature are rarely the object of direct scrutiny. Their interests are considered to be dependent on their location in the

structural relations of domination, and their privileges to be derived from their positions in the structures that configure Latin America as a subaltern region open to exploitation according to the needs of a globally integrated capitalism. The double exploitation of people and nature also forms the basis of the construction of the modern states, dominated by national elites, but it is also often based on the control of natural resources and local groups in different parts of the territory (Alimonda, 2011).

Against the backdrop presented above, we should not only ask under what conditions we can expect elite objectives to be aligned with national development goals. We also have to discuss how to make those goals aligned with the interests, needs and aspirations of all population groups across social classes and territories, as well as with those of future generations. A common answer to the question of how to achieve that has been to emphasize pluralism and democracy; in other words, to ensure that there are good mechanisms of representation, participation and accountability, which can lead to the establishment of institutions of environmental governance with the potential of less elitist and more sustainable development outcomes. This has been what many hoped would occur in Latin America in recent decades after the return to formal democracies and the historical rise of previously marginalized groups to power in the government.

Elite theory has nevertheless never been convinced of the merits of pluralist democracies to make societies more egalitarian. To the contrary, elite theories of all kinds have had a quite dismal view of the potential of democracy to transform society, a matter that is partially rooted in their view of the state. Marxist elite theory, which defines elites based on their relationship to capital and means of production, is generally sceptical of the possibility for changes in the state without underlying changes in the mode of production upholding it (see e.g. Jessop, 1990). As a democratic government depends on public support, it will suffer if it presides over a serious drop in the level of economic activity as a result of conflicts with capitalists (Block, 1977). Therefore, in spite of the establishment of pluralist institutions, the state cannot really be democratized within a capitalist economy.

The other major classical political-economy theory of elites and democracy, developed by Schumpeter, was highly critical of the Marxist equation of true democracy with socialism, although not discharging the possibility that they could coexist.[2] He does not have much more faith in pluralism either. Schumpeter's main point is that democracy is inherently elitist: "democracy does not mean and cannot mean that

the people actually rule . . . Democracy means only that the people have the opportunity of accepting or refusing the men (sic) who are to rule them" (Schumpeter, 1976: 285). However, this should not lead one to be pessimistic about the decisions made in democratic institutions. The functioning of democracy would depend on the degree to which a government is restrained by autonomous state powers (most importantly, the judiciary), the self-restraint used by such powers (also parliamentary) and the existence of an independent bureaucracy.

The so-called "Italian school" of elite theory was also sceptical of the virtues of pluralist democracies. Originating in the writings of Mosca, Mitchells and Pareto (see Pareto 1997 [1935]; Mosca, 1939; Michels, 1962), it defines the elite as a distinct group of society that enjoys a privileged status and exercises decisive control over the organization of society (Wolf, 2012: 120). Mosca regarded universal suffrage and parliamentarism as unable to dissolve the principle that, in any society, an "organized minority" is able to "impose its will on a disorganized majority" (Mosca, 1939: 154), while Vilfredo Pareto argued that elites would slowly be replaced by ascending families and groups without changing the elitist structures of society (Pareto, 1935). Yet it is this elite circulation, not the revolutions led by the dispossessed classes, that would lead to change (Pareto, 1916, cited in Hartmann, 2007).

For this study we adopted a "resource-based definition" as outlined above, which combines some of the elements of the Italian approach with that of the Marxist approach. The definition we adopted here considers elites to potentially emerge from their control of various and possibly overlapping resources, including organizational (control over organizations, including the state), political (public support), symbolic (knowledge and ability to manipulate symbols and discourses) and personal (such as charisma, time, motivation and energy) (Etzioni-Halevy, 1997: xxv). Yet we also include a focus on the actual influence that these groups have on the environmental outcomes of changing policies and practices.

Also, our view on how elites shift is eclectic. In the Marxist view, rather than through a democratic shift of government, change would emanate from below, based on the construction of political subjects among the dispossessed classes. However, Marxism has also envisioned changes emerging from the space opened for the "relative autonomy of the state" in situations of weak or split class forces (Jessop, 1990). The capitalist classes were considered to be unable to establish a "political hegemony" by themselves, thus ensuring the dominance of the lower classes. This is rather the role of the state, which in the process assumes

a relative autonomy from the capitalist classes (Poulantzas, 1978). This makes room for the emergence of a state elite that is functionally set apart from the capitalist class.

This is an issue that is also essential to Weber, who regards the state bureaucracy not only as a by-product of capitalism but as the most effective form of legitimate power and the source of the emergence of an entirely new class (Weber, 1978). The structure and power of the bureaucracy is much more important than the electoral institutions since the demos itself is "a shapeless mass [that] never 'governs' larger associations, but rather is governed" (Weber, 1978). The dilemma presented to new political forces gaining formal power over a state apparatus is that, while the bureaucracy may hinder a shift in policies and practices, it may take decades to construct. Irrespective of how much popular support a ruler may enjoy, without the instrument of a modern bureaucracy, his or her ability to enact, implement and enforce his or her will is severely limited.

In sum, with the exception of the Marxists, elite theorists doubt the possibility of elite-free societies. Moreover, they all have reservations against the belief that a shift in government will automatically result in a shift in elites. Nevertheless, there are venues open for change. We focus on shifts in the elites' control of resources that result in changes in their ability to exert influence over decisions and practices with environmental implications. In Latin America recently, we identified four such shifts, which will be discussed below.

Leftwing governments, elite circulation and limitations to environmental governance shifts

The first such process of change is the shift in control of political resources related to the entering of power of centre-left governments, many of which represented groups that had previously been excluded from political power, including indigenous movements, labour movements, environmental movements and diverse social movements constituted by dispossessed groups. In spite of getting electoral support from these groups, many of the governments have later disqualified or consciously attempted to co-opt some of them (Zibechi, 2010; Bowen, 2011), while new elites emerge. Thus we may observe a process of "circulation of the elites", controlling political resources with a possible impact on environmental governance.

One example of that is found in Bolivia, where groups associated with the governing party MAS have started to gain political resources and

power (Ayo Saucedo, 2012), but also economic resources through, for example, the processes of nationalization of enterprises (Ayo Saucedo et al., 2013). The soy sector has long been dominated by a landed elite, with diverse origins (including large groups of immigrants from Brazil), but with a common discourse on the use of GM, the benefits of industrial agriculture and the desire to be independent from the Morales government (Plata, 2008; Soruco, 2008). This traditional elite still control important economic resources (particularly through their control of land). Nevertheless, a new group of people, with significantly fewer economic resources than the traditional economic and political elite, has entered the political arena and is exerting influence over the way in which the environmental consequences of GM agricultural production are addressed (Høiby and Zenteno Hopp, 2015). This new group is composed of soy farmers who have accessed their productive capacity due to contacts in the MAS party, and political groups. While standing quite far apart from the old soy elite on several matters of economic policy and so forth, they coincide with them on the issue of the desirability of expansion of GM soy. Soy production contributes substantially to government revenues and perhaps, therefore, the expansion of GM soy production into forested areas is not rejected by the government.

In El Salvador, the entering of a centre-left government had quite different consequences. El Salvador is a country that has historically been dominated by a closely knit agroexport-based elite that have had political power for most of the country's history, historically in conjunction with the military (Paige, 1997). Between 1989 and 2009 they ruled through the rightwing ARENA party, led by some of the country's richest families. Thus they awaited the coming of a government supported by the FMLN with significant fear and contempt, and the old elite put up both political and economic resistance. However, the right wing was already split when the Funes government came into power, partially due to the prior transformation of El Salvador from an agroexport- to a service-based economy dependent on remittances from migrants in the USA. Although the old elite families diversified their portfolios to benefit from the new economy (Bull, 2013), the economic transformation also produced the ascendance of new economic elites that eventually challenged the old elite dominating the ARENA party. That resulted in the breakout of the GANA party (Gran Alianza por la Unidad Nacional) soon after the Funes government took power. The Funes government attempted to include broad groups of the society in a multistakeholder dialogue to establish new forms of governance of agricultural and other productive activities. The purpose was to confront

the grave environmental crisis in which El Salvador was submerged. The groups that advocated a different agricultural model more focused on small farms and ecological production included both members of the new government, particularly linked to the Ministry of the Environment and Natural Resources (MARN), and a broad set of civil society organizations working locally to create economies based on principles of ecology and solidarity.

However, the government could not ignore the economic crisis, with low or negative growth for many consecutive years. As predicted by Block and other Marxists, the government's dependence on the economic elites for investment limited strongly its freedom of action. The domestic economic elite also represented the political opposition, although it was split between ARENA and GANA. Although ARENA, GANA and the private sector peak association ANEP (Asociación Nacional de la Empresa Privada) initially participated in different forums of dialogue to reach solutions to pressing problems (including the Social and Economic Council established on the model of a similar institution in the EU), the relationship soon soured. The government was required to re-establish a relationship with the private sector in the context of the US-funded Alliance for Growth program, but then chose to deal directly with a narrow group of the country's most powerful businessmen in order to attempt to entice them to invest in El Salvador. In the process, however, the development plans became more and more aligned with the business elite's priorities and less and less to the groups proposing alternative models within the government (Bull, Cuéllar and Kandel, 2014). There was also an incipient economic elite emerging as a result of the policies of the new government. This had links to the governing party, but benefited from its role in the companies established with funds from the Venezuela-led Bolivarian Alliance for the Peoples of Our America (ALBA) (Lemus, 2014). However, this elite showed little inclination to support the groups within a ruling party that advocated a shift towards a more sustainable development model.

The case of Ecuador is illustrative of a different solution to similar structural constraints. When Rafael Correa came to power in 2008, it was as head of a broad coalition with support from grassroots organizations, and with a strong environmentalist faction within the government. While new groups entered the governmental corridors, these were not considered to be a new elite but rather a counterweight to the traditional elites in Ecuador that had previously – and simultaneously – incorporated and marginalized grassroots organizations (Bowen, 2011). The environmentalists in the government were able to influence

how environmental issues were framed in the official discourse, and important changes in the status of the environment and its relation to human activity were introduced to the constitution of the country (Andrade, 2012; Basabe, Pachano and Acosta, 2012). One of the changes made was that the government openly rejected GM organisms.

However, Correa's government was equally challenged by old elites that, although lacking a recent past of 20 years of relatively stable rule that ARENA in El Salvador had enjoyed, were equally enmeshed in the international economy (both countries converted to US dollars in 2000) and had enjoyed strong privileges in association with multinational companies in the past. Yet Correa managed to challenge the old elites to a quite different extent than his El Salvadoran counterpart by ensuring income from the oil industry, strengthening the incipient mining industry and engaging in a process of strengthening the Ecuadorean state.

During Correa's second term (2009–2013) his political project was increasingly formulated as that of a developmentalist project, resting on the parallel strengthening of technology and industrial upgrading and the intensification of resource extraction. This resulted in the weakening of the environmentalist faction of the government and in the emergence and gradual strengthening of a young technocratic elite. This elite not only supported the industrialization efforts but also had a positive view on GM organisms. These young professionals, owing their influence to specialized knowledge of biotechnology, are becoming key players in defining strategies to achieve the diversification of agricultural production in Ecuador. Their view fits well with the developmentalist ideas pursued by Correa, seeking rapid diversification of the Ecuadorian economy led by experts and guided by scientific knowledge (SENPLADES, 2013). While these ideas made room for the influence of this new technocratic elite, it is also the case that the emergence of the technocratic elite reinforces and supports the plan.

Thus in the cases above we have seen the entry of new political groups in government that have struggled against old elites in their pursuit of political and economic projects. However, in the process, new elites have formed based on access to economic- and knowledge-based resources in addition to political ones. Yet the elite circulation we have seen in Ecuador and Bolivia has had a limited positive environmental impact, as requirement for funding for social projects, the strengthening of the state, and the continued struggle against old elites have often weighed stronger than environmental concerns. Moreover, emerging new elites have had equally strong economic interests in the continuation of an extractivist model, while political elites (particularly in the

case of Ecuador) have sought support from groups controlling a technical knowledge and ideology of continued industrialization and the conquering of nature.

The role of global economic transitions and technology

The second process of elite change is a shift in the control of economic resources due to changes in the global economy. Parallel to the so-called "left tide" in Latin America, three major interrelated trends have occurred in the global economy: a rise in the demand and prices of commodities; the strongly related rise of China as a major economic power, lender and investor in Latin America (Durán Lima and Pellandra, 2013); and the strengthening of regional integration schemes such as ALBA, MERCOSUR and UNASUR, which have favoured the emergence of new economic elites associated with, for example, state-controlled or supported companies. These processes have enabled new groups to control significant shares of the economy.

The rise of China and booming commodity prices have allowed the South American countries to speed up debt repayment to international institutions, and to form new economic alliances. This has resulted in a decrease in importance of elites that have traditionally been very influential in the region, among them those related to Western multinational companies, the World Bank, the IDB and the International Monetary Fund. As a result we are currently observing new relationships and arrangements between national states on the one hand and, on the other hand, diverse international elites of various origins, including North American, European, Chinese and Latin American.

In all of the cases discussed here there has been, to a certain degree, an interplay with commodity prices, particularly the booming of the soy market and the opportunities that new elites have had to emerge. One case in particular, Guatemala, suggests that when rising commodity prices have resulted in the entrance of new transnational elites to the country, the scope of possibilities to influence environmental governance and outcomes of these new elites is limited not only by the features of the industry (i.e. mining) but also by the dynamics found in the relationship between new elites controlling access to markets and technology, and old elites controlling political resources and land. New transnational elites have opted to operate within a status quo determined by the power that the traditional elite holds over major knobs of the economy and the government, and a series of corrupt practices and relationships between the old, entrenched elite and the government

(Aguilar-Støen, 2015). Guatemalan business elites have been successful in keeping transnational elites, including transnational companies from Canada, Australia, the USA and Russia, in a subordinate position. This is explained by the control of different but complementary resources. Domestic elites control important political resources, networks and information; transnational companies could not operate without such resources (Schneider, 2012; Bull, Castellacci and Kasahara, 2014). Local elites have also established different types of partnership with transnational mining companies. In many cases, local elites have interests in junior mining firms that are subsidiaries of transnational mining companies. The drafting of mining legislation in Guatemala involved the participation of Canadian and Guatemalan businessmen, and the resulting mining law disproportionately favours mining companies over the interests of local populations, including their environmental concerns (Dougherty, 2011). A mix of local and foreign capital finances mining operations in Guatemala. Canadian groups in association with Guatemalan capital dominate metallic mineral exploitation. The largest non-metallic mining company is the Guatemalan company Cementos Progreso, which makes the second largest contribution to mining investments in Guatemala (Lee and Bonilla de Anzueto, 2009). Mining contributed 2% to the GDP in 2013 but it is estimated that, with the development of planned exploitation, mining could contribute approximately 4% in the future (Lee and Bonilla de Anzueto, 2009). This growth, however, is expected to occur in a context where 51% of the population of the country (15 million) live in rural areas and rely on agriculture for their livelihoods.

Mining operations have caused massive protests and discontent among local populations in Guatemala. One of the main reasons is that the law does not require companies to inform communities about mining operations before applying for licences. In this context, local communities have felt that their opinion has not been considered before mining operations have started, something to which they are entitled by law. Another source of discontent is that mining royalties were reduced from 6% to 1% by a new mining bill (Decree 48–97) and this is perceived among the general Guatemalan population as extremely unfair. Another source of conflict is that mining projects are often established in areas with longstanding conflicts related to access to land and land tenure, before the conflicts have been resolved. In most cases the government has responded to the demands of participation from the local population and to the protests with violence and repression. Also, as a response to the complaints regarding royalties, the Chamber of Industry unilaterally decided to propose a voluntary agreement by way of which

mining royalties could, based solely on the decision of mining companies, be increased from 1% to 3% for gold and from 1% to 4% for silver, whereas for other activities – such as cement production controlled by a Guatemalan family – royalties were kept at 1%. The government is then supposed to launch agreements with local authorities regarding royalties in their communities. This has been strongly rejected by local populations.

In Argentina there has been quite a different process of elite shift dependent on a combination of technological shifts, a changing world market and political changes. Soy production in the Pampa region in Argentina started to expand after GM soy was legalized in 1996, but it soon expanded in magnitude in other parts of the country as well, currently occupying approximately 22 million Ha, which is between 50% and 60% of all the cultivated land in Argentina (USDA, 2013). However, rather than being predicated on the entry of a new governing elite, it has generated a shift in economic elites. As its leftwing government has drawn its main leaders from the ranks of the Peronist party, it can hardly be considered a new political elite in Argentina. However, soy production has generated shifts in the power relations among agricultural producer groups. Although not completely displacing the traditional landowning elite, new groups related to agribusiness have gained significant influence in the governance of agricultural production. This group is composed of agricultural producers, utilizing a management model in which several individuals or companies have different roles in the system, from renting land from landowners to administering external investments and managing the total production (Benchimol, 2008). They run what is commonly called "agroenterprises", in which landowners, contractors and investment brokers are involved. Such agribusinesses agreements can take the form of investment funds, agroassociations (*pools de siembra*), financial trust coalitions and simple contract alliances, among others. The most recent attempt to quantify it argued that agroenterprises are responsible for about 70% of total grain production in Argentina (Barri and Wahren, 2010). Today the figure is probably higher.

At the same time as the soy expansion generated a new agricultural (but not necessarily rural) elite, the strained relations between the four governments of the Kirchners (two of Néstor Kirchner and two of Cristina Fernández de Kirchner) and the traditional agriculturalists contributed to the speed of the soy expansion. The main reason behind the conflicts was the increase in export taxes on agricultural products, particularly during the first government of Cristina Fernández de Kirchner. However, conflicts also arose due to the perceived lack of

governmental support for and interest in agriculture in general, due to lack of both predictability in "framework conditions" (including adjustments in export taxes) and technical support. This contributed to a weakening of the influence of the old rural elite (Zenteno Hopp, Hanche-Olsen and Sejenovich, 2015). Moreover, in a context characterized by high levels of uncertainty for many farmers, many of them either leased the land to agrientreprises for soy production or turned to soy production since its profitability was considered almost guaranteed over time (Calvo et al., 2011). While depending on transnational companies, first and foremost Monsanto for seed and fertilizer, there has also been a prolonged conflict between Argentinean farmers and the agricultural giant. Argentinean farmers first objected to paying royalties for the fertilizer Roundup Ready as Monsanto had failed to obtain a valid patent for it in Argentina, and later farmers opposed the payment of new royalties for the new soy seed BTRR2.

Initially it was also argued that GM soy would result in less environmental impact than conventional soy. It was argued that soy production would minimize soil cover loss due to the no-till method, and that the use of the herbicide glyphosate would prevent the use of other, and more toxic, agrochemicals applied in conventional production (Bindraban et al., 2009). GM soy soon acquired a privileged position among the nation's exports and also became a main source of governmental income. Currently the production of GM soy generates approximately one-tenth of the GDP and one-quarter of the nation's export value (Loman, 2013). The conversion to the GM soy model generated a net value of US$65,435 million for Argentina between 1996 and 2010, due to savings in costs and higher profitability (Trigo, 2011). This source of funding has been of key importance for the government's ambitious programmes of social redistribution. Added to this, the economic interest by national and international agribusiness companies explains the government's unwillingness to impose more ambitious environmental guidelines on GM soy production. Only very recently has there been a broader public debate due to increasing opposition against and conflicts related to soy production, exposing the severe soil degradation resulting from soy production and glyphosate's negative impact on human health, among other issues (Skill and Grinberg, 2013).

The role of knowledge and the contours of elite reorientation

However, we also see the contours of a third process: "elite reorientation", or, in other words, the shift in the dominating ideas of an elite.

Both Schumpeter and Weber emphasized the orientation and capacity of elites as a major factor in understanding the role of the state in development, rejecting that this could be directly inferred from their position in the capitalist economy (as the Marxists would argue). In recent Latin American history we have two major examples of such elite reorientation: the process of democratization of the 1980s and 1990s, and the neoliberal transformation in the same period. Neither processes of elite reorientation happened out of the blue. Rather, the new ideas achieved influence due to a crisis and exhaustion of prior models and a gradual shift in interests. Currently the seriousness of the environmental crisis, and the climate crisis more specifically, could open up space for new ideas brought about by new elite groups, the reorientation of old groups, or a new dynamic interplay between different elite groups.

Despite the numerous contradictions evident in the environmental policies pursued by Brazil's three leftwing governments (two under Luis Inácio Lula da Silva and one under Dilma Rousseff), in the Amazonian states of Acre and Amazonas a shift in elites and in the environmental policies pursued in these states occurred at the state level. Despite the differences (in size among other things), around 2009/2010, Acre and Amazonas were the least deforested states in Brazil, with small Acre having lost 14% of its original forest and Amazonas only 3% (Lemos and Silva, 2011). Our research found that this was closely related to a shift in elites occurring in different ways. The turning point in Acre was the coming to power of the PT candidate in 1998, whereas in Amazonas it occurred as a candidate linked to the old elites shifted towards a more environmentalist and less developmentalist strategy to distance himself from the old ruling elite in order to gain votes in the local elections of 1992 (Toni, Villarroel and Taitson Bueno, 2015). Thus the process at the local level has been very different from that at the federal level. At the federal government level an "elite settlement" between economic elites and rightwing parties, on the one hand, and elites of the leftwing parties, on the other hand, has led to the favouring of developmental goals over the environment (Arretche, 2013). In contrast, at the state level there has been some room for elite shifts through elite reorientation. The autonomy given to lower politicoadministrative levels in the federal model has thus been crucially important for the latter process.

Global initiatives, such as REDD, are also fostering a possible "elite reorientation" through the emergence of a new knowledge-based elite that is organized in wide and often transnational networks. These networks have been able to influence the attitudes and strategies of certain elites, although this has not implied a complete reorientation of old

elites (i.e. those linked to agroexport activities) or of government elites, particularly because of the centrality of resource extraction in economic growth in the region (Aguilar-Støen and Hirsch, 2015). The global REDD initiative was launched at the climate negotiations in 2005 but only gained political traction in 2007, when donor governments agreed to commit substantial economic resources to establish a fund that would pay developing countries not to deforest. The principle of REDD is relatively simple: it is based on the idea that it is possible to pay countries and communities for not cutting down their forests. However, the implementation of REDD is not so simple. Latin America is endowed with vast amounts of forested land but as a whole the region has the world's highest rate of deforestation (Hall, 2012). Because of that, much attention and efforts have been invested in trying to successfully develop REDD projects in the region. These projects are, to date, only demonstration activities that will allow implementers to understand how REDD would work on the ground. That means understanding how payments are to be implemented and to whom, how to monitor that the area covered by forest is effectively not deforested, and how to ensure that economic benefits are distributed in a fair manner among those that contribute to forest conservation and constitute a legitimate beneficiary of REDD. Since forests are valuable for a range of different actors, from forest-dwellers to drug cartels, control of forested land is a contested issue and thus establishing national or local REDD projects is a complex task. In addition, many valuable non-renewable resources, such as minerals and oil, are often located in forested areas and several governments in Latin America have declared extractive activities as being key to national economic development. REDD has attracted the attention of various and disparate actors, including environmental NGOs, research centres, extractive industry companies, indigenous peoples' organizations and international development agencies.

REDD is a broad and vague enough idea to allow different interpretations of it that can fit the goals of different actors (Angelsen and McNeil, 2012). This has allowed these actors to distinctly define the actions necessary to implement REDD at local levels. In the process, certain narratives, values and visions gain prominence and those promoting such ideas gain power to define how REDD should look in specific contexts. Controlling the production of knowledge seems to be a prominent strategy of different actors to position themselves in the REDD debate, particularly in the countries in the Amazon basin (Aguilar-Støen and Hirsch, 2015). The knowledge required to participate in the REDD debates is not just any type of knowledge. It has to

be maintained and strengthened through particular networks, in which different concepts and arguments are socially constructed and legitimated through complex processes that have produced new dominant forms of expertise and consultancy (Fairhead and Leach, 2003; Bumpus and Liverman, 2011). These networks that are coalitions of actors who share values, interests and practices can be conceptualized as elites insofar as they control key resources: the production and promotion of specific knowledge or forms to generate knowledge and access to policy-making forums. Ideas, values and resources circulate within networks, and as such the networks may set the limits or boundaries of how reality is to be understood or to set apart what constitutes expert and non-expert knowledge. A range of different private actors and companies support REDD activities, forming alliances and promoting certain models, particularly those that are positive to carbon markets. In this way, REDD is offering a new regime of profit-making possibilities in the trade of carbon offsets, but also in fostering the development of new forms of consultancy and expertise. REDD science-policy networks are influencing, although not necessarily reorienting, the position of other elite actors. For example, various transnational and national companies, such as mining and energy-producing companies, plantation companies, forestry companies and carbon-market companies, engage in REDD demonstration activities by funding specific projects. Since dominant REDD science-policy networks have ideological positions that do not conflict with the ideological position of corporations, it has been possible to establish alliances between them. But since resource extraction continues to be central to the economies of most Amazon countries (Bebbington and Bebbington, 2012), often at the expense of forests, the degree to which REDD elites can influence other elites is limited. Mining, gas and oil extraction are the most important activities to generate economic revenues for most of the countries in the Amazon basin. The development of infrastructure such as hydropower and road-building are also priorities for these countries. All these activities are, in most cases, planned to occur in forest areas. In addition, the agricultural frontier is expanding in many Latin American countries. Therefore we cannot affirm that REDD elites have a strong influence in the Amazon countries' broader development policy-making or in the national visions of development, but REDD elites have indeed been successful in engaging actors from the agricultural and industrial sectors in the funding of demonstration activities.

Taken together, the cases of Brazil and of REDD show that a shift in elites sometimes leads to more ambitious environmental goals and

regulations. Whether or not this happens depends on the degree to which new elites are able to influence the positions and views of old elites. Chapter 6 suggests that the views, aspirations and environmental orientation of elites are not homogeneous. It is conceivable that we will see the ascendance of elites in the future with aspirations of a more sustainable development policy and environmental governance. It is also necessary to remember that centre-left governments in Latin America won the elections thanks to the support of wide segments of the population, particularly the marginalized and subaltern ones. These governments depended on various types of alliance between different grassroots organizations and social movements. If these movements and grassroots organizations are able to exert some pressure on their governments to address environmental concerns in the future, we may see a shift towards more equitable and sustainable models of environmental governance. If popular mobilization continues to be crucial for maintaining leftist governments in power, at some point the environmental concerns of the population need to be addressed.

Conclusion

Back in 1977, Marxist scholar Fred Block rejected the possibility that a leftwing government in power could make a significant change to the productive structure of a country, as any government presiding over a capitalist economy inevitably has to care about the creation of employment and economic growth, and therefore would never counter the interests of the capitalists. Over the last decade we have seen a multitude of strategies applied by leftwing Latin American governments to overcome the constraints presented by old elites that are often also political adversaries. Although, judging from media reports, the relationship between the centre-left government and the old economic elites is strained, under the surface they are more often than not characterized by accommodation and consent than outright conflict. However, in the process there has been a gradual elite shift where groups that have benefited from the centre-left governments policies gradually gain influence at the expense of old rural and business elites. This has occurred in Argentina with the strengthening of agrienterprises; in Bolivia with the emerging soy elite; in Ecuador with the new cadres of technocrats in the ministries; and in a more incipient form in El Salvador with new elites related to ALBA investments.[3]

In addition to new governmental policies, we have found two factors to be of key importance to the emergence of new elites: knowledge

and technology. Controlling capital or politics without also controlling knowledge and technology has shown to be insufficient to dominate the development agenda and the environmental governance of it. Knowledge and technology can be "bought" by those who control capital, but this is only partly true because it is necessary to have the sufficient knowledge, relevant technology and appropriate attitude towards innovation to know where to invest in it. Also, obtaining and making use of these resources are long-term processes. The corollary to that is that groups that control knowledge and technology may also influence environmental governance to an extent disproportionate to their political position or economic resources, as we have seen in the cases of the REDD networks, and in a different way in the Ecuadorean Ministry of Agriculture.

This may have positive and negative implications for the environment. The control of knowledge can be an obstacle to better environmental governance, such as when it is used by a technocracy to pursue an agenda that pays little attention to environmental or distributional concerns, or when it is controlled by a transnational company as a means to strengthen its own profit generation. However, it can also be used to influence the agenda in a more sustainable way, such as has been observed in the case of, for example, El Salvador, where groups of environmentalists with high levels of technical education were included in the government. In spite of not having achieved the influence that they had hoped for, they did influence parts of the governmental agenda to become more directed towards adapting to climate change and avoiding new environmental catastrophes induced by intensive export agriculture. The emergence of what could be called a "new, environmental technocratic elite" was also observed in other countries, including Chile and Bolivia (Reyes, 2012; Høiby and Zenteno Hopp, 2015). This new technocratic elite differs from other historical groups of technocrats, not only by being unified by a different body of knowledge from, for example, the neoliberal economists that constitute the technocrats supporting the neo-liberal conversion. They also show a different attitude towards relating to non-elite groups. Many have been involved in environmental movements at local, national and transnational levels, and many stay in touch with communities through everything from frequent visits to membership of Facebook groups. Although their actual influence varies, their strengthening may lead to stronger environmental governance over time. Moreover, where the government favours party cadres over technically competent officials in important positions, the likelihood that such "new technocracies" emerge

diminishes as, for example, in the case of Argentina (Hanche-Olsen, 2013).

Yet it is impossible to ignore at least three "constants" in environmental governance in Latin America. One is the importance of global markets. During the last decade, Latin America as a region has made significant progress in a number of social indicators, but it has also reinforced its dependency on natural resource export, and therefore its vulnerability to changes in the global markets for a limited set of export goods. This is less so in Mexico and Central America than in South America, but across the region there is little in the way of a "structural transformation" towards a production structure dependant more on knowledge and innovation and less on cheap labour and natural resources. As noted by CEPAL (2014), without such a conversion, it will be difficult to sustain incipient processes towards a more just resource distribution, or to counteract the serious processes of environmental degradation.

The second "constant" is limitation in resources. For leftist governments with little support from, and often in conflict with, the economic elite, to stay in power and to implement ambitious programmes for societal transformation has required both to employ policies to strengthen the state and to confront the opposition from old elites. State-building has been an unavoidable priority for the centre-left governments in Latin America to be able to deliver strong programmes of resource redistribution to address historical inequalities, and in this way to lift millions out of poverty. Several strategies have been employed to face opposition from old elites: grooming new elites, confronting competing elites or allying with outside elites. Given that the international context has been very favourable for resource extraction, focusing on these sectors (particularly mining and agriculture) has allowed centre-left governments to increase their revenues and deliver their promises of resource redistribution. At the same time, larger revenues have permitted governments in Latin America to transform their relationships with traditional international elites (weakening their influence in domestic politics) and to enter into relationships with new international elites. In this context it can be said that leftist governments in Latin America have taken a pragmatic approach to be able to secure their position; this approach implies that, in development policy, economic revenues take precedence over environmental concerns. We can then affirm that the effects of the elite shift on environmental governance in Latin America have been limited thus far.

The third "constant" is the abyss between the traditional elite and non-elite groups in terms of the meaning given to nature and what

constitutes a just governance of it, in terms of both processes and outcome. Although, as we have shown, the elites go through processes of change that lead to episodes of "elite circulation" as well as "elite conversion", we still find elite groups across the region with a very limited understanding of the local environmental impact of developmental projects, the importance and meaning of resources such as land and water to rural communities, and what it takes to actually reach understandings across cultural and class divides. Without this, reaching more sustainable and just environmental governance in Latin America may still be far away.

Notes

1. This approach focused on the conditions for – and evolution of – a state with a monopoly on legitimate violence, and an institutional bureaucracy capable of implementing policies and controlling the masses (e.g. Migdal et al., 1994; Evans, 1995). Such a state, in which a given set of institutions' right to tax and demand loyalty in return for protection and the extension of benefit are no longer questioned, is, for example, considered to be a precondition for the high-growth policies and business–state relationship of the East Asian developmental states (Amsden, 2001) as well as the more historical examples of development, such as that of Europe (Tilly, 1992).
2. He argued rather that "Between socialism as we defined it and democracy as we defined it there is no necessary relation" (Schumpeter, 1976: 284).
3. The tendency observed in El Salvador would probably have been more pronounced had we included Nicaragua and Venezuela in the study.

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6

Water-Energy-Mining and Sustainable Consumption: Views of South American Strategic Actors

Cristián Parker, Gloria Baigorrotegui and Fernando Estenssoro

Introduction

Mining activity has undeniable environmental impacts due to the nature of its operations, processing plants and foundries. Mining companies proclaim their environmental responsibility by implementing policies that limit environmental risk and impact, while also applying new technologies and production processes that are more respectful of the environment. The degree of efficacy of these sustainability measures and the degree to which companies voluntarily ensure environmental care cannot belie the fact that – no matter what – mining activity has and will always have environmental impacts. There are two major points of view about the subject, according to Whitmore (2006). On the one hand, there are the views of companies – that is to say, the actors who control the mining bulldozers and claim to ensure that everything goes well and that mining is, or can be, sustainable. On the other hand, there are the views of those who are affected by mining activity, such as the communities, peasants and indigenous peoples who are displaced without proper consultation, who suffer illnesses, and whose lifestyles, health and environment are impacted.

This chapter will not address the mining problem from the conventional perspective of whether or not mining is sustainable. The majority of the socioenvironmental conflicts that arise around mining are focused on this problem.[1] We refer to the fact that mining consumes large quantities of water and energy and is one of the most widespread productive activities. As AngloGold Ashanti's sustainability report declares,[2] mining activity has a direct impact on the environment

because it requires access to land, water and energy, scarce resources that should be shared with the communities in which it operates. Mining processes also require "considerable amounts of water" and "significant quantities of energy" in order to function.

The sustainable consumption of strategic natural resources such as water and energy in South American mining is a key theme that challenges environmental governance, but it is rarely studied by the social sciences. This is especially true in the case of the mining sector. Since the 2000s, the mining boom has resulted in expanded investment in all of the countries in the region, in many cases generating socioenvironmental conflicts (Svampa and Antonelli, 2009; Teijlingen, 2012). And this trend is likely to continue in the coming years.[3]

The research that we present here looks into the different social representations[4] of strategic actors with respect to the sustainable consumption[5] of energy and water in the mining sector. These social representations of environmental issues are fundamental to understanding the social and institutional practices aimed towards sustainable consumption and environmental governance (Hajer and Versteeg, 2005). With strategic actors we refer to members of elites who have the capacity for long-term influence, and who may come from the private sector or the public sector as well as from organized civil society. We include strategic actors who are linked to a few paradigmatic mining cases in four South American countries: Argentina, Chile, Colombia and Ecuador.

Problem under study: The water-energy-mining complex

The main questions of the study are related to the configuration of the social representations – of an institutional nature and pertaining to strategic actors – of water and energy, and actors' views of nature and development. In order to understand the viability of forms of governance for the sustainable and equitable consumption of water and energy in the cases studied, we want to see which different representational models can be observed and on which points they coincide. As a result of climate change (PNUMA, SEMARNAT, 2006), nature – and in particular water and energy – is increasingly understood to be of strategic significance (Bruzzone, 2010; Sunkel, 2011). The aspiration to capitalist economic growth makes these sources highly sought by both Latin American countries and emerging powers.

In the economic interpretation of development, energy and water are vital resources for human life and production, and they cannot be separated from the environment. From this perspective, the strategic

character of water and energy is linked to their availability for use in productive processes. However, mining is an economic activity that proportionally uses more water and energy and, for that reason, it is more controversial in environmental terms (Norgate and Haque, 2010; Superneau, 2012). Another conceptualization of water and energy comes from an ecological perspective, from which they are not – in a strict sense – economic "resources". They are rather "common goods", and their use has a greater value than simply their exchange value. In this chapter we will consider – from a holistic perspective – water, energy and mining as a complex of interrelated parts[6]; a complex that, in recent years, appears to have been critical to complying (or not) with ecological and environmental principles in Latin America.

Just as energy is required for the consumption of water, so is water for the production of energy (Wu et al., 2013). As both resources are indispensable for mining, it cannot function without the industrial consumption of water and energy (Mudd, 2008). For this reason the mining sector faces the huge challenge of resolving the problem of its high water demand without affecting the availability of water for agriculture and for the urban population, and without increasing pollution (Pizarro, 2012). As for its growing energy demand, the mining sector should seek to satisfy it with maximum efficiency and without increasingly relying on polluting energy sources (e.g. electricity generated by coal, gas or oil) (Zuñiga and Ana, 2009). Along these lines, contentious scenarios lay ahead for every strategic actor interested in defending their legitimacy. In other words, the water-energy-mining complex continues to form a Gordian knot of environmental governance in the mining sector in Latin America and beyond, throughout the socioeconomic structure.

Studying the representations of strategic actors

We have sought to study the social representations of natural resources and their sustainable consumption among actors and institutions with the capacity for leadership and influence in long-term public policies related to environmental governance. Our main topic of concern is the sustainable consumption of water and energy in the mining sector in Argentina, Chile, Colombia and Ecuador.[7] In these countries, in distinct stages and with different emphases, metal mining has become one of the pillars of their development policies. Here we focus on the network of actors (Bebbington, 2012) involved in cases of paradigmatic mining projects (some in the exploration phase, most in the operating phase) in these four countries, as shown in Table 6.1. In all countries,

Table 6.1 Reference cases

Country	Argentina	Chile	Ecuador	Colombia
Projects	Cerro Vanguardia[1] La Alumbrera[2]	Mantos Blancos; Manto Verde; Soldado; Chagres, Los Bronces[3]	Fruta del Norte[4] Mirador[5]	La Colosa[6]
Companies	AngloGold Ashanti (South African) and FormiCruz (Argentinean) Xstrata (Swiss), Goldcorp and Yamana Gold (Canadian)	Anglo American (British)	Kinross Gold (Canadian) Ecuacorriente (Chinese)	AngloGold Ashanti (South African)

Notes
1. Cerro Vanguardia is a gold and silver mining project in Santa Cruz province.
2. Bajo de la Alumbrera, located in Catamarca, is one of the major metal deposits of copper and gold in the world and is being exploited by means of open pit mining.
3. Anglo American has several, mostly copper, open pit mines in Chile: Los Bronces in the Metropolitana region, Mantos Blancos in the Antofagasta region, El Soldado in the Valparaíso region, Mantoverde in the Atacama region and Collahuasi in the Tarapacá region.
4. The Fruta del Norte gold and silver deposit is a Kinross Gold project that quickly entered into conflict with the Shuar communities. It signed an initial agreement in 2011, but the resistance as well as the company's non-conformity with government regulations has caused Kinross to withdraw from the project.
5. The El Mirador Project in Zamora Chinchipe province, in the Cóndor mountain range, is a copper deposit that is in exploration and its exploitation phase has been approved. It is one of the largest mining projects approved in recent years by the Correa government, not without pressures and conflicts.
6. The La Colosa Project in the Tolima department is the second-largest gold deposit discovered in Colombia. It is a subject of important debate in Colombia because of its social, environmental and economic implications.

socioenvironmental conflicts have been reported. In Colombia and Ecuador, these are primarily related to processes of exploration. In Colombia, the La Colosa project in Tolima has encountered serious resistance from local communities. A similar situation occurred in Ecuador in the Fruta del Norte project, which has since been suspended. In Chile the mining project Doña Inés de Collahuasi, which is partly owned by Anglo American, has received complaints from surrounding communities about water problems, and its current expansion phase is

controversial. The Alumbrera project in Argentina received the bulk of its complaints when overflows of its mineral pipeline and tailings dam contaminated the Vis-Vis River and the valley's agricultural communities.

The interdisciplinary strategy of this study relies on mixed methods. It is based on a literature review, analysis of primary and secondary sources of an institutional nature, and 65 semistructured interviews with members of so-called strategic actors in the mining sector: CEOs and high executives, senior government officials, political leaders, experts and leaders of NGOs, including community and environmental organizations. The discourse analysis (van Dijk, 2008) was based on semantic techniques. We used a structural discourse analysis, taking into account the overall logic of semantic speech articulation, narrative structures, semantic axes and paradigmatic axes, but focusing on the semiotic square (Greimas, 1966).

Institutional views and actor views

The theoretical and institutional frameworks that have been developed in regard to the industrial consumption of water and energy in the mining sector come from various sources, primarily from international mining institutions and experts. These expert discourses and institutional discourses of companies, and of public and private institutions, show that the concept of efficiency – as applied to water and energy – is the most developed, extensive and referenced. This includes a set of good practices, procedures and technologies that point to an optimization of scarce resources in the diverse phases of the mining lifecycle. The concepts of ecoefficiency (WBCSD, 2013) and natural capitalism (Rábago, Lovins and Feiler, 2001) represent different perspectives on ecological interrelationships between resources. These two concepts have also been applied to the consumption of water and energy in mining, but they are almost inexistent in the discourses of the individual actors from the four case studies.

In regard to the efficient consumption of water and energy, and the incorporation of renewable sources of energy in mining, limited information is generated by corporate discourses. The production of knowledge about the consumption of water and energy in mining is relative to the degree of development of the mining sector in each country, being greater in Chile than in the other countries studied. Institutions such as the International Council on Mining and Metals (ICMM) – the most important corporate regulatory body – have developed a set of

principles for sustainable mining development (MMSD, 2002; ICMM, 2003). However, only one of ICMM's 46 subprinciples refers to the responsible consumption of water and energy in mining. In the reference cases studied, the relevance of the consumption of water and mining is a theme of a "high level" and experts. It does not, however, seem to be picked up by other social actors. Similarly, references to water and energy consumption in the mining and environmental legislation of the countries studied are scarce (OCMAL, 2012). In the rules and regulations for environmental evaluation and monitoring, these issues are of secondary importance.

In short, the analysis of institutional discourses elucidates the importance of the principles and good practices driven by transnational companies. They emphasize the role of international financial agencies and institutions, such as the International Finance Corporation (IFC, 2012), and principles of environmental evaluation and report, such as the Global Reporting Initiative (GRI, 2011) and BellagioSTAMP (IISD and OECD, 2009).

This study underlines the existence of basic social representations that favour environmental considerations. The interviewed actors in the four countries were asked about the environment, climate change, development models and the relationship of man with nature. They responded in a few typical patterns that show their views on water and energy consumption. Some stress the role of policies of social and environmental responsibility of the mining companies and institutions, reflecting influential discourses at local and international levels. The alternative discourses, which oppose mining projects, resort to interpretational codes derived from a radical reconceptualization of the consumption of water and energy. They focus on their uses, meanings and valuations as associated with the notions of justice, and social and environmental rights.

The statement against which interviewees had to declare their preferences is taken from the mainstream discourses in public policy, saying that " 'Sustainable development' in the context of my country's needs would be an economic growth model that mitigates negative environmental and social impacts."[8] The responses were primarily "strongly agree", which dominated among senior public officials and businessmen, and "disagree", which dominated among environmentalists and (college-educated) experts. We should take note of the emphasis on the idea of economic growth in this proposal, although it is certainly moderated by the idea of mitigating environmental and social impacts. Our results indicate that the concepts associated with growth that

still dominate in public political and international institutional discourses are assumed by businessmen and experts, while even most politicians and some NGO leaders agree (77% of all interviewees were in agreement with the statement). Despite a common terminology, social representations of the environment and climate change, technology, the man–nature relationship and development models point to divergent positions. Yet there is a nuanced vision of the future. Asked about whether the future of the country would be clean or polluted, 54% declared that their country will be cleaner and 46% declared that it will be more polluted.

Different views and discourse models

The interviews of strategic actors reveal important discourse structures, which can be classified into four models that express specific views on the consumption of water and energy in mining. However, this specific issue is linked to broader views related to mining and the national development model, which generate distinct perspectives on the environment and environmental policy (Dryzek, 2005). The aim of our analysis was to discover the elementary structures of the meaning in the discourses, followed by a linguistic and extralinguistic (social, political, cultural) interpretation of the discourse. The main elements of the four models are schematically presented in Table 6.2. These models are empirically reconstructed, built semantically through inductive and deductive steps.

Model 1: Indispensable but responsible mining with maximum efficiency

The first model assumes that the consumption of water and energy should be efficient within the context of responsible mining. Its point of departure is the unconditional affirmation of mining. In regard to water, it seeks to make its consumption efficient and to optimize its reuse:

> It seeks to reuse water, to utilize products that are biodegradable so that there is no pollution.[9]
>
> (Argentinean senior executive of a state-private mining company)

> The use of water in mining is so serious . . . that there is already technology to achieve it . . . (de-pollution).[10]
>
> (Ecuadorian senior executive of a transnational mining company)

Table 6.2 Overview of signifying content in the discourse models

Themes	Discourse models			
	1	**2**	**3**	**4**
Water consumption	Efficiency and reuse	Efficiency, reuse and responsible consumption	Efficiency and recycling	Threatened water ecosystems
Energy consumption	Efficiency to reduce costs	Efficiency and responsible consumption	Efficiency and recycling	Evaluate carbon footprint
Renewable energy	Insufficient but complementary	Opening up	Indispensable	Change the overall energy grid
Mining	**Indispensable**	Necessary	Critical but necessary	Not sustainable, threatens people and ecosystems
Development	Growth	Sustainable growth	**Sustainable development**	**Other development, alternative development**
Technology	Fundamental	Optimal technology	Necessary, anti-technocracy	Green technologies
Management	Efficient	**Integrated management**	Monitoring, control	For change
Regulation	Market	Mixed forms and state regulation	Institutional control	Human security and life
The state	Should take step back	Subsidiary with clear policies	Should intervene, participatory citizenship	Should promote total change
Environmental responsibility	Responsible mining	Positive vs. irresponsible mining	Environmental control	Population and local communities

The emphasis is on the fact that water as a resource has a low rate of consumption and is reused through technology. This discourse model seeks forms of efficient water and energy consumption in mining through its rational and balanced use.

> I return to the same issue, the consumption of water, the consumption of energy . . . The goal is to achieve that balance, but if you are a consumer the balance is about the question of how to mitigate consumption.[11]
>
> (Colombian senior executive of a transnational mining company)

The claim is made that the use of water in mining is considerably less than in other activities because of the funnel effect: large quantities of water are manipulated but little is consumed; recycling is very common. This also happens in regions where water resources are abundant (the tropical areas of Ecuador and Colombia, and even in some mountainous areas of Argentina). Water is accumulated in pools and recycled, thus a small amount of water is consumed and its quality is controlled.

> In other areas where water is consumed (agriculture), much of the water continues to evaporate.[12]
>
> (Chilean entrepreneur of the National Mining Society)

As for energy resources, this model considers them to be an absolute necessity for mining to function, but recognizes that they are a problem, and even a threat to competitiveness, given their cost. In particular, Chilean and Colombian interviewees problematize the issue of energy while the interviewees from Argentina and Ecuador tend to have a more optimistic perspective. The point of departure is that metal mining is recognized as intensive in terms of energy use, primarily derived from fossil fuels or hydroelectricity. However, this rhetoric downplays the volume of energy consumed.

> If mining consumes energy, then the price of energy should take into account the environmental impacts of generating that energy. Therefore, having paid your energy bill, you are fulfilling your role as a responsible consumer.[13]
>
> (Ecuadorian senior executive of a transnational mining company)

In this discourse model, the energy issue is commodified: it is necessary that the markets operate competitively.

> What is stronger in mining and more problematic is electric energy, this issue is very critical . . .[14]
>
> (Chilean senior official in the mining industry)

> Various projects . . . have been cancelled because of the high costs of energy . . .[15]
>
> (Chilean senior executive of a transnational mining company)

Furthermore, this model fits into a neoliberal conceptual framework that attaches greater relevance to the market than to the state.

> The market (should regulate), all of us want the market. I prefer the market . . .[16]
>
> (Argentinean senior executive of a transnational mining company)

Assuming that mining requires considerable energy for its processes, facilities and transportation, this discourse model recognizes that most energy comes from fossil fuels. Renewables, they claim, are not the best alternatives because they are expensive and are not processed continuously. Energy from fossil fuels (including electricity generated by gas and coal) is more convenient because of its low price. This discourse model proposes responsible mining that manages to establish a balance between the pursuit of profitability, the environment and social needs: in other words, a legitimate corporate mining activity. It privileges a market environmentalism that prioritizes private initiative but is aware that it should take care of certain environmental and social externalities. It therefore proposes the "rational use of resources", "responsible mining consumption" and "responsible growth".

Model 2: Integrated management, regulation and responsible consumption

This second discourse model accepts mining as an important development tool. However, it also incorporates reservations about its negative environmental impacts, which can be repaired through proper regulation and institutional norms.

> It is a multiplying activity . . . the local population had nothing to do in San Juan, but now there is mining that enhances other activities.[17]
>
> (Argentinean expert and consultant on environmental issues)

Water and energy consumption are represented by a semantic axis of efficiency/inefficiency, where "efficient practices" oppose "inefficient consumption". Resources are scarce and often have high prices, especially energy, which is why efficiency must be promoted.

> Being high-tech companies (big mines) . . . they should be as energy efficient as possible.[18]
>
> (international expert)

The core idea is "efficiency". Unlike the previous model that emphasized technology as a transforming agent, here the emphasis is placed on integrated and efficient management. Its goal is the responsible consumption of water and energy. This "responsibility" should be assumed by private economic agents, but in case this does not happen the subsidiary state should determine its conditions.

> It is the responsibility of the companies as much as of the authorities, how to develop, manage and implement the projects.[19]
>
> (Argentinean expert and environmental consultant)

> With respect to water . . . good mining is technically realized, economically profitable and it ensures the just participation of the Ecuadorian state, a socially responsible mining and mining environmentally managed with strict standards.[20]
>
> (Ecuadorian director of state-owned mining company)

This discourse model favours regulation through "pricing mechanisms", among others, that stipulate mixed policies to enable the proper functioning of the market and forms of state regulation (environmental evaluation, laws and norms, effective fiscalization). The model proposes the establishment of clear energy policies that frame energy consumption in mining. This model seeks to "regulate" the energy grid with "rules" that are associated with "clear environmental policies". These "clear policies" must be given within the framework of a subsidiary state. The state should then intervene to adequately regulate and make the market function conveniently by establishing conditions for private investment in the form of laws, regulations and institutions.

> The incentives are well placed when the decision maker has internalized – to the greatest extent possible – all of the potential (environmental) costs that energy use represents.[21]
>
> (Chilean senior official and ex-minister of the state)

Regulation requires planning, evaluation and control of mining activity. From this perspective communities have to be prevented from deepening their opposition to mining projects and impeding the functioning of institutions and regulations. A clear policy that involves "integrated regulation" is fundamental for "legal certainty" to exist and to incentivize mining investment. The responsible consumption of water and energy in mining must point towards "sustainable growth".

In this discourse model there are some views and positions that are critical of the rationale of those who want to grow at any cost. It seeks to promote responsible growth at a responsible growth rate. For instance, an international expert recognizes that this is not necessarily a consistent practice of big mines, where emphasis is placed on the general discourse about CSR. This is not necessarily linked to a vision of integrated, efficient and responsible management of water and energy. In summary, this model generates a clear sense of the consumption of water and energy in mining with explicit central concepts, such as efficiency, recycling, integrated management and responsible consumption. Its second focus is on establishing the institutions and conditions that allow for better regulation and for the establishment of certain regulations that guarantee private investment and frame the responsible consumption of water and energy in mining.

Model 3: Sustainable development and institutional control

This model makes strong statements about water and energy consumption in mining, focusing on the more political concept of sustainable development. It assumes that mining has negative environmental and health effects. This gives rise to various degrees of criticism of mining, but it agrees that – under certain conditions – mining is a necessary activity.

> I think that (mining) is worth the effort because the activity, if well developed, can be done with a relatively low level of environmental impact. I am talking about a mining at a scale . . . (that is) more human . . .[22]
>
> (Argentinean politician, advisor in Congress)

In this discourse, mining is problematic due to contamination from heavy metals. This is the origin of the need for efficiency and recycling in water and energy consumption, and – given the environmental crisis – the need for environmental control that guarantees sustainable mining.

> In the case of water . . . it must be addressed through strict control over available resources.[23]
>
> (Chilean politician, representative of the center-left)

> . . . it should be, as I say, with the least environmental impact.[24]
>
> (Ecuadorian politician, progressive Congressman)

However, this control and monitoring supposes the existence of a state that clearly intervenes and regulates the market, and a democratic citizenship that participates, monitors and combats corruption. As for energy, the fundamental semantic axis resides in the contrast of "carbon energy" with "renewable energy".

> And in Chile . . . the energy grid is overly carbonized.[25]
>
> (Chilean politician, representative of the left)

> Our indigenous discourse has always been to defend the rights of nature . . . For that reason the president has decided to change the energy grid, for example from thermoelectric to hydroelectric energy . . .[26]
>
> (Ecuadorian indigenous leader, progressive representative)

In summary, this model is based on a political proposal of sustainable development, which criticizes the environmental impact of mining but includes mining as a factor of development. It subjects mining to controls, rules and regulations, and seeks to encourage the sustainable consumption of water and energy by promoting efficiency, recycling and a transition to renewable energy, including this transition within the mining sector itself. It proposes sustainable development with the clear intervention of the state in order to guarantee a market with clear and competitive rules. It intends to combat monopoly and corruption, and to stimulate citizen participation. In short, water and energy consumption is perceived as a political problem and not only one of technical management.

Model 4: Alternative development for the protection of common goods

This discourse model departs from a critique of the environmental consequences of mining. It represents "immense risks", "environmental destruction", "water pollution", "wars" and even "death".

> Mining is non-viable or incompatible with the life of many human beings…[27]
>
> (Chilean environmental NGO leader)

> No mining is clean – it incites serious problems; the pollution is incredible.[28]
>
> (Ecuadorian senior official, ex-Minister of State)

The main semantic axis that stimulates the discourse is "life" versus "death"; mining has become "incompatible with life". Human life and nature would be in danger: peasants, indigenous and communities as well as ecosystems would be threatened.

In this discourse, the "rights of nature" are inextricably linked to the human rights of the affected populations, the communities and the indigenous people. Natural resources in this discursive view are meant for common use related to the rights of the community (residents, indigenous, etc.) and of society (the state). They are semantically disjointed from exchange values (the mining market), and should be neither commodified nor privatized. In general, the texts speak of the water-energy-mining complex as a whole, in sociotechnical and in sociopolitical terms. According to this view, as mineral reserves decrease, the intensive consumption of water and energy further increases. While the global mineral demand increases, the pressure for more intensive forms of production (in terms of capital employed) grows, along with policies to raise productive efficiency and efficacy in order to achieve maximum "competitiveness" and profitability in the global metal mining market.

In general, this discourse model goes beyond the references to specific issues such as water management and energy efficiency in terms of industrial mining consumption. Instead, concepts of greater abstraction, such as "ecosystems" and "carrying capacity", are used. The interviewees who fit into this model claim that both mining companies and the authorities have agreed to water consumption that is greater than nature's "carrying capacity", and that "overconsumption" of natural resources is fostered by the "extractivist model".

> I insist, we should put the little resources that we have left (water and energy) towards alternatives for the future, not towards satisfying the needs of such a small percentage of the population . . .[29]
>
> (Argentinean leader of an environmentalist assembly, when referring to gold mining)

As for consumption, the discourse associates it with the "extractivist model" and opposes it to "another development" that is "non-consumerist". The latter is a mode of production that relies on mining "for the bare necessities" and that develops from values such as "solidarity" instead of "competitiveness".

> We do not call them "natural resources", but rather "common goods".[30]
>
> (Argentinean environmental leader)

With regard to energy consumption, this discourse model clearly favours the use of renewable energy, inclined towards non-conventional renewables but especially insisting on thinking about the global energy system in a different way.

> We are the country of the sun, the country of water, here we have potential and we have possibilities to generate a type of energy other than oil.[31]
>
> (Ecuadorian leader of an environmental NGO)

Compared with mining megaprojects, local projects with renewable energy at a "human scale" are favoured in the context of another (post-oil) energy system: hydroelectric energy and/or solar energy projects that can be developed along with communities and local governments. In that way, they could overcome the megaprojects' overconsumption of energy and water. There is talk of generating conditions so that the new mining projects would have a reduced "ecological footprint", "water footprint" and "carbon footprint". Perceptions of the intergenerational and long-term environmental impacts are present in this discourse model. It has strong Utopian connotations, an ideal that is inspired by values such as the "good life" and ecodevelopment from empowered local social actors.

In summary, this discourse model formulates social representations of water and energy consumption in the mining sector from a codification of meaning that proposes a systemic change with communities,

especially those of the indigenous, as main points of reference. It is a critical look at the current development model and public policies, including those of the "progressive" governments. It advocates a change in capitalist modes of production – encouraging citizen participation, and decentralized and self-managed forms of production – with a clear preference for non-conventional renewable energy. In general, the alternatives to water and energy consumption in the mining sector are subordinate to issues of a greater magnitude. Mining should be rejected when it affects regions that are rich in biodiversity, water resources and ecosystems. This includes the risk of utilizing excessive amounts of water and energy.

Conclusions: Governance of sustainable water and energy consumption in mining?

The interviews reveal that there is a consensus of "environmentalist" language with regard to common issues. Corporate environmental responsibility, protection of and care for the environment, concern about water and energy consumption, and an orientation towards sustainable development are mentioned as necessary by all interviewees.[32] But beyond the discursive rhetoric, deep code analysis reveals very different and even contradictory concepts about the following subjects: the environment, the responsibility of strategic actors for resources such as water and energy, the role of the government, and the water-energy-mining complex, which ultimately reflects different worldviews and *epistemes* about the relationship of man with nature.

In general, we observe that these different discourses are set forth and projected at different scales (transnational, national and local) and levels (business, government and politics, and civil society), and that there is little room for dialogue. They maintain positions in the social structure of elites: the first model is set forth mostly by CEO and high executives, and some senior government officials; the second model is affirmed by experts and also by senior officials; the third model is set forth by politicians and experts (but is slightly more important among politicians); and the fourth model pertains to environmental leaders and some politicians.

The consumption of water and energy in mining, seen in the light of the analysed discourses, is not an exclusively technical subject. The worldviews, linked to the social positions and interests of stakeholders, frame patterns of action and have an impact on the way in which the sustainable consumption of natural resources is represented. But

they go beyond that because of the obvious practical consequences that they have and will have in social and political aspects. The first two discourse models have a technical bias (hard technologies and management technologies); the third and fourth discourse models have ideological-political biases, the last being traversed by ecological worldviews.

From the perspective of environmental governance, the positions behind the models point at disagreement. They will be a great source of conflict to the extent that some defend the thesis of economic growth, taking ecological factors into account only as secondary externalities (positions found in the first model). Others take an alternative stance, proposing an ecological perspective that focuses on avoiding economic growth and overconsumption in the neo-extractivist Third World (positions found in the fourth model).

The analysed discourses, with few exceptions, do not take long-term environmental risks into account. The central grid of this discursive logic is the capacity to control and intervene in water and energy consumption in mining, through technocratic (first model), normative and institutional (models two and three), or political-environmental (models three and four) means. The abstraction of the accumulative and latent effects of the long-term environmental impacts of the abovementioned consumption is proof that the autonomized effects of sociotechnical processes as a result of the increased extractive economy in the region are unknown.

Our study of discourses confirms that most of the stakeholders who are more likely to defend the expanded reproduction of the water-energy-mining complex – as the basis of the socioeconomic development of the region – do not take responsibility for the international and global implications of local environmental behaviour. The majority of these actors do not think in terms of a long-term global horizon. Consequently, the problems of climate change and the decisions that they implicate in terms of energy and water policy are considered without taking into account the reflexivity of local social processes in overall environmental risks. The structural positions of these stakeholders in developing countries, in the periphery of the world system, thus condition discourses with respect to these global implications.

In this chapter we first presented the problem of water and energy consumption in the mining sector, situated within the water-energy-mining complex. We sought to clarify linear, sectorial and reductionist perspectives and to approach a perspective that integrates synergies among discourses, rules, technologies, institutions and interpretations

both diverse and contentious elements of environmental governance. The majority of the discourses ignore these interrelationships. Therefore the deeper significance of the overconsumption of resources, from which future scarcity of water and energy as well as consequences of climate change are expected, does not seem to be present in the majority of the analysed discourses.

In view of the transition towards more sustainable patterns, it is important to note that the first and second discourse models are associated explicitly with a confidence in technological innovation. The third and fourth model, on the other hand, introduce a more political and ecological logic in their vision of resource consumption in mining. The considerations about the intensity of use of water and energy resources in mining, as well as the technological structure with which they are associated, should be considered simultaneously as integrated systems that assume social, political and ecological connotations. The analysis of the processes of technological innovation linked to the shift towards sustainable consumption of water and energy in mining cannot neglect the associated social and political variables. In addition, this study of social representations of water and energy consumption of strategic South American actors demonstrates the recent increase in environmental consciousness.

In general, we observe that there is a struggle for legitimacy going on between conflicting discourses. The contradictory positions are opposite poles in a space of dialogue that should be promoted by a public policy that seeks environmental sustainability and resource governance. The recognition of the conflict of interests and views, and the discourse models with divergent positions – whose possibility for dialogue is still an open question – clearly demonstrate that there is a series of challenges ahead for environmental governance and for achieving sustainability in the extractive industries.

Notes

1. See the Environmental Justice Atlas of the EJOLT Project at http://ejatlas.org/
2. See http://www.anglogoldashanti.com/en/Pages/default.aspx
3. In accordance with the Center for Copper and Mining Studies (Cesco), with headquarters in Santiago, Latin America will become the most important region in the world for attracting investments for mining development, with a record number of US$327 billion between 2011 and 2020. See the Metals Economic Group (2013).
4. We understand social representations in accordance with Höijer (2011) and Moscovici (1981).

5. For more information on sustainable consumption, see Parker et al. (2012).
6. This refers to the mining-energy complex (Baker, 2012; Sharife and Bond, 2012). We have expanded this to the concept of the water-energy-mining complex from the sociotechnical and sociopolitical perspective. In South America, as is also shown in the case of South Africa (Sharife and Bond, 2012), it is furthermore a structure of power through which the elites have historically appropriated those resources.
7. For information about the mining sector in Argentina, see Svampa and Antonelli (2009); Walter and Martinez-Alier (2010); Baigorrotegui, Parker and Estenssoro (2014); in Chile, see Newbold (2006); in Colombia, see Garay (2013); in Ecuador, see Bustamante and Rommel (2010); van Teijlingen (2012).
8. "El 'desarrollo sustentable' en el contexto de las necesidades de mi país sería un modelo de crecimiento económico con medidas de mitigación de los impactos ambientales y sociales negativos".
9. "se busca reutilizar el agua, se busca utilizar productos que sean biodegradables de manera tal que no exista contaminación".
10. "el uso del agua en la minería no es tan grave . . . ya existe la tecnología para lograrlo . . . (la descontaminación)".
11. "Vuelvo a lo mismo, el consumo de agua, el consumo de energía . . . El objetivo es lograr ese equilibrio, donde si usted consume el equilibrio es ¿cómo mitiga ese consumo?".
12. "en las otras áreas (agricultura) que consumen agua, se sigue evaporando mucha agua".
13. "Si la minería consume energía, pues en el precio de la energía debe estar considerado los impactos ambientales de generar esa energía. Por lo tanto, habiendo pagado su factura de energía, está cumpliendo con su rol de consumidor responsable."
14. "lo que es más fuerte en la minería y es más problemático, es la energía eléctrica, ese tema es bastante crítico . . . ".
15. "varios proyectos . . . se han estado cancelando por los altos costos de la energía . . . ".
16. "El mercado (debe regular), todos queremos el mercado. Prefiero al mercado . . . ".
17. "Es una actividad multiplicadora . . . el sanjuanino no tenía qué hacer en San Juan, en cambio, hay desarrollo minero que potencia otras actividades."
18. "siendo que son empresas de alta tecnología (grandes mineras) . . . deberían estar siendo lo más eficiente energéticamente posible".
19. "es responsabilidad tanto de las empresas como de las autoridades, cómo desarrollar, cómo manejar, cómo hacer el implemento de los proyectos".
20. "en lo que concierne al agua . . . una buena minería que sea técnicamente realizada, económicamente rentable y que garantice una justa participación del Estado Ecuatoriano, una minería socialmente responsable y una minería ambientalmente manejada con rígidos estándares".
21. "Los incentivos están bien puestos cuando el que toma la decisión, tiene lo más internalizado posible todos los costos (ambientales) que representa el que use energía."

22. "Creo que vale la pena (la minería) porque la actividad, bien desarrollada, puede hacerse con un nivel de impacto ambiental relativamente bajo, o sea, hablo de una minería a escala . . . más humana . . . ".
23. "En el caso del agua . . . tiene que ser abordada a través de un control estricto y eso con los recursos disponibles".
24. "debe ser como digo con el menor impacto ambiental . . . ".
25. "Y en Chile . . . la matriz energética está demasiado carbonizada".
26. "Nuestro discurso indígena siempre ha sido defender los derechos de la naturaleza . . . Por eso también el presidente ha decidido cambiar la matriz energética, por ejemplo de energía termoeléctrica a energía hidroeléctrica . . . ".
27. "está siendo inviable o incompatible la vida de mucha gente con la minería . . . ".
28. "Ninguna minería es limpia . . . ocasiona gravísimos problemas, las contaminaciones son increíbles."
29. "Insisto, los pocos recursos que nos quedan (agua y energía) debemos emplearlos en alternativas para un futuro, no en satisfacer las necesidades de un porcentaje tan bajo de la población . . . "
30. "nosotros no les llamamos 'recursos naturales', sino 'bienes comunes' ".
31. "Somos el país del sol, el país del agua, aquí tenemos posibilidades y tenemos posibilidades de generar otro tipo de energías que en términos de petróleo."
32. This subject is nothing new. Beck observed – in his analysis of the subjectivity of politics since the 1980s, and then accelerated since the collapse of the Berlin Wall – the environmental concern for a threatened world that haunted Europe. Beck said that this concern, which "united conservatives with socialists . . . is only appearance, programmatic opportunism, perhaps occasionally an authentic reassessment" (Beck et al., 2001: 34–35).

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7
Overcoming Poverty Through Sustainable Development

Héctor Sejenovich

Introduction

Latin America is home to alarming poverty rates and the greatest inequality gap in the world (ECLAC, 2010). The concentration of wealth has disadvantaged local populations and their needs, while simultaneously driving the degradation and destruction of natural resources. This process has rendered serious implications for climate change (IPCC, 2007; Sandberg and Sandberg, 2010). While economic constraints are perhaps the most important aspect of poverty, they are only one of many that impede the personal development of the population (Cimadamore and Cattani, 2008; Cimadamore and Sejenovich 2010).

Latin America accounts for only 8% of the world's population, but it is home to a significant portion of the planet's natural resources. This includes 46% of rainforests, 23% of forests and savannahs, 30% of freshwater (from a stable potable source), 30% of permanent crops, 23% of arable land, 17.7% of grassland and 16% of cattle-ranching land (Sejenovich and Panario, 1997). At the same time, as a geographical area it has shown significant industrial, infrastructural and financial development. This means that it has the potential to improve its productive activities in order to meet the needs of the population. However, there is a significant degree of social exclusion and poverty due to systematic disparities in income, possession of resources and power. While the rhythm of productive development has kept momentum, so has the destruction of natural resources and unsustainable use of biodiversity. As a result, the high concentration of monocrops has displaced populations, thereby accelerating the intensification of rural and urban poverty alike. Similarly, urban development has not followed environmental principles and has therefore contributed to pollution, habitat degradation

and adverse effects on the health of the population (Alimonda, 2006). In order to reverse this situation, we must analyse the relationship between the concepts of poverty and sustainable development.

Poverty levels in Latin America depend not only on monetary income but also on the natural, infrastructural and social context in which the poor live and which does not allow them to reverse the situation. That would require much more than just increasing their income level; it would require sociocultural and health measures, new homes, participation in environmental governance and so forth. While the World Bank (2014) predicted less poverty in Latin American in the near future, the reports of the Economic Commission for Latin America (CEPAL, 2008; ECLAC, 2010, 2013) tell a contrasting story. Since the era of neoliberalism there has been a relative decline in poverty, but the region has maintained a high absolute level of poverty. In 2010, according to ECLAC, there were 177 million poor people, 70 million of whom were indigent (people whose income did not cover their subsistence).

We can indeed see that the poverty rate reached 48% of the total population in 1990 and 44% in 2002, and only in 2011 did it drop significantly to 27% (ECLAC, 2013). In the case of active, socially inclusive, redistributive states, asset levels decreased dramatically. Although there are positive aspects to this new situation, it should be noted that overall funding for these actions comes from the overexploitation of nature. Furthermore, they are contingency measures that are not based on stable yields and can therefore be reversed. According to the ECLAC report, the changes in poverty rate from 2002 to 2011 are as follows: Ecuador dropped from 49% to 32%; Argentina from 35% to 5.7% (this is debatable due to the evolution of prices within the country); and Venezuela from 40% to 32%. These changes were primarily due to subsidized employment that was reduced with the onset of the crisis. This situation is especially serious for children. According to CEPAL (2008), in 2000 it was estimated that approximately 36% of Latin American children under the age of two years were at high nutritional risk (i.e. their minimum subsistence needs were not being covered). Even in Argentina, which can produce food for a much larger population than it has, the Pan American Health Organization (PAHO, 2010) estimated that in greater Buenos Aires one in five children was malnourished. This situation has improved somewhat in subsequent years, according to ECLAC (2013: 14):

> These measurements are encouraging, with all countries reporting a decrease in the percentage of children under 18 who are deprived

> of some basic rights (overall poverty). In the region as a whole (14 countries, comparable over time at national level), overall child poverty fell by over 14 percentage points over the period, from 55.3% of children in around 2000 to 41.2% around 2011.

For the abovementioned reasons it is difficult to resolve the structural poverty that plagues Latin America and which is the result of production patterns, which fail to absorb the quantum and dynamics of the economically active population and seem unable to reverse the concentration of production and income. Rather than identify and analysing these facts, though necessary, we should concentrate on analysing the costs of past damage and how to reverse this situation structurally and quickly.

