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Coal mining on pastureland in Southern Chile; challenging recognition and participation as guarantees for environmental justice

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ABSTRACT

Coal mining in Chile has grown significantly from virtually nonexistent in the late 1990s to become a profitable business in 2014. This paper explores the consequences of such revival from a post-political environmental justice perspective, through the case of a coal-mining project on *Isla Riesco*, located in the Chilean Patagonia. The project *Mina Invierno* has met the necessary legal requirements and obtained the required environmental permits to become operational. Nonetheless, island residents are opposed to the project, and especially families engaged in sheep ranching, which is one of the oldest and most significant production activities in the area. By analyzing the conflict between coal mining and ranching on *Isla Riesco*, this article challenges the so far conceptualization of recognition and participation as dimensions of environmental justice, since our results reveal that what is excluded in this case are not only people but ideas, even if these come from non-marginalized actors. This finding contributes to environmental justice literature by proposing that the study of environmental conflicts, analyzed from a post-political viewpoint, should also focus on the challenges that communities face in order to rebut the prevailing consensuses that sustain their situation.

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1. Introduction

During 2011, several demonstrations took place from the southernmost parts of Chile to the capital of Santiago, supporting the small island of *Isla Riesco* in the Region of *Magallanes*, with a population of about 100 permanent residents. Participants protested against the national Environmental Impact Assessment System's (SEA¹ for its Spanish acronym) approval of the construction of an open-pit coalmine, destined to extract 240 million tons of coal within the next 20 years. Interestingly, the protesters were opposed to the mine since it would introduce a way of living, which they disapproved of for their land, and to the structure of a decision-making process that left them out.

As for the public opinion, the state officials claim that the construction of the coalmine in the remote island of *Isla Riesco* came as a response to the country's need for nationally produced electricity. Chile's high dependency on fossil fuel imports and its inability to meet the growing energy needs from the copper mining industry, inevitably led to the exploitation of the low calorific value

(sub-bituminous) coal reserves of the island, where deposits are estimated to reach 630 million tons (CNE, 2008: 69).

The ranchers of *Isla Riesco* opposed the project by declaring their dedication to the land and by reclaiming their right to engage in the economic activities that they had participated in for generations, which they feared would be threatened by the environmental impact of the coalmine. In its defense, the mining company claimed that coal extraction is a necessary economic activity for the development of the country and that the mine would not harm the island's environmental conditions. It is in this context that the SEA system became the main venue of an ongoing conflict between the large Chilean companies COPEC and Ultramar (involved in energy production, maritime transport, and natural resource extraction) and the island's residents, until then dedicated to sheep ranching and tourist activities.

The project was finally authorized, despite the fact that the Chilean SEA comprised of a public participation and enquiry process, where the island residents made numerous legitimate and well-founded claims and observations on its impacts.

In this paper we analyze the *Mina Invierno* case, from an environmental justice perspective that goes beyond the traditional distributive issue view (Martin et al., 2014; Martínez-Alier, 2014; Mehta et al., 2014; Movik, 2014; Pearce and Kingham, 2008). Focusing on the procedural component of justice and its two

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¹ Servicio de Evaluación Ambiental: Environmental Assessment System.



Fig. 1. Isla Riesco Map. Source: Authors.

under-examined constitutive elements, namely participation and recognition (Gibson-Wood and Wakefield, 2013; Hillman, 2006; Holifield, 2012; Schlosberg, 2004), we challenge the idea that recognition and participation guarantee environmental justice because what is excluded are not only people but ideas, even if these come from non-marginalized actors. Along this line, and in order to support our argument, we use concepts from literature on post-politics,² which help us comprehend the political setting in which the SEA decision-making process was made.

We argue that the *Mina Invierno* case comes as evidence that the 'consensus' that the SEA decision implies, is conditioned by the post-political context in which it takes place; thus many concepts and discourses, such as economic development and the need for resource extraction, are taken for granted, conditioning the results of SEA and restricting the content of debate possible within the public participation process. The evidence we use to describe this post-political moment, are three consensuses that characterize the Chilean sociopolitical scene; these are, the mining privilege over other activities, the perennial faith in fossil fuel economies as an opportunity for development in the *Magallanes* Region, and the national need for more energy.

In order to analyze the *Mina Invierno* case, we studied in depth its public participation process. By focusing on the observations that affected communities, civil society groups and citizens made on the project's environmental impact assessment report, we

contrasted them with the company's direct responses and the SEA's consideration. In this fashion, we interpret and assess the process' real chance for public participation and the residents' recognition as actors who have a say on the SEA's decision.

In what follows, we revise the historical context of *Isla Riesco*, shedding light on the wider *Magallanes*' region identity; we then present the theoretical framework that we used in order to interpret the *Mina Invierno* case from an environmental justice perspective within a post-political context. In continuation, we present and critically analyze the Chilean economic model and the country's energy and environmental policies, from the same theoretical angle. We continue by providing evidence from the project's SEA participation process' results and conclude with our study's main conclusions.

2. Ranching as a lifestyle on *Isla Riesco*

Isla Riesco is located in the Chilean region of *Magallanes* (Fig. 1). The island has a surface area of approximately 500 km² (three times the size of Easter Island). Half of the island is composed of public property that is uninhabited. The island is characterized by a mountainous landscape with numerous glaciers and native forests, and the landmass forms part of the Alacalufes National Reserve. The remaining inhabited part of the island is relatively flat, covered in peat lands and pastures, and divided into 30 small- to medium-sized ranches that sustain fewer than 100 residents. In addition to the livestock industry, a number of tourist attractions are found on the island: landscape contemplation, bird watching, whale watching, nesting of condors, as well as the two

² Understood as a political formation that "prevents politicization, rejects ideological divisions and aims to prevent conflict through "democratic" inclusion" (Swyngedouw, 2009).

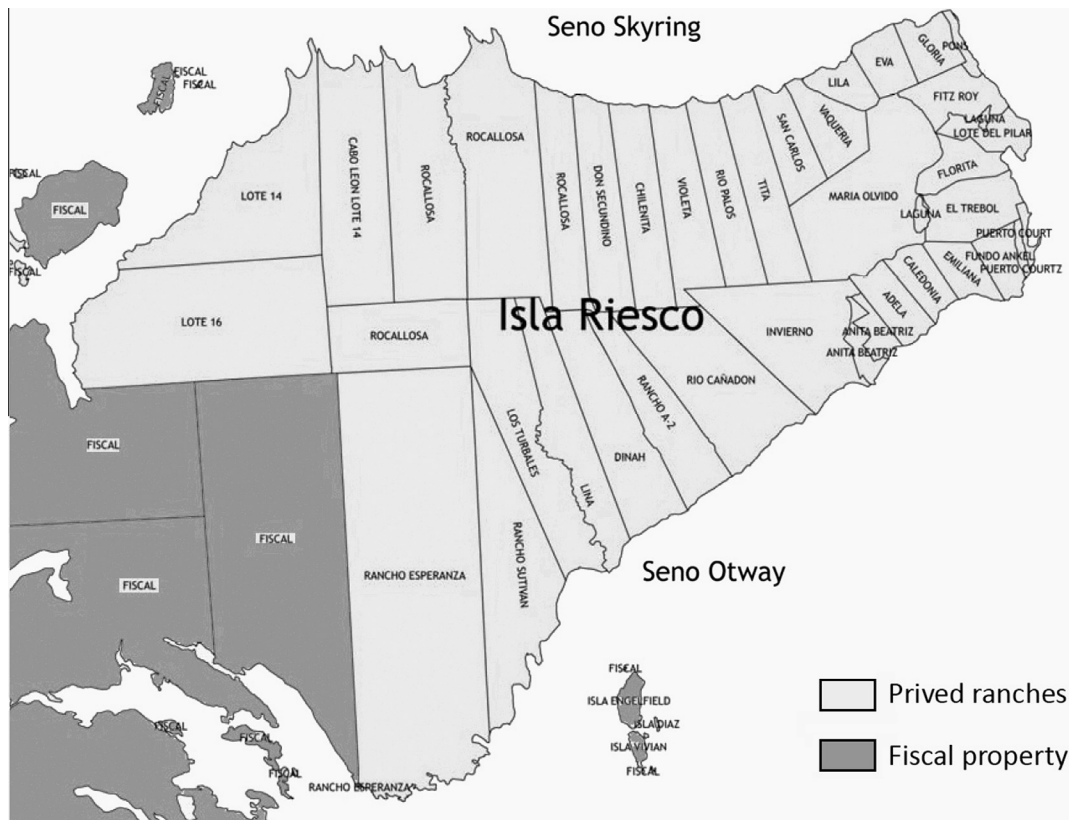


Fig. 2. Land ownership structure on Isla Riesco, circa 2000. Source: Ilustre Municipalidad de Río Verde (2007).

existing national reserves (Alcalufes and Francisco Coloane's Marine Park).

The history of sheep farming in Magallanes began at the end of the 19th century and was driven by the state, which promoted the colonization of the region by European immigrants. At the time, the land distribution policy had two objectives: populating the area and developing economic activity in the region. The activity evolved into a way of life profoundly established throughout the island's history (Calderón, 1937) and as a result, ranching represents now a major source of identity for the Magallanes region and for Isla Riesco (Garcés, 2009, 2012):

...long time ago, you had sheep running all along the way and they went by each *Estancia* in the island, you saw the neighbor's sheep from your window, because they cross the island right in front of you, they herded towards the crossing to get them off the island, now it's all in trucks ... and these were *arreos* (Caravans) of days and they stayed in our houses, it was a tradition ... Back then, you welcomed all those who came herding sheep

...Herders passed by and we had to go to spur on the sheep, we rode the horses early on, by six o'clock in the morning we were with the employees working in the *Estancia* and went to the last corner to get the sheeps, it took us all day to bring the flock. We brought them to the mid of the *Estancia*, and back again for more. It was impossible to carry them all to the next pen, and so the shearing lasted for a week... it was a whole process...

The expansion of ranching had an predominant effect on the economy by promoting the development of other economic activities, which gave rise to large, integrated companies and to the emergence of numerous partnerships that increased the urban population and stimulated economic drive (Díaz et al., 1920; Martinic, 2002: 63–94).

Despite its success, the first developmental model (cattle ranching driven by colonization) became a source of controversy. The state gave a small part of the land to individual settlers (*colonos*), but large pieces of land were ceded to rent for long and extended windows of time to a small number of ranching companies. This policy favored the formation of larger properties, belonging to a few foreign residents. This situation encouraged the emergence of a regionalist sentiment in Magallanes and the articulation of a political movement in favor of a "subdivision of fiscal large estates" which is to say, the recuperation of land rented by the state and its transfer to the settlers. Between 1937 and 1957, this movement reached its objectives, giving way to an agrarian reform '*avant la lettre*'.

The effects of the land subdivision process in Magallanes were quite favorable. The subdivisions multiplied the rural population, the work, the investments and the upkeep of the fields, forming a much more efficient and sustainable system of extraction than that of the former, larger estate. Consequently, the subdivision of land led to a better economic development and contributed to social peace in Magallanes (Martinic, 2002: 105).

One of the state-leased terrains recovered in 1957 was the Ponsomby Ranch on Isla Riesco, a terrain of 30,000 ha, which remained under control of the most esteemed cattle company in Magallanes (Martinic, 1980: 29–34). The families that to this day work in ranching on Isla Riesco and reject the mining project are direct descendants of the first settlers that received land in the dissolution of the Ponsomby Ranch (Fig. 2).

In 2010, Mina Invierno introduced the project to the SEA system, for the exploitation of the open-pit mine, which was approved in 2011 by the Committee of ministries. The mine was located in the eastern tip of the island, near the channel that connects the island with the continent (Fig. 3).

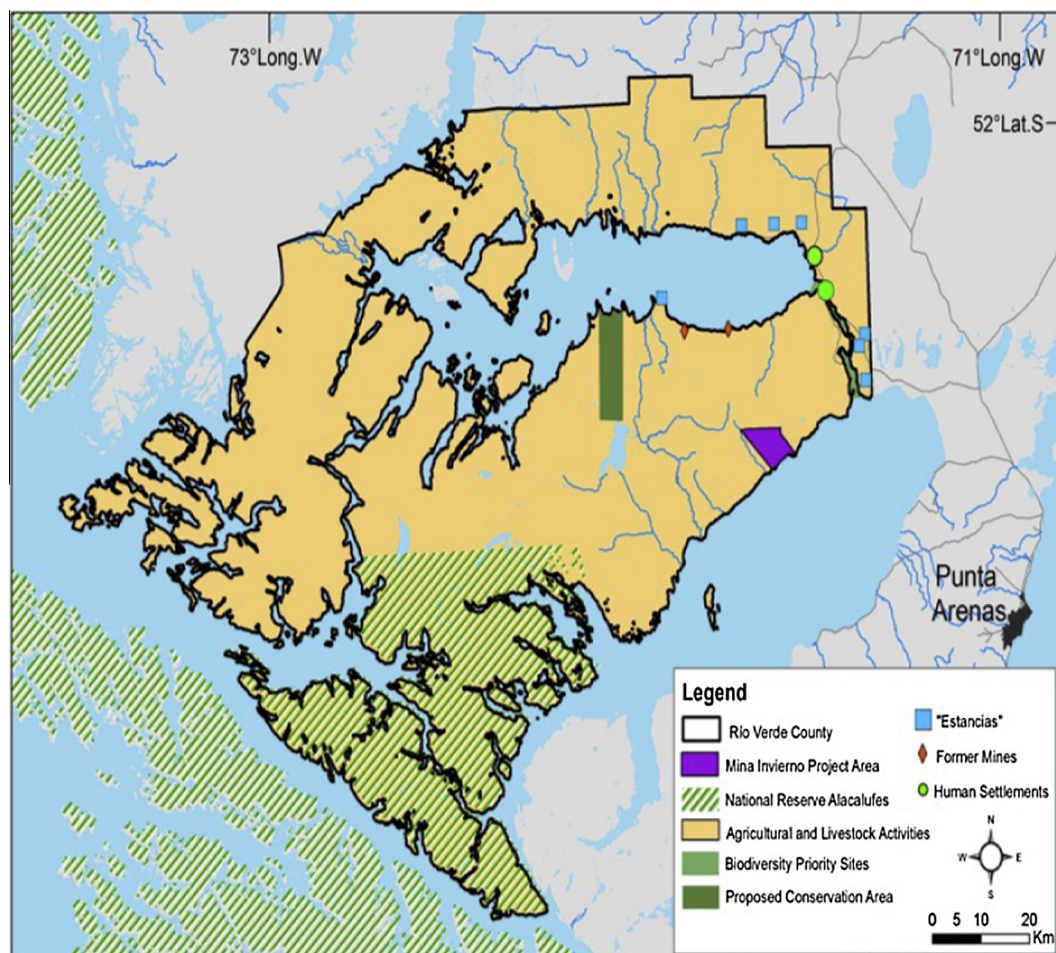


Fig. 3. Mina Invierno Location. Source: Authors

The resident families on *Isla Riesco* organized their resistance as soon as they found out the existence of the mining project, and realized its consequences. The rejection of the mining project was not blind; it grew as the experts gave more details on its impacts, and as people were informed of the environmental consequences, to the point that they understood that, as it was proposed (open pit big scale), the project was incompatible with their lifestyle. First, they created the “Community organization for Sustainable Development of Rio Verde”, integrated by citizens of *Isla Riesco* connected with the ranching and tourism. Later on, they created *Alerta Isla Riesco* (AIR) an organization—involving locals and people from across the country—whose objective was to “Protect *Isla Riesco*, ensuring sustainable development based on the respect for environmental, social and economic dimensions” (www.alertaislariesco.cl).

Since its foundation, the movement has worked to disseminate and make visible the environmental, social and economic impacts of open-pit coal mining on the island, as well as on other communities, creating connections with communities affected by coal mining within Chile and the world. The group has developed different strategies at a local, regional, national and international level involving: the ‘participation’ in the SEA process (they introduced more than 1400 comments to the SEA presented by the company), legal actions (presentation of Habeas Corpus and administrative reclamations), research by scientists and professionals, dissemination through television spots and documentaries, creation of community networks and reaching out to politicians.

The AIR movement argues that coal extraction (destined to feed thermo electrical power plants) is negative for the country. In this

sense, they connect and have solidarity with other organizations and communities that oppose air pollution caused by thermo electrical plants. From this standpoint, those mobilized against *Mina Invierno* not only reject the mining project but the carbonization of Chile’s energy matrix. In this context, the *Isla Riesco* conflict is one more of the many energy and mining related conflicts occurring in Chile in the last years. The reasons of this growing discomfort lie in the mining and energy consensus prevailing in the country, the same consensus that this case exposed.

These actions required important financial resources, which the group has gathered from campaigns and their own savings. AIR is comprised of people and families with resources and networks, but they do not fit into the ‘wealthy’ category either. They are professionals (doctors, journalists, psychologists, agronomists) who can mobilize their social networks and explain things clearly, but do not belong to power networks. Yet, they could not stop the project from being approved. Thus, what does this case tell us about the power these groups have in the decision-making process? How is it politically possible that people with financial resources cannot prevent this kind of decision? Could this be considered environmental injustice?

3. Environmental justice, SEA, and the post-political order

In this section we aim to connect discussions on what constitutes environmental justice (distributional versus procedural) with debates on who may be the locus of injustice within a post-political moment. Our argument is that we need to look beyond

the impoverished groups to find ways to connect struggles and strategies of resistance. Therefore, we start from questioning the notion of environmental justice in order to analyze the actors and spaces of injustice into the Chilean environmental impact assessment system.³

Environmental justice is both a social movement and a field of research. In both spheres it is understood as a form of social injustice (a synonym of distributive inequality) and is defined as “the differential exposure to environmental ‘bads’ and access to environmental ‘goods’ experienced by different social groups” (Bickerstaff et al., 2009), determined by their economic or racial conditions (Pulido, 2000).

Various authors have proposed a revision of the concept of environmental justice, in the sense of widening its coverage and advancing toward an explanation of the conditions or mechanisms through which society produces environmental injustice, i.e. a concept of injustice as a ‘process’ rather than a ‘result’ (Boone, 2008; Pellow, 2000, 2001; Schlosberg, 2004, 2007, 2013; Sharma-Wallace, 2013; Swyngedouw and Heynen, 2003). An interesting contribution to this debate is that of Schlosberg (2004), who, based on Young (1990) and Fraser (2000), emphasizes the procedural dimension of justice, establishing that inequality is the result of the decision-making process. Schlosberg argues that justice is a balance of three key interlinked elements: distribution, recognition and participation. Schlosberg (2004: 519) states that:

“Justice must focus on the political process as a way to address both the inequitable distribution of social goods and the conditions undermining social recognition. Democratic and participatory decision-making procedures are then both an element of, and a condition for, social justice”.

Lack of recognition is the foundation of distributive injustice. If a community is subject to a range of cultural, political, and structural obstacles constructed by cultural degradation, political oppression, and lack of political access, an authentic participation in the decision-making process is impossible.

By highlighting its procedural dimension and political nature, Schlosberg widens the scope of environmental justice, although he still focuses on those same groups which have traditionally been seen as victims of environmental injustice: poor communities, indigenous communities, and communities of color. Other researchers have added the variables of age and gender to this list (Boone, 2008).

In this line, Holifield (2012) suggests a similar argument to which we will develop here. He studies the case of a hazardous waste site located within a Reservation in northern Minnesota. The affected Ojibwe communities fought in order to be recognized and participate in the human health risk assessment process, with the aim to protect their treaty rights to practice their tribal traditional lifestyles. Following Schlosberg, Holifield observed in this case a situation of environmental injustice caused by the lack of recognition and participation of indigenous communities. Like us,

³ In this point, we find it necessary to clarify why *Isla Riesco* is a case of environmental justice and not a NIMBY. According to the literature (Freudenberg and Steinsapir, 1991; Dear, 1992; Hunter and Leyden, 1995; McAvoy, 1999), NIMBY implies the following requirements: (1) the affected parties consider the rejected facilities necessary or even beneficial but do not want it near them; (2) the affected parties move by selfish interests. They do not consider the general interest or showing solidarity with others affected by the same problem (‘in any other backyard, but mine’); (3) the opposition claims are limited to the location of the facility, missing any broader critiques beyond that scope; (4) the rejection is blind, without objectively considering the real risks of the facility; (5) the main concern of the affected parties has no connection with the degradation of environmental quality but with loss of property value; (6) the resulting conflict is an isolated phenomenon, spontaneous and of short duration, disconnected from others; it has no history or memory. All these requirements are not met by the *Isla Riesco* opposing community, as will be demonstrated by the evidence provided in Sections 2 and 6.

he explores the procedural dimension of injustice, but within the conventional view on environmental injustice. Although in Holifield’s case study environmental injustice affects a marginalized ethnic group, our case advances this line of argument and allows us to reflect on whether the lack of recognition and participation also acts on non-socially or culturally marginalized groups.

In this study we want to take these theories further. If the essence of injustice is disenfranchisement, if what generates environmental injustice is the decision-making system, we question whether a group that is not marginal, from a racial or economic point of view, can be the object of environmental injustice. The case of *Isla Riesco* allows us to examine this hypothesis. The victims of environmental injustice in this case are white, land-owning wage earners, with a university education. Could a lack of recognition and participation make this community the object of environmental injustice?

If we apply the concept of environmental justice proposed by Schlosberg to the case of *Mina Invierno*, we ought to look at the process of environmental decision-making and, more specifically, at the system which approves large investment projects: the SEA. There is a broad consensus on the importance of public participation in environmental decision-making; there are international agreements that recommend it and many laws that require it. Virtually all countries applying *environmental impact assessment* have enacted at least some practical measures for public participation (Glucker et al., 2013). However, in practice, the participants are generally disappointed by the process, and frequently say that they ‘were not listened to’ (Mclauchlan and João, 2011). According to Glasson et al. (2005: 24), “procedures for and the practice of public participation in the SEA process vary between, and sometimes within, countries, from the very comprehensive to the very partial and largely cosmetic”.

If we examine this problem in relation to environmental justice, we can propose that, despite the fact that the processes of making environmental decisions (specifically, the SEA) are formally ‘participatory’, in practice they produce environmental injustice, because they lack actual recognition and participation. This is because these decision-making systems reproduce the conditions of exclusion that exist in the political system they are part of.

To comprehend this contradiction – formal participation without actual participation, and nominal recognition without actual recognition – which, according to our hypothesis, does not merely mirror “the inequity in socio-economic and cultural status” (Schlosberg, 2004: 522), it is necessary to examine the environmental decision-making process in the frame of what some theorists have called the “post-political order” (Cook and Swyngedouw, 2012; Mouffe, 2005; Swyngedouw, 2009, 2010, 2011; Žižek, 2008).

Post-political order is a characteristic of liberal Western democracies, in which the idea of ‘conflict’ has gradually come to be seen as something that ought to be eradicated from politics, and that political actors should abandon the old ideologies, which caused clashes in the past. Although disagreement and debate do exist, they only operate within an overall model of elite consensus and agreement, subordinated to a managerial-technocratic regime (Swyngedouw, 2009: 610). Under a ‘post-political order’ hierarchy and inequality are installed; this is an order in which every part – each actor and each subject – has an assigned position, and this is indisputable. Demands too are depoliticized (Žižek, 2008: 31–32), and the government solves the problems affecting specific groups with technical solutions, but denies these groups the possibility of raising those problems to the level of ‘universal problem’.

The effect of these actions is to radically exclude those who position themselves outside this consensus (Swyngedouw, 2009: 610). Under the logic of consensus, the only point of discussion “lies on what has to be done as a response to a given situation” (Rancière, 2003: 4–6). This post-political order controls all areas

of public life. Erik Swyngedouw, in his application of the theory to the environmental sphere, states that environmental politics have been:

“reduced to the sphere of the police, to the domain of governing and polic(y)ing through allegedly participatory deliberative procedures, with a given distribution of places and functions. Consensual policymaking, in which the stakeholders (i.e. those with recognized speech) are known in advance and where disruption or dissent is reduced to debates over the institutional modalities of governing, the accountancy calculus of risk and the technologies of expert administration or management, announces the end of politics, annuls dissent from the consultative spaces of policymaking and evacuates the proper political from the public sphere.”

[Swyngedouw, 2009: 609]

In short, we view the environmental decision-making system, and in particular the system of environmental assessment, as an apparatus designed to make restricted decisions. As a functional apparatus of the post-political order, it is designed for a single purpose: to safeguard the reigning ‘consensuses’ (in economic, environmental and development terms). This apparatus functions like a filter, which excludes from the decision-making process those ‘universals’ (i.e. values and ways of life), which are not part of the ‘consensus’ of the political order. In practice, the decision-making system does not recognize nor admit the actual participation of those communities or people that represent or promote these ‘universals’, which contravene the established political order, irrespective of their race or social class.

Each time the system makes a decision it operates with the logic of exclusion and, in doing so, commits an injustice against those people located outside of the ‘consensus’. Although these are ‘participative’ systems and these people have a formal ‘place at the table’ and ‘can speak for themselves’, they do this from a position of total inequality. In practice these people are denied the right to defend their way of life. These people are not in a marginalized social or economic position; nor do they suffer any cultural prejudice. However, as they are unable to influence the decision-making process, they, like all marginalized groups, are disempowered.

4. Mining privilege, coal dreams and the looming energy crisis as post-political consensuses

4.1. Mining privilege

Mining activity in Chile has enjoyed a certain degree of legal privilege since colonial times. Moreover, the legacy of the neoliberal-inspired military dictatorship that dramatically altered regimes of natural resource production and management has had a lasting impact.

From a legal perspective, starting a mining operation in Chile involves the attainment of two basic permissions: an extraction mining concession and environmental authorization. The procedure for acquiring the first permission is very expeditious. The Mining Code, enacted during the military dictatorship, and still in force, provides extensive guarantees to miners to establish a concession to search for mining opportunities, to which landowners cannot oppose. In addition, the legislation concedes the easements required for mining operations in advance for areas spanning beyond the radius covered by the concession. The *Mina Invierno* S.A. was awarded rights to the site in 2008 and in the following year was awarded the majority of the coal reserve sites on the island (Fig. 4), as such easements were required for the project.

The reasons why ranchers were willing to sell their lands to the mining company are described by one of the project’s opponents:

“If you go to trial, you have everything to lose, you cannot exercise your rights [...] one can fight the battle, but it will not be a battle that negotiates very much [...]. They [the miners] cannot force you to sell, but they can really make a mess of things [...]. With an open-pit coalmine in operation, it is impossible to raise livestock, impossible. In the end, you get to a point where you just go to the lawyers to negotiate and then you sell. I think that for economic and psychological reasons, in a sense, you are forced to sell”

[Personal interview with an *Isla Riesco* rancher, on December, 27, 2013]

4.2. The coal dream of Magallanes

Coal extraction on *Isla Riesco*, dates back to 1942, when a commission of North American experts explored the country’s carboniferous regions and recommended this particular economic activity for the island (Toenges et al., 1948). As such, it has always been a foreign project on the island dynamic, imposed by national state agencies with no concrete cultural or meaningful ties to the island. However, its development has been constrained by the physical challenges of removing the coal from the ground: while there was previously known evidence of enormous coal deposits on *Isla Riesco*, the presence of sub-bituminous coal (coal of low calorific value) on the island caused the experts to recommend that the volume of reserves and the quality of the coal be studied in depth before designing a large-scale extraction project. In addition, the characteristics of this type of coal necessitate the development of a system that permits the concentration of on-site carbon content for increasing the coal’s value and to make extraction profitable (Toenges et al., 1948).

There were several attempts to extract coal, such as the development of an experimental coal purification plant that would produce metallurgical coke and other derivatives such as gas and oil. The plant’s construction began in 1955, but the project was abandoned several years thereafter. Meanwhile, exploration work successfully concluded by the beginning of the 1980s and finally established the existence of plentiful coal reserves on *Isla Riesco* and in other places in *Magallanes* under state jurisdiction. However, predominant economic conditions in the country, and of the coal industry in particular, rendered coal mining on *Isla Riesco* unattractive at the time.

The project remained filed in CORFO records until 2002, when the technological and commercial conditions for coal mining in Chile, and internationally, changed considerably between 2000 and 2006, making the project viable once more.

The project became so attractive that it was turned into an object of dispute between the multinational mining company BHP Billiton and the largest energy company in Chile (COPEC), one of the country’s largest economic groups (El Mercurio, 2014). In the end, COPEC bought the project from BHP Billiton, which involved the transfer of surface mining property; geological, environmental and engineering studies; and maritime concessions. The deal involved an investment of US \$20 million (COPEC, 2009).

4.3. The Chilean national energy policy

The Chilean economy has applied sustained growth strategies over the last several decades. The political elite has spent at least 20 years declaring that the country urgently needs access to higher reserves of energy and that this requires expanding the country’s electricity production capacity. The words of the Ministry of Energy delivered in 2011 eloquently illustrate this theme:

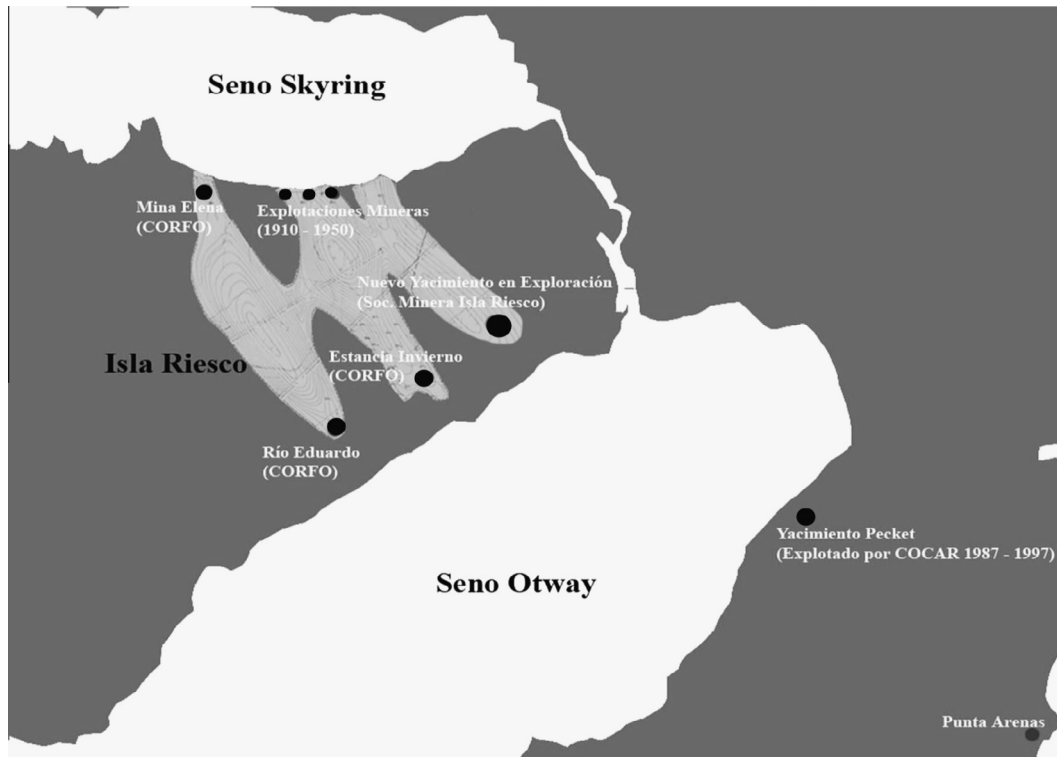


Fig. 4. Coal belt of Isla Riesco.

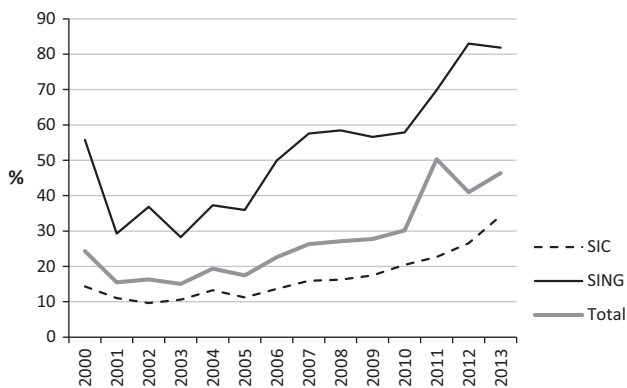


Fig. 5. Electricity generation from coal (%). Northern Zone (SING), South-central Zone (SIC) and SING + SIC (the country possesses four unconnected electric areas. Two of these areas, the Central Interconnected System (SIC) and the Northern Interconnected System (SING), represent over 99% of Chile's installation capacity).^a Thermoelectric plants are assumed to be coal-fired by coal and petcoke. Source: CNE, 2014.

“More numbers or fewer, Chile needs energy. A lot. If we want to continue with growth around 6% [...] we need energy [...]. With that mission, what we do in the short, medium and long-term to our energy policy is key. Without energy, the dream of a developed Chile is not possible. Without energy, productive and social development slows down, and we condemn our growth.”

[Álvarez, 2011a]

The majority of the electricity (67%) in Chile is generated through the burning of fossil fuels, and mainly coal (46.4%) (Fig. 5). Between 1996 and 2010, electricity generation projects with a total capacity of 3000 MW were approved. 63% of the projects were thermoelectric, and 95% of these involved coalmining

(Álvarez, 2011b). Within this energy matrix, coal consumption in Chile has exhibited sustained growth, exceeding 3 million tons in 1991 and 8.2 million tons in 2011 (Fig. 6), 99.5% of which involved the use of imported coal.

An explanation of this phenomenon, known in Chile as the “coal-ization of the energy matrix,” was offered in 2009 by then standing minister of energy, Marcelo Tokman:

“Coal has a competitive price, and in Chile and globally there are abundant reserves. The technology is well understood and new plants significantly limit local environmental impacts. However, the principal justification is that there were no available alternatives for meeting our growing short-term energy needs.”

[Danús and Vera, 2010: 199]

After the failure of the country's energy model based on imported natural gas from Argentina, Chile has not since followed an energy policy worthy of such a name.⁴ Rather, the system merely reacts to emergencies while meeting short-term needs. This has led to the anticipation of a “looming energy crisis” that is predicted to threaten the country's economic development and especially the undisputed pillar of country's economy (Tokman, 2009: 16), the mining sector.

The only advantage that coal offers as a source of energy is that coal-fueled plants can be built fairly quickly. However, the costs

⁴ In the early 1990s, Chile put in place an energy strategy based on imported natural gas from Argentina. It was thought that this would be a dependable source of cheap energy. Between 1991 and 1997 the investments that were necessary for importing, distributing and consuming this fuel, and that would be critical to the electrical generation system, were made. The importation of Argentinean gas began in 1997 and grew consistently until 2004. In 2004, 4,226,134 TM of gas were imported, which led to the generation of 17,508 GW/h of electricity. In the beginning of that year, the Argentinean government (the only supplier of natural gas) decided to restrict the gas supply in order to satisfy domestic demand. In 2008, the importation of natural gas from Argentina was reduced to just 851,779 TM, and the generation of electricity from this fuel fell to 2938 GW/h, only 17% of the level it had reached in 2004.

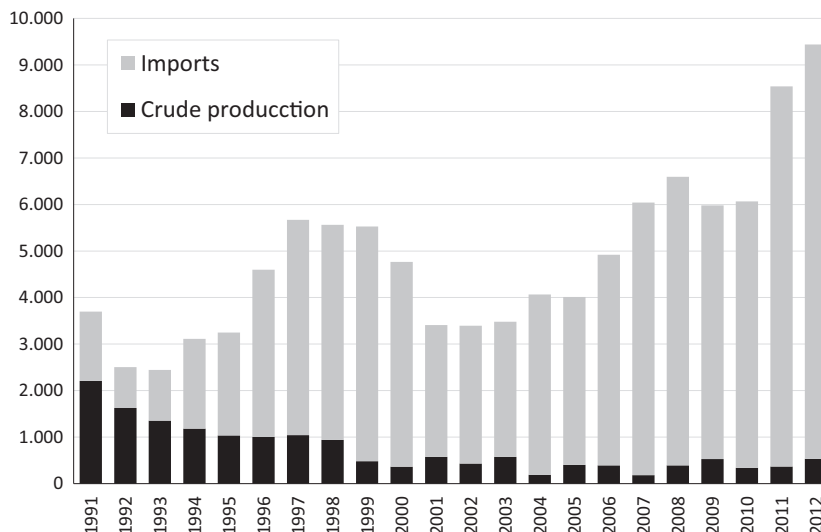


Fig. 6. Chile: The production and importation of coal in thousands of tons. Source: Ministerio de Energía. *Balace Nacional de Energía*, respective years.

outweigh the advantage. The price of coal has steadily risen over the last decade worldwide. In 2004, producing 1 MW of energy potential from coal cost approximately \$20 U.S. dollars in Chile; in 2005, the price reached approximately \$50 U.S. dollars. Nonetheless, electricity produced from oil was still more expensive; in 2004, the cost of generating power from MW oil exceeded U.S. \$80 (Minería Chilena, 2005).

Under such circumstances, sub-bituminous coal exploitation on *Isla Riesco* became viable, and despite demonstrating a lower level of calorific power and requiring substantial investment, the industry had access to a secure market. This explains BHP Billiton and COPEC/Ultramar's sudden motivation to seize extraction rights for *Isla Riesco* coal since 2006.

However, entrepreneurs were not the only group interested in coal mining on *Isla Riesco*. The initiative also enjoyed the support of two governments of opposing political coalitions (Piñera, 2010–2014). This, based on the structure of existing environmental institutions in Chile, is considered to be crucial to obtaining project approval, because the operative organs of the process are fully shaped by authorities designated by the executive power.

The energy strategies devised by the center-left government headed by Michelle Bachelet were intended to increase energy security levels both in terms of supply and cost. The approach was designed to harness “national resources and less exposure to supply risk and price volatility” (CNE, 2008: 67). *Isla Riesco* coal is, of course, included as part of this larger resource strategy. Documentation on this point clearly specifies the government's position on this issue:

“it is intended to facilitate the exploitation of large reserves located on *Isla Riesco* [...]. In 2007, [CORFO] awarded two [mining concessions] to a consortium formed by COPEC and Ultramar, which initiated the environmental assessment process to develop the marine terminal there. In expressing these private initiatives, it is estimated that the external dependence on coal will lessen from 96% in 2007 to 64% in 2012.

[CNE, 2008: 67]

Two years later, when a center-right government headed the country, three months before the environmental evaluation process of *Mina Invierno* would have concluded, Sebastián Piñera traveled to *Magallanes* to announce a Plan of *Magallanes* consisting of “the largest and most powerful investment that has ever happened in the history of this region.” The President's announcement included, among other actions, “the development of coal projects

[...] particularly on *Isla Riesco* [...] that would allow for production that could replace one-third of Chile's current coal imports” (Piñera, 2010).

Political support is critical to the decision-making process; *Mina Invierno* not only enjoyed the support of the central government but also that of local authorities. Tatiana Vásquez, mayor of the *Rio Verde* municipality and landowner, supported the project for reasons of general interest and in consideration of the country's future growth, as the following quotes demonstrate:

“Evolving from a pastoral region, we now have the option to add a mining enclave that will generate development. The country is experiencing an energy crisis and we cannot be selfish at this time”

[Radio Polar, 2007]

“Farmers should be generous. It is not possible for such a large territory to depend on only 15 families; that is synonymous with living in feudalism. The landowners must utilize their wealth in a sustainable manner and in a way in which everyone can benefit. Not everything can be generated from bread, beef and lamb [...]. I understand that changes of this magnitude to a region that has always been pastoral and bucolic may create uncertainties, but God has been good to this land and is now offering another opportunity for progress”

[El Mercurio, 2011]

It is also important to note that the country has installed a pro-growth development model. This model appears to have defined the objectives of economic policy (mining, energy, land, etc.) so comprehensively that they have not been formally defined through democratic procedures. These objectives are strictly imposed throughout evaluation processes. Thus, if a project represents the ‘general interest’ and engages ‘the country's future’, the SEA is virtually obliged to approve it. The *Mina Invierno* project arose from these terms: as a solution to the Chilean energy problem. Consequently, the project was easily approved.

5. The Chilean environmental impact assessment process; on recognition and participation

The restoration of democracy in 1990 started the gradual correction of the economic model adopted during the dictatorship and the establishment of environmental regulations. However, this

process has come with enormous difficulties that have delayed and prevented the development of environmental institutions.

In 1994, the country adopted its first institutional framework on environmental policy, which was widely reviled after its first years of operation. To obtain environmental authorization in Chile, project companies or owners are required to present an Environmental Impact Study (EIA)⁵ to the Chilean Environmental Evaluation Service (SEA). In this document, the proposed project must be described in reference to its possible impacts and through a discussion of preventive measures established to mitigate or sustain such impacts in accordance with applicable laws. One of the most controversial aspects of this procedure is that the project owner determines the possible impacts and estimates their magnitude in the affected areas. The evaluative process requires that public institutions with environmental jurisdiction report on the legal aspects of the project. In addition, potentially affected communities may also present their observations. The owner of the project is required to attend to these requirements by providing clarifications, corrections or additions to the EIA report or by incorporating such changes into the project design. Finally, once this stage is complete, the consolidated report is submitted to the regional environmental authority, which issues an Environmental Qualification Resolution (RCA)⁶ that either approves or rejects the project. Subsequently, the RCA may be appealed before a Committee of Ministers, which is a body chaired by the Ministry of the Environment and composed of ministers with environmental jurisdiction over all trusted authorities of the president of the Republic.⁷

The policy's critics (Cordero, 2006; Lavín, 2006; López, 2006; Pizarro, 2006; Sierra, 2008) have argued that the framework was weak, inconsistent, and incapable of accomplishing its fundamental objective: to protect "the right to live in an environment free of pollution, the protection of the environment, nature's preservation and the conservation of environmental heritage."⁸ This framework has been particularly disputed in the context of its use by the mining sector (Folchi, 2003, 2009, 2010). As a consequence of these criticisms, in 2010, the Chilean environmental institutions were modified, which challenged their strength. One of the proposed modifications was targeted at the SEA, which was one of the most highly criticized aspects of national environmental policy. The reform intended to improve the SEA by structuring the organization to assume a greater level of independence and a more technical (rather than political) character (Cordero, 2010: 149). This initiative was ceded halfway when the parliamentarians refused to completely strip the SEA of its political standing. Instead, it was concluded that the Regional Commission of the Environmental Evaluation Service, the organization responsible for sanctioning projects, would be chaired by the highest regional authority and composed of the regional representatives of ministries with environmental jurisdiction over all authorities designated by the central government.

One key aspect of the Chilean SEA process is that it hands over to the project's owners the faculty to establish the evaluation parameters, while the authority, along with the community, have to adhere to these. Within an environmental assessment framework of these characteristics, it is very difficult to demonstrate any project's deficiencies (Silva, 1997: 14).

Technically speaking, the dialogue spurred on between the affected community and the SEA surrounding each project's EIA report is extensive and covers a broad range of concerns on the project's environmental, social and economic implications. In real-

ity, it is impossible to make any observation of a nature distinct of what the system permits; that is, on legal administrative or technical aspects of the project. In practice, all arguments that do not fall into these categories are considered to be inadmissible in the evaluation process. As Pizarro (2006), in his extensive critique on Chilean environmental institutionalism notes, the national SEA only allows for local citizens to comment on technical aspects of a project. This mode of public participation omits and neglects the public's opinions on project implications for local development. In our case study, this has been translated into the exclusion or rejection of the rationality and values that cattle ranchers as an organic-based economy presented in the SEA process.

As a result of these shortcomings, the SEA has become the cause of most of the environmental conflicts in the country. According to the 2012 Human Rights Report (*Instituto Nacional de Derechos Humanos, 2012*), the SEA has been the source of 87% of all environmental conflicts in Chile, while the affected parties directly questioned the system in 50% of all cases. An analysis based on the production sector where conflicts occur, the same study reveals that 42% of the environmental conflicts are related to the energy sector, and 35.5% to mining. Out of the 46 conflicts, where the SEA was questioned, 20 were mining related. As such, we see two patterns: first, that the SEA has become part of the problem, and second, that there is a challenge to the prevailing consensus that have sustained mining and energy expansion over the last decades.

Actually, the guidelines provided by the SEA's Department for public participation (see Fig. 7) clearly indicate that observations are not acceptable when they (i) are made through plebiscites, regardless of the number of signatures collected, thus implying that individuals cannot express their disagreement with a project; (ii) appeal to future plans that the community wishes to carry out; (iii) question the necessity of the project and/or its location; (iv) highlight the negative impacts of previous projects in order to reject the project; and (v) claim monetary compensation. The first three categories of refused observations imply a disregard for mass, public rejection (plebiscite) as well as a denial of community self-determination regarding local development plans unless they are adequately justified. The SEA public participation process allows no space for concerns other than those that cite technical, legal or administrative shortcomings of the assessed projects (SEA, 2013), and thus concerns over existing ways of life and alternative paths for development cannot be considered.

This structure of public participation shows a lack of recognition of diverging values, rationales and lifestyles, thus disempowering local communities that are opposed to projects undergoing the SEA in ways described by Young (1990). Furthermore, this structure of participation allows no room for Schlosberg's call for recognition of "diverse cultures, identities, economies, and ways of knowing" (Schlosberg, 2004).

Thus, this lack of recognition of community values, cultures and lifestyles inevitably results in a nullification of real and meaningful participation in the SEA. In terms of environmental justice, this shortcoming denotes an unjust treatment of affected communities throughout the procedural process. The *Mina Invierno* case also exhibits a clear demonstration of environmental injustice that goes beyond racial, ethnic and class distinctions; clashing values, rationales and lifestyles exist between productive forces and visions of development that cannot structurally be involved in the participation process provided through the Chilean SEA.

6. The *Mina Invierno* coal mine environmental impact assessment process

A number of authors have argued that participation can act as the first dimension of justice that emerges (Urquidí and Walter,

⁵ In Spanish "Estudio de Impacto Ambiental".

⁶ In Spanish "Resolución de Calificación Ambiental".

⁷ The ministries with environmental jurisdiction are the Ministers of Health; Economics; Agriculture; Energy and Mining.

⁸ Law N°19,300 General Bases Of The Environment, Published in the Official Gazette on March 9, 1994, Article 1°.

PARTICIPACIÓN AMBIENTAL CIUDADANA

CONSIDERACIONES PARA LA FORMULACIÓN DE OBSERVACIONES CIUDADANAS

UNA OBSERVACIÓN CIUDADANA NO ES:

- Un plebiscito**, ejemplo: no al proyecto adjuntando a su vez un listado con 100 firmas.
- Sobre situaciones del futuro lejano**, ejemplo: Se tiene pensado hacer un circuito turístico.
- Cuestionamiento sin fundamento**, ejemplo: por qué aquí y no en otro lado.
- Referencias al actuar de la empresa en proyectos anteriores**, ejemplo: es que un proyecto x de la empresa tuvo una emergencia ambiental.
- Negociaciones monetarias**, ejemplo: cuanto va a ser lo que me van a pagar por la expropiación.

Fig. 7. Considerations for the formulation of citizen observations during the environmental public participation process. Specifications on issues that are not recognized as valid observations. Source: SEA, 2013.

2011), and interestingly this has occurred in cases regarding mining (Tschakert, 2009). This is not coincidental. Mining projects possess unique features that are likely to concern communities: the irreversible nature of impacts on the landscape, serious health effects on surrounding communities, the arrival of large groups of migrant workers, and the leakage of benefits from mining operations outside of the community (Avci et al., 2010; Bebbington et al., 2008; Bebbington, 2010, 2012; Liu et al., 2014; Meisanti et al., 2012; Morrice and Colagiuri, 2013; Petkova et al., 2009). Thus, what form of participation could cause communities to support mining projects on equal terms?

In the following section, we outline the dialogue that unfolded on the project's impacts between *Mina Invierno* representatives, affected citizens and SEA professionals, during the official public participation process. Our results draw from an analysis of the ways in which observations were considered by the SEA. Our objective is to reveal how participatory processes do not always guarantee the recognition of claims by participants, thus nullifying the concepts of participation and representativeness in such cases (Glucker et al., 2013).

In 2008 *Mina Invierno* S.A. requested authority to construct the *Isla Riesco* Port Project and obtained authorization without major problems by the end of the following year. A month later, the EIA report of *Mina Invierno*, received some 1532 observations, and this obligated the company to present three consolidated reports on the project between April and November of 2010. The project was approved by the regional environmental authority in February of 2011, once these documents were provided. According to the mayor of *Magallanes*, the project “fully complies with the law and we are certain that thus we are establishing a parameter of economic development for *Magallanes*” (Radio Polar, 2011). Those who opposed the project appealed the decision before the Committee of Ministers, which postponed its decision for six months. Finally, in August of 2011, the decision was ratified at the regional level after adding minor requirements that the director of the company considered “very reasonable” and consistent with “what we

have proposed.”⁹ By this time, mine construction was already underway.¹⁰ A year and a half later, by March of 2013, the project began operations with an investment of \$180 million.

In its four years of operations, *mina invierno* has caused several impacts in the environment and the community of *Isla Riesco*. Among them, we can mention the following: destruction of a *Kawaskar* archeological site, several incidents associated with the operations of the port such as coal leaks, crash of coal vessel causing leaking of ballast waters into the bay, and a vessel porting 60 thousand tons of coal got mired in the *Tortuoso* pass for over a month. Others have affected the broader bay area such as water pollution, and findings of coal remains in the *Otway* sound, causing wetland disruption. For the former, the company was found guilty by the environmental authority and fined in 2014, for the latter; there is an ongoing investigation by the environmental crime brigade.

The community's observations on the *Mina Invierno* project, received during the 60 working day period of the public participation process, clearly reflect these environmental impacts. The observations were focused on the company's EIA report and were principally concerned with: the evaluation of the territory's actual ecological status (50% of total observations) and the project's predicted environmental and socio-economic impacts (42% of total observations).

Among the main concerns from the observations we can identify four main environmental consequences: (1) the alteration of the ecosystem that represents the open pit. The effect being the alteration of the behavior of natural predators (like the fox) which in turns impacts sheep ranching. (2) Dust in suspension affects quality of the wool. (3) Alteration of the hydrological cycle caused by the excavation processes, which causes changes in water

⁹ “Gobierno aprueba con observaciones proyecto minero *Isla Riesco*,” *La Tercera*, Santiago, 13-08-2011, p. 54.

¹⁰ “Gerente de minera *Isla Riesco* presentó avances del proyecto,” *Radio Polar*, 02-06-2011. [http://radiopolar.com/noticia_46681.html].

availability for human and cattle consumption. (4) Waste disposal which pollutes rivers and the bay, which affects rural tourism associated with ranchers lifestyle.

Although all observations must receive a response that is well founded and satisfactory according to the community, an analysis of the results discloses that 49 of these observations were left unanswered, and 1146 were either rejected (494) or refuted (652). Approximately 330 observations were either completely or partially accepted. For the majority of these cases, the project representatives responded to claims through the provision of additional details on the particular project issue of concern.

After several appeals by community members and civil organizations were carried out for a total of 106 observations, the Ministers' Board, the highest authority of the SEA decision-making process, directly revised and responded to each of the omitted and poorly addressed observations. This process led to the development of a final list of 10 observations that were deemed valid and worthy of company compliance. A deeper analysis of the observations that were finally taken into account and an understanding of the criteria that reduced more than 1500 observations to a mere 10 will provide a stronger understanding of the SEA participation process in Chile.

6.1. Invisible values; invisible cultures

Overall, the responses (or lack thereof) to the observations confirm that the majority of the community's concerns were not recognized by the State, as represented by the SEA. Although the public participation process was designed to function as a platform for dialogue between the state, project representatives and affected citizens, this lack of response demonstrates that the process itself does not adequately fulfill its function of safeguarding dialogue.

The omitted observations (which were not answered either by the state or the company) can be divided into three main categories: (i) *issues of local development and economic gains*; where the community calls for a more active role of the State in local development, expresses concerns surrounding the project's impacts on tourism and claims that resultant economic gains will not benefit the region directly, unlike the other two established activities of ranching and tourism; (ii) *critiques to the system itself*; in developing its EIA report, the company submitted the port construction project documentation necessary for the transport of extracted coal to the mainland independently from the mine project, thus ignoring synergistic or accumulative environmental impacts; (iii) *other fauna loss- and contamination-related observations*. This disregard of certain ecological concerns may depict the prioritization of such issues on behalf of the SEA.

Delving into these omitted observations, we notice that some citizens, along with expressing their fears with respect to the environmental impacts of the mining activity, brought up the issue that the generated incomes from the mine would not stay at the Region; the company did not respond to these preoccupations. Additionally, numerous comments concerned the many ways that tourism could be affected by the mining activity: migration of birds as a result of noise and deforestation, visual and noise pollution, poor tourism reputation, road safety, etc. The company did not give a response to these worries either.

But the omission of an answer is not the only way the company avoided unwanted issues. For example, many observations on the project related to the company's community relations. Citizens raised the need for "a mechanism for ongoing communication" to be established for the community to be informed promptly of the operations. They also requested "dialogue mechanisms" between the company and the inhabitants of the island, as well as the design of a long-term strategy for the island, elaborated jointly

by the company, the community and the authorities. Finally, they raised the need to define a plan of action aimed at "strengthening the island's identity", supporting their traditional activities based on livestock and tourism. The company responded in a similar manner to each of these requirements: that the company had planned a "dissemination plan" consisting of distributing leaflets and organizing informative talks twice a year.

Concerning the observations made by the community that were rejected or refuted by the SEA (in other words, they were answered with a rebuttal), these are evenly distributed into two broad categories: the methodology used to determine the environmental and socio-economic baseline, and the evaluation of predicted impacts of the project on the territory. For the purposes of this article, we focus on the second category.

The rejected and refuted observations on the project's forecasted impacts largely address matters of local development, coinciding with the omitted observations. More precisely, we detect two main areas of concern arising from this perspective; first, concerns focus on the ways in which the company treats the tradition of ranching, which involves a strategic approach that uncovers issues of cultural and historical recognition of the most traditional activity in the area. Second, concerns focusing on the strategies through which project representatives assess the visual impacts of the project on tourism reveal issues of scale as well as values that are not compatible with the interests of different actors.

Ranching as a concern: A closer investigation of the discourse employed in the project's EIA report on ranching shows that this activity is deemed to be almost comparably hazardous to the island. The report states that **local "fauna have been affected by past and present disturbances, such as fires and ranching"** (Mina Invierno S. A., 2010), while **ranching is also cited to have been an agent of local vegetation degradation. Moreover, ranching and coal mining are referred to as the two main historical activities on the island that have easily coexisted, thus further dismissing any possible impacts of coal mining on the community.** Although this statement is partially true, **it disregards the fact that coal extraction on the island has historically been carried out at a small scale and using underground mining methods.** These trends therefore denote an obvious disregard for the island's ranching culture on two levels. First, ranching is treated as being almost equally as harmful as mining. Second, project representatives refer to historical processes in ways that highlight compatibility between the two activities.

Tourism as a concern: With regards to tourism, the company claims to have detected all of the eight touristic attractions on the island and proves that none of these areas are under the project's area of influence. **The company cites visual impacts as the only negative effect of the project on tourism, and in order to minimize its importance, it employs three main arguments:** first, that **landscape, as a resource, is only partially being exploited in this island;** second, that **the visual impacts are restricted to a radius of 1.5 km, thus not affecting** tourist activities occurring in other areas of the island; and finally that alterations to the landscape are not important because the landscape in question is not unique but rather typical of the entire region. Accordingly, SERNATUR, the State's Office for Tourism, supports the company's opinion that the potential impacts of the mine on tourism are trivial. A graphic demonstration of the company's dismissal of visual impacts is provided in a statement by *Estancia Invierno*, who claimed that **"landscape as resource is not a good that is currently exploited [by the estate's residents]"** (Mina Invierno S. A., 2010).

With regards to the 10 observations that were finally accepted, and actually led to a series of obligatory measures to be adopted by the project, these included: issues of adequate monitoring and reporting of suspended particulate matter (SPM) emissions; the vital impact of two routes to be used by the project; an approval

of the project's area of influence by the SEA; the monitoring of *chorlo de Magallanes* (*Pluvianellus socialis*) species in one of the island's lakes; and the reporting of new flora species found in the area of influence prior to the mine's construction.

As mentioned earlier, these accepted observations respond to technical requirements that are either legally or scientifically justifiable. Although some of these amendments may partially ameliorate ranching and tourist activity conditions on *Isla Riesco*, they do not fully respond to the community's demand for a deeper revision of State-led development plans for the island.

This last omission coincides with the thesis that the Chilean SEA does operate in a post-political fashion, with the final aim to safeguard and implement the consensuses mentioned earlier. Accordingly, the 'denial' of the company and the State on the mining activity's negative impacts on ranching and tourism indicates a prevalence of mining over other activities (the mining privilege consensus). Additionally, the claims for the harmonious historical co-existence between ranching and carbon mining depict the generalized belief that mining is an intrinsic part of the *Magallanes*' Region past and future, as well as a 'natural' path for development.

Therefore, these assumed consensuses finally 'nullified' the developed dialogue during the SEA public participation process, permitting the omission or rejection of valid worries of the *Isla Riesco* inhabitants on the future development of their island, for being contradictory or simply marginal to the prevalent development ideas.

7. Conclusions

The *Mina Invierno* coal-mining project demonstrates that the Chilean decision-making process on environmental issues is based on the logic of exclusion that consists of a lack of actual recognition and participation. It must be noted, that the SEA is a rigid system that can produce only two possible outcomes, without any intermediate options; the approval or rejection of the assessed projects. Under this binominal scheme, it should be expected that positions for or against projects would be rigid and susceptible to conflict. In addition, because the system is exclusionary, it is not surprising that the evaluation process is often accompanied by environmental conflict.

Technically speaking, the Chilean SEA is a participative system that makes decisions solely on scientific criteria. Nevertheless, participation is sterile and decisions are made on political grounds. The mechanisms described in this paper demonstrate that the SEA is an unfair system that does not recognize those lifestyles associated with values that differ from the prevailing consensuses.

Our results verify that environmental injustice is not always toward minority groups and marginalized peoples. In the case of *Mina Invierno*, what became excluded were the values, rationales and lifestyles of those opposed to the predominant development model. In other words, what was not recognized, what did not participate, were ideas and not people. Therefore, in order to assess any case of environmental injustice, instead of framing the tensions in terms of participation–recognition–distribution, scholars should also focus on how communities (whatever background they have) can counter argue the prevailing consensuses that sustain their situation.

Given that the SEA serves as a mechanism for imposing economic and territorial policies, views that are resisted by certain sectors of Chilean society remain unconsidered. What the *Mina Invierno* case shows, is that the opponents (AIR) have moved from the direct confrontation with the mine (which they still do) to build solidarity networks with other communities affected by coal, looking for broader political connections to “politicize the unpoliticized” and create broader paths of resistance.

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