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FRAMEWORKS FOR ENVIRONMENTAL POLICYMAKING IN BRAZIL
AND CHILE: A COMPARATIVE POLICYMAKING ANALYSIS OF THE
BELO MONTE AND HIDROAYSÉN DAMS

by

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A thesis submitted in partial fulfillment of the requirements
for the Honors in the Major Program in International and Global Studies
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Abstract

A global proliferation of large dam construction since the 1950s has been accompanied by scientific research challenging the benefit of these projects while drawing attention to their numerous negative environmental and social impacts. The institutions that assess the costs and benefits associated with large dam proposals, creating policies either approving, altering, or disapproving them, collectively form what is known as a policymaking framework. Examining these frameworks allows observers to trace policies through outlined decision-making processes and can help to reveal inherent biases within those systems that may impact policy outcomes. Often, divergent policy outcomes, like the those observed in the cases of the Belo Monte dam in Brazil and HidroAysén dam in Chile, are a result of variations in the environmental policymaking frameworks of the deviating cases. The subjects of this study present similar arrangements of costs and benefits but resulted incongruous policy outcomes, specifically that the HidroAysén dam was not built while the Belo Monte dam is currently under construction. Existing bodies of literature outlining the environmental policymaking frameworks of Chile and Brazil fail to fully address the influence of external variables, including presidential influence, corruption, and electoral politics, on these cases. This project synthesizes an outline of the environmental policymaking frameworks of Chile and Brazil from existing literature and uses the divergent cases of the Belo Monte and HidroAysén dams to provide evidence for the incorporation of these external variables to better understand the incongruous policy outcomes these frameworks produce.

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List of Abbreviations

ADIN.....	<i>Ação Direta de Inconstitucionalidade</i> , Direct Action of Unconstitutionality
AGU	<i>Advogado-Geral da União</i> , Attorney General of the Union
ALRCC	Aysén Life Reserve Citizen Coalition
BNDES	<i>Banco Nacional de Desenvolvimento Economico e Social</i> , Brazilian Development Bank
CDP.....	Council for the Defense of Patagonia
EIA.....	Environmental Impact Assessment
ENDESA.....	<i>Empresa Nacional de Electricidad S.A.</i> , National Electric Company
ENEL	<i>Ente nazionale per l'energia elettrica</i> , National Board of Electricity
FME	Free Market Environmentalism
FUNAI	<i>Fundação Nacional do Índio</i> , National Indian Foundation
IBAMA	<i>Instituto Brasileiro do Meio Ambiente e dos Recursos Naturais</i> , Brazilian Institute of Environment and Natural Resources
IMF	International Monetary Fund
ILO.....	International Labor Organization
MP.....	<i>Ministério Público</i> , Public Prosecutor
PIN	<i>Projecto de Integração Nacional</i> , National Intergration Project
PT.....	<i>Partido dos Travhalleros</i> , Workers' Party
PSR	<i>Patagonia Sin Represas</i> , Patagonia Without Dams
REC.....	Regional Environmental Commission
SS	<i>Suspensão de Segurança</i> , Security Suspension
STF.....	<i>Supremo Tribunal Federal</i> , Supreme Federal Tribunal

WD.....Water Directorate

Chapter 1: Introduction

Hydroelectric dams have played a significant role in human development and have many positive economic, social, and environmental impacts. Building dams connects markets through the development of infrastructure and can create thousands of construction jobs (World Commission on Dams, 2000, p. 99). The production of hydropower reduces the use of fossil fuels (World Commission on Dams, 2000, p. 14), providing 19% of the world's energy supply (CIA World Factbook, 2011). Dams enable the redirection of rivers, controlling flooding and improving inland transport (World Commission on Dams, 2000, p. ii). They allow crop irrigation, generate electricity, and supply urban areas with water for consumption. Humans have used dams for thousands of years and their use has grown exponentially in recent decades with new technology and increased demand from a growing global population (World Commission on Dams, 2000, p. 9).

In 1949 there were about 5,000 large dams worldwide (dams over 40ft tall are considered large), but by 2000 that number had increased to over 45,000 (World Commission on Dams, 2000, p. 8). Their proliferation has given rise to an understanding that the benefits received from their implementation can come at a great cost (HLPE, 2015, p. 44). For instance, altering a river to control seasonal flooding in one area may permanently flood another area upstream. Installing a hydroelectric dam for energy production may have a positive economic impact on an urban population receiving the energy, while causing a destructive "boom" in the economy of rural populations near the dam, permanently altering the economic and cultural

landscape (World Commission on Dams, 2000, p. 17). The distribution of costs and benefits among different populations makes the political process around dams highly contentious.