The conflict between poverty and sustainable development

In Latin America the relationship between poverty, environmental crisis and short-term accumulation in this age of globalization presents a particular complexity. The environmental issue is a fundamental part of the inequality and dependency issue of the development model (Martinez-Alier et al., 2010). In search of alternatives, theory can play an important role by showing that we have the resources and capabilities to change the situation. This requires better distribution and organization, which can give us a sustainable and socially just development (Salvia, 2011).

Development indicators such as gross domestic product (GDP) only highlight the productive face of development and ignore the degradation and waste that it causes. The social destination of production is geared towards those who can manifest themselves in the market, thereby satisfying needs while also generating poverty and misery for those who do not meet the minimum necessary income. The lifetime of products is reduced to avoid market saturation, leading to a significant generation of waste and pollution. Therefore, development indicators must be reworked.

The development of equity accounts indicates a fruitful path (Sejenovich and Gallo Mendoza, 1997). As a result of this conceptualization, an integrated and sustainable management of natural resources, habitat conservation, and energy and human capacity finally seems to be possible. It is essential, however, to consider all the negative externalities of state development projects. The production process neither begins with the traditional natural resource (because tasks must be performed in order to regenerate the resource in an integral manner)

nor ends with the production of goods (the provision of its "return to nature", in terms of waste, must be analysed in order to prevent additional contamination). The eradication of poverty – and development of quality of life – implies a dynamic link between the individual, the community and the environment. The satisfaction of human needs is strongly associated with the continuous and creative participation of social partners and public policy in the transformation of the material, socioenvironmental and cultural conditions of production and of life. Social struggles energize and drive both individual and social development around situations that are changing and where there are projects for the future.

To achieve a reduction in poverty by ensuring equality requires a rethinking and modification of the current relationship between society and nature. This implies, among other things, a change in the technological pattern of production and consumption as well as a more equitable distribution of income (Anguelovski and Martinez Alier, 2014). Although the task seems difficult, there is really no alternative. The random occupation of space, the gigantic and uncontrolled scale of technology, and the destructive forms of short-term and unplanned use of natural assets and the habitat will exceed the limits of the biosphere. The effects of such activity are already manifested in climate change, food crises, structural poverty and social insecurity worldwide.

To the abovementioned income inequality we can add discrimination based on gender, age, language, identity, religion and different capabilities. This gives the dominant sector an excuse to pay lower wages to unskilled workers, thus yielding additional income. Therefore it is crucial that the state implements redistributive policies in order to improve employment rates and quality of life for the overall population. It is important to keep in mind that, depending on the year, 70–80% of the population possesses no more than 20–40% of the GDP in Latin America. It is also essential that the government implements a socioenvironmental system for land use, which should control the application of social as well as environmental legislation.

However, the state does not always apply these policies. As a result, the population suffers unmet needs and environmental degradation. The perception of this situation and the desire for change generate social and environmental movements that demand specific or more profound changes. The sciences provide tools for understanding these complex phenomena and for exploring potential alternatives, thus generating theoretical movements. In response to these social and scientific demands, the state typically begins with the implementation of changes

and the definition of some policies. The relative strength of these actors determines the kind of change that is generated, as well as its future stability. In this way, grassroots environmental governance is created (Cimadamore and Cattani, 2008; García Linera, 2008).

In recent decades, changes in environmental governance in Latin America have stimulated the participation of different social actors who strive to implement environmental policies to improve quality of life and environment. Environmental governance can advance this development by ensuring the greatest participation of different social actors with conflicting interests. This is undoubtedly the axis from which different problems can be resolved (Kooiman 2005). It demands that the social sciences – in both theory and practice – deepen their concepts from multiple interactive perspectives in thematic, temporal and spatial respects. This line of action reinforces a more comprehensive view of the relationship between society and nature, and strengthens the intervention methodologies that allow for its implementation. In this way, social science research can collaborate with social movements and the state (and the actors involved in it) to more clearly visualize contradictions and challenges. Although success is not guaranteed, this is a vehicle that environmental movements should use intensively and that the state should permit and promote. It is an integral part of the democratization of the state.

This spectrum of environmental movement actions commits academic researchers to social sensitivity. It allows for their positive interference in conflicts and enriches natural and social sciences by incorporating research and action in the face of environmental challenges. Especially in Latin America, it is essential to rethink development issues in order to make the concept of sustainability more holistic. To do so, we must overcome the economic and social constraints to accessing products and services. The poor do not reach the minimally required threshold, and as a response they form social movements to demand more jobs and income. If the struggles are truly economic, they are integrated into a situation of greater social and cultural marginalization. At the same time, they attempt to address the overaccumulation of capital and power, taking advantage of a number of disparities among the population. This is the case for gender (where women are remunerated with lower wages than men and demand real equality); ethnicity (by claiming equal treatment); language (allowing for a multinational society); age (developing a policy of inclusion and protection for children and the elderly); difference in religion (where freedom of conscience is claimed); nationality (equal treatment); identity (where several concepts

that address the history, their relationship with nature, and their relationship with a diversity of worldviews, society and nature are articulated); and different capabilities (respecting apparent limitations and enhancing capabilities).

The same fundamental categories that allow us to analyse the transformation of nature and its relationships will reveal the obstacles that inhibit the sustainable management of natural resources and the improvement of the quality of life of the population. This process demonstrates how the "organic whole" works – production, distribution, exchange and consumption. Instead of meeting the needs of the population, it only increases the income of the wealthiest. This generates negative externalities in both ecological and socioeconomic terms (Sejenovich, 2012).

Therefore, in order to increase the quality of life, we must implement different policies, actions and strategies that allow us to achieve our goal of sustainable development (Redclift, 1987). These objectives must overcome the myths about development that have been generated over several decades in Latin America – they must become countermyths or "fallacies", as demonstrated by Kliksberg (2014).

The role of social rights

The definition of "poverty" – always normative by nature – is relative. It depends on the epistemic frame in which the minimum conditions and life needs required for their survival, development and reproduction are set. In contrast with the economist perspective of "welfare" – which is rooted in neoclassical (welfare economics) and developmentalist (favouring the gross output and income share) approaches – the concept of "quality of life" recognizes poverty not only as an unfair deprivation of basic human necessities but also as directly related to sustainable development.

Sustainable development is highly sensitive to the relationship among environmental dynamics, socioeconomic processes, sociocultural orientations and the sociopolitical actions of those who are subject to these conditions (Stahler-Sholk, Vanden and Kuecker, 2008; UNDP, 2014). In this regard it should be noted that improving the quality of life implies a dynamic link between the individuals and their environment. The satisfaction of human needs is strongly associated with the continuous and creative participation of social partners in transforming reality. This means a process in which the conflict energizes and drives development, both individual and social, around changing situations.

It is worth noting that – for individuals as well as for the collective – needs and satisfactions are perceived from within a frame of representations. Likewise, values are determined by the place occupied in the social structure, at a particular time and in a given society. We must also consider that the struggle for adequate quality of life refers to relationships with objects and with a potentially peremptory and changing nature. Considering that individuals are driven also by subjective perceptions, a range of meanings emerge as the subject is formed from the material as well as the imaginary aspects of the object (Salvia, 2011).

Therefore, rather than material gains (goods) that we obtain from a better quality of life, we should consider the struggle among the involved social sectors and the ways people can develop their capabilities. The latter could be a greater objective – to strive for the comprehensive development of the population. Therefore, the processes of each ecosystem are analysed through three different sets of satisfaction rights necessary to "sustain" the relationship between development, environment and quality of life.

Right to livelihood: This right establishes the need to ensure the items or natural, technological and social processes that allow people to construct a convivial society. This includes a conservative and productive management of one's habitat to maintain overall health.

Right to protection: This is the right to personal development by way of a productive, healthy, satisfying and creative job, striking a dynamic balance with the environment. This includes the right to be protected in a legal and material sense against acts of aggression, abuse or discrimination (economic, ethnic, social, cultural, religious or related to gender). It likewise addresses the full integration of women into society and the triumph over the exclusive assignment of reproductive responsibilities to women, thereby ensuring equal access to productive resources and benefits.

Rights to levels of understanding and to participation: In this case it is the ability to develop and pursue personal, familial and community projects in search of a sustainable better life within an active and growing system of environmental governance as an efficient instrument (Asotorga, Ame and Valpy, 2004). This law also takes into account autonomous political and community participation in matters of public order, without restriction or constraint. This entails overcoming the condition of a mere consumer, adopting the multiple physical and cultural functions of an individual and his or her interpersonal relationships.

By taking into account the interdisciplinary and multiscale methodology of environmental governance, we present short illustrative cases

of four projects in Argentina and Uruguay which meet the criteria of ecosystem representation and progressive levels of social rights.

Illustrative cases

To analyse how society transforms nature to improve quality of life, one must employ an interpretative framework that can be accessed through interdisciplinary exercises. In this section we briefly describe four case studies to define the needs/rights that can overcome levels of poverty based on different analytical levels and territorial characteristics (rural, urban and extractive).

The transformation of society – the systemic relationship among production, distribution and consumption – is always the result of the rationality imposed by a historical social formation. The latter imprints a particular modality on the process of transformation and then determines the social destination of production (for whom it is produced), the technological form (how it is produced), a certain level of production (where it occurs) and a demand for natural resources and a particular habitat (with what natural and social resources it is produced). It gives priority to cases that obtain short-term gain and generates concrete products that meet certain criteria, negative externalities that are generally not considered (Sejenovich, 2000). All nature is socially mediated and social relations operate in a natural structure with which they constantly interact, in such a way that all sectors form part of the manifestation of the society–nature relationship.

An example of the integrated and sustainable use of natural resources is the ecosystem of the basin of the Angostura river, where the village of Tafi del Valle is located. In the mountainous area of northwestern Argentina, in the province of Tucumán, this area is similar to the Peruvian highlands (Valdivia and Gilles, 2006; Gonzalez et al., 2010). The socioeconomic process comprises an integrated management of a protected territory to overcome the existing grazing area. Environmental production policies attempted to replace the introduced fauna with a native species, such as the camelid.

As for food and nutrition security, it is evident that subsistence rights are being regularly met. Stable employment, however, has not been guaranteed. However, the use of the landscape for activities of responsible tourism is also an important potential source of employment. Regarding the pressure (both tangible and intangible) on natural resources, yearly and seasonal population increase give rise to rural districts. In terms of rights of protection and participation, the guarantees

maintained for the original population should be kept in mind. This includes access to means of communication – and participation in general community initiatives – for the original population and the native communities. Through the integrated and sustainable management of resources in a highly fragile area (48,000 Ha), 130 people have come to permanently occupy the land. This therefore guarantees the eradication of poverty, considering the cultural and communal aspects that already exist in the area.

A second example explores the strategy for sustainable development pursued by Gualeguaychu, and the impact of pulp mills in the community of Fray Bentos, Uruguay. The city of Gualeguaychu is developing a number of important industrial activities and implements agricultural and service activities – especially those involving tourism – in its ecosystems. The development of tourism and agriculture cemented the foundation for a more comprehensive and prolonged growth. This same growth has been threatened by the installation of two cellulose complexes on the Uruguayan shore, which have had negative impacts since 2003. In response, the population protested through legal and not-so-legal means, such as the occupation of highways and border bridges. Multiple studies have been conducted to demonstrate and quantify the environmental damage and lost profits that these projects would generate. They are not limited to ecosystems, infrastructure and urban areas; they also have direct effects on the population itself. The environmental costs are calculated according to the reduction of assets, which is measured on the basis of the harm to nature (Sejenovich et al., 2008).

The calculation of environmental damage and profit loss was not developed in hopes of retribution but as a strategy to put pressure on the international capital that supported the contaminating initiative. The population resorted to all legal means, including claims to international agencies and banks. They even went so far as to get the executive, legislative and judicial branches of the Government of Argentina to appeal before the International Court in The Hague. Although they were not entirely successful, they did prevent a company from being established and were responsible for the diffusion of the methodology of the Environmental Citizens' Organization Assemblies throughout the entire Southern Cone. They were sprouts of the environmental governance movement, where all sectors were expressed. This project is an initiative in the country with the highest incidence of identity crisis among the native population. In the struggle against the impacts of pulp mills in Fray Bentos, the population has essentially been fighting for the right to maintain a healthy environment and a stable landscape with little

intervention since the time of their ancestors, who wanted to bequeath them the land.

Given the environmental damage, it was essential to develop activities related to the environment in order to value knowledge about local products. Environmental damage and lost profits would exceed the allowable amount of the investment. In each of the ecozones, the potential for integrated and sustainable management can be analysed against the potential loss of biodiversity, costs (of managing natural resources) and benefits (considering the integral and sustainable use of biodiversity), and the lost profits that are its result. If calculated as negative externalities of the project, the total of the land value damages (US$172,037,600), the value of homes (US$320,000,000) and the damage to health (US$68,726,000) should reduce the companies' profits to the extent that the project could be economically unviable. At the very least, it should offer incentives for a more sustainable implementation. Despite the pressure exerted at every level, the huge power of international capital managed to ignore the externalities (and not pay for them), and instead to install the pulp mill with a very high rate of return.

Another instance of the nature–society contradiction can be found in the soyabean industry in Argentina. Concentrated in the Pampas region, the nucleus of the most fertile land in the country, it is another example of an oligopolistic accumulation of natural resources. The soyabean monoculture brings with it high productivity and a series of direct and indirect negative impacts. These include degradation and waste of natural resources, habitat pollution, and impacts on the population in economic, social, cultural and especially health terms. In fact, an increased incidence of cancer has been found and is likely due to the effect of the agrochemical glyphosate (Carrasco, 2012; Dougnac Martínez, 2013; IARC 2015). This danger was recently echoed by the World Health Organisation (WHO).

The monoculture of soyabean (Slutzky, 2011) – currently the primary export crop of Argentina – has replaced cattle grazing and other crops, such as cotton, lentils, milk, meat and rice. As a result, there have been shortages and increases in the Argentinean food basket. This expansion is made possible by the hegemony of financial capital that rents fields and machinery for monoproduction, thus displacing small and medium farmers. This ultimately results in poverty and displacement to urban areas, and furthermore to the expansion of the agricultural frontier into land that is not meant for agricultural use (Bustamante and Maldonado, 2008). Given that soyabean

production has displaced traditional foods, cultivation directly affects the Argentinean food structure and the right to subsistence. Much has been written about the alternatives to soyabean production, oriented towards comprehensive and sustainable resource management and poverty alleviation. For example, agroecology can be a highly productive process on a per-hectare basis. This maintains diversity, ensures the full use of land and provides an answer to rural poverty. This strategy will enable widespread environmental governance in rural ecosystems precisely because it involves the grouping together of occupations to be able to research, monitor and manage all of the plants. In turn, this generates significant revenue for the producer group. It also entails potential advantages in terms of the nutrition and diversity of food supply. However, a change of this nature would involve major changes in the line of interest within their respective elites.

The Matanza-Riachuelo Basin (Cuenca Matanza-Riachuelo (CMR)) project serves as our final example. The CMR spans part of the city of Buenos Aires and 15 surrounding municipalities, encompassing an area of 2,338 km^2 (the length of the main channel is 70 km). It is estimated that 5.3 million permanent residents and at least 3 million more commuters use CMR for transit. It is considered to be the centre of Argentine industrial development, but 23,523 companies which are active in the region have been registered as potential sources of pollution.

Ever since the colonial period, the contamination of the basin has generated significant actions, such as moving salt production to improve the water quality. It then suffered a second contamination from new industries, which affected the health of the population (ACUMAR, 2007). As a result, the state was sued by the direct victims in a case involving the Supreme Court of Argentina (2006). Known as the "Mendoza Cause", it was based on the implementation of court orders to restore the watershed and to improve the quality of life of the population. To meet this objective an interinstitutional body called the Matanza-Riachuelo Basin Authority (ACUMAR) was established. According to official data (2014), 459 industries have been converted; 289 have been closed; 1,364 have initiated a restructuring process; and 1,436 have presented plans to expand.

The right to livelihood is being met through decontamination to improve the health of the population. This includes the installation of sewage and clean-water pipelines, and the building of new homes and villas to eliminate slums and precarious housing. As of now, 17,771 people have benefited and 85% of the area's population will have clean water, better satisfying their needs and improving their quality of life.

A greater participation process has also been observed in the advisory body of the ACUMAR, which includes universities and NGOs. It is safe to say that environmental governance is becoming more effective by improving environmental conditions, poverty and subsistence issues, but they are changes that need to be accelerated (AySA, 2009).

The construction of major infrastructural projects allows us to visualize the fundamental aspects of watershed management. With the decontamination of the CMR and the solution of the problems of housing and services, there is no doubt that one of the main obstacles associated with poverty will be overcome.

Key trends and the struggle for sustainable development

From the illustrative cases discussed here, the experiences and expertise of consultants, and other global studies, several general considerations about the relationship between environmental governance and poverty in Latin America have arisen.

Powerful economic groups continue to adopt highly concentrated exploitation and environmental degradation policies that violate not only socioeconomic resources of local livelihoods but also the sociopolitical capacity to design, plan and implement sustainable socioenvironmental development. Environmental policies are often not heeded. At different levels of government the state has failed to define the full potential and limitations that should regulate monocultures, especially that of soyabean cultivation. In fact, tax returns generated by this activity are privileged and no existing laws apply to regulate them. An example of successful environmental regulation is the case of the Forest Act and the Environment Act in Argentina, where environmental planning is legislated. Agricultural confederations such as the Rural Society, the Agrarian Federation, Coninagro, CRA, various trade associations and the Chamber of Commerce have succeeded in imposing their interests on developing soyabean activity. This often overshadows the claims and legal actions of other social actors, including those of the state.

The soyabean expansion case in Argentina can be expanded to the whole region as the ecosystems that have already been transformed (the humid pampas grasslands, subtropical jungle, scrubland, gallery forest) occupy a critical percentage of arable land in Latin America. The organization of the state apparatus is not neutral. The institutional legal structure in Latin America is essentially developmentalist and will therefore favour the amount and dynamics of production, regardless of its impact, if environmental policies are not enforced. Although the

impacts of economies of scale have generated cost reductions, they are not translated into prices. Rather than improving the welfare of the general population, the oligopolistic market conditions have allowed large companies to increase profits. As a result, the "progressive spill" did not occur. In general, the rate of accumulation appears to impose oligopolistic structural rules of impoverishment, inequality and social exclusion. This is in addition to the processes of ecological impoverishment that result from ecosystem homogenization and environmental degradation.

These negative outcomes drive disputes in all illustrative cases. In Matanza-Riachuelo Basin, the creation of an intergovernmental body – ACUMAR, which has as its first priority to preserve and restore the Matanza-Riachuelo watershed with a range of public and non-public organisms – shows positive developments. In urban ecosystems the situation is not very different, but there are sociopolitical conditions that make the control, regulation and guidance towards socioenvironmentally sustainable projects more feasible.

However, overall urbanization in Latin America exceeds the guidelines of environmental planning, and this is reflected in almost all countries. The operation of watersheds and respect for their characteristics, under the onslaught of settlement infrastructure, remains a deficit that is frequently raised by environmental movements. One of the most serious problems is the political-economic action carried out by national governments in such projects – along with public action to develop megainfrastructural projects – to resolve problems that have been generated by the improper management of watersheds and ecosystems.

The developmental-productivist paradigm remains hegemonic when it comes to great solutions that affect most of the socioeconomic and sociopolitical regulatory institutions of social reproduction at local, regional and national levels. Many of the presidents' speeches at the Community of Latin American and Caribbean States (CELAC) Summit, in February of 2013 in Santiago de Chile, showed excessive optimism in regard to development actions without exploring certain limits that they really must consider. In any case, they should outline the progress that has been made in mobilizing public awareness and institutional improvements. This is the result of forces within and outside the governments, which fight for a solidary management of nature and among social sectors. To advance, it is important to overcome the temptation of criminalizing protest and for movements to deepen their creativity in action. If these aspects are satisfied, a better quality of life for disadvantaged sectors is possible.

Conclusion

The study of different socioeconomic environmental scenarios, under a rights-focused approach, provides purposeful lessons for envisioning the relationship between environmental governance and poverty in Latin America. The organizational forms of the state and its operations should be reoriented to better achieve sustainable development (Kliksberg, 2014).

We observe fundamental contradictions between society and nature. The most general is between economic cycles (short term) and ecological cycles (longer term), presenting incompatibility between temporal horizons. Now is the time to respect the timeframes of regenerative mechanisms. Other contradictions arise from the heterogeneity of ecosystems versus the trend to homogenize exploitation for maximum profit through economies of scale. Following a short-term economic objective, only natural resources with competitive global (and sometimes national) advantage are being used; a comprehensive and appropriate use of resources could prevent the existing diversity from being wasted. This practice is widespread in Latin America, where the generation of short-term income generates ecological, social and cultural impoverishment in the long term.

Furthermore, the administrative structures of the state are predominantly defined by a sectorial vision: production and short-term efficiency are privileged, the importance of interaction is minimized, and there is generally little room granted to the participation and articulation of science, technology and the quality of life of the population. Integrated and sustainable management of nature in environmental governance eventually overcomes the apparent contradiction between protecting the environment and stimulating production.

It is clear that, taking comprehensive production into account, there is a vast increase in production, income, employment, tax base and financial jurisdiction. At the same time, the environment is taken into account in an active and integrated manner, thus preventing the loss of biodiversity.

The ability to generate these productive strategies requires, without a doubt, a training programme to understand the techniques of integrated resource management. Actually, all countries with complex ecosystems – and specially those whose forested areas are predominant – apply this principle. We must keep in mind that Latin America possesses nearly half of the world's tropical forests. It increasingly requires new planning processes that incorporate the population from the outset, along with

the development of scientific interdisciplinary analysis. More and better participation, and a substantial improvement in training, are a priority for all governments. This aspect was particularly stressed at Rio+20.

Environmental governance of the land, patrimonial accounts, environmental assessment of investment projects, evaluation of environmental impacts, strategic environmental assessments and so forth are emerging as important alternatives. According to ECLAC (2010:140), "Territorial heterogeneity in Latin America calls for selective and targeted strategies. Local development, understood as a bottom-up process, mobilizes endogenous potential to build territories that are better able to create and drive their own capacities." The objectives of the National Environmental Governance Project in each country must reverse the process of poverty generation and, in turn, give more momentum to tasks already under way to directly improve the situation. Habitat improvement and policies to combat environmental degradation are systematically integrated with the possibility for a better life. In addition, the use of unusual environmental policies in Latin American countries – such as tax policies, credit, tariff or integration – all signify that there is a long way to go.

While these ideas are technologically plausible, and are also key for the sustainability of the planet, it is worth reiterating critical doubts that arise from both historical experience and theory. They question the ability of the current model of accumulation and the political regime of domination to advance socioeconomic and environmental sustainable development, without significant changes. The historical scenario seems to prolong an insurmountable contradiction between the interests to produce, distribute and consume, and the need to ensure social and environmental human life. Therefore, a greater organization and activity of environmental social movements emerges as a possible alternative.

An organizational form for sustainable development within environmental governance involves a holistic view, a direct relationship between research and action. It is a combination of the short, medium and long term, and of a generally high level of participation among civil society and social movements. It proposes implementing the necessary changes and taking actions that can lead to more successful forms of environmental governance and a better quality of life. Economic understanding must be open to all necessary actors, which requires reformulating the conditions for recovery and reproduction of capital with ecological, economic, social, technological and political implications. Only then do the desired reduction of poverty and reconciliation with nature truly begin.

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Part III

New Projects of Environmental Governance