There are dams whose costs are justified by their benefits, but all too often "an unacceptable and unnecessary price has been paid" to secure the benefits of dams (World Commission on Dams, 2000, p. xxviii). The two cases examined in this thesis, the Belo Monte dam in Brazil and the proposed HidroAysén dam in Chile, have similar costs and benefits, which are discussed at length in the following section, and yet produce divergent outcomes. The respective costs and benefits of each proposed project pass through distinctive policymaking frameworks in each country, producing deviating results, namely that the HidroAysén dam was ultimately not built while the Belo Monte dam is currently under construction in Brazil.

Explaining these differing outcomes requires an examination of the policymaking processes behind each dam, through which these sets of costs and benefits, or "inputs," became policy.

The next section begins to compare Chile and Brazil by contrasting their relative energy needs along with the costs and benefits associated with hydroelectric dam building in each country.

Dams and Energy in Chile and Brazil

Dams may be built for a variety of reasons that vary by region. For instance, over 50% of large dams in Africa and Asia are single-purpose irrigation dams, as compared to less than 15% of dams in the Americas (World Commission on Dams, 2000, p. 12). Hydropower dams are the most common type found in South America, where this study focuses. South America has 28% of the world's river water, with 20% of the global supply held in the Amazon River Basin alone (Garcia, 2011, p. 42). This, in part, explains the focus on hydropower in the region, as water-rich

countries tend to develop dams for hydropower more than for other purposes (World Commission on Dams, 2000, p. 11).

The two dams discussed in this thesis represent the largest projects proposed in South America in recent decades: the Belo Monte dam in Brazil and the HidroAysén dam in Chile. Economic growth and rising oil prices in recent years have pushed both Chile and Brazil to search for new sources of energy in hydropower to avoid a looming energy crisis that could dampen future economic growth (Bermann et al., 2012).

In Chile, there is fear that the country's development could be stunted without new energy sources (Kelly, Larraín, & González, 2011, p. 2) as an increased energy supply is particularly important to the country's copper mining sector, the largest in the world (Ulmer & Perry, 2013). A report released in 2011 by Chile's National Commission of Energy states that Chile would need to double its energy capacity by 2021 (an increase of 7.2% annually) to sustain its current GDP growth rate (Randall, 2011, p. 17). Failure to do so could put at risk \$112 billion in mining investments (Ulmer & Cambero, 2013).

Brazil is similarly dependent on new sources of energy for development, requiring a 5.4% increase in production annually as of 2014 to keep up with increased demand (Bratman, 2014, p. 64). Brazil's economy, like Chile's, is heavily concentrated on primary goods and commodities (Veríssimo & Xavier, 2013, p. 82). These goods have a low aggregated value and a high energy-cost. In the early 2000s Brazilian cities had to contend with rolling blackouts and power rationing due to energy shortages (P. M. Fearnside, 2006, p. 7). This coincided with the emergence of the Belo Monte dam complex, as well as other hydroelectric plants as viable policy

solutions after years of being considered impractical due to their high social and environmental costs, which are discussed further on in this section (Bratman, 2014, p. 64).

Today, 70% of Brazil's energy comes from hydroelectric dams, but increasingly unreliable rainfalls since 2012 have forced Brazil's energy companies to consider scrambling to increase output from coal and nuclear plants to prevent further outages (Moreira, Cesaretti, Carajilescov, & Maiorino, 2015, pp. 334-335).

Table 1: Comparative Energy Potential of Brazil and Chile

	Coal Reserves per Capita	Natural Gas per Capita	Oil Reserves per Capita	Wind Potential per Capita	Solar Potential per Capita
Brazil	24.274 tn.	1,773.661 m ³	64.284 bbl.	.01571 km ²	121.717 MWh
Chile	9.489 tn.	5,440.841 m ³	8.330 bbl.	.00745 km ²	109.552 MWh

Source: (OpenEI, 2010)

While Chile and Brazil have a similar need for energy, the table above shows dissimilar access to energy resources (Table 1). Chile has significantly less access to fossil fuel reserves per capita than does Brazil, with the exception of natural gas (OpenEI, 2010). This suggests a more pressing need in Chile for hydropower as an alternative. We also know that water-rich countries are more likely to use hydropower (World Commission on Dams, 2000, p. 11). Since Chile has 54,868 m³ of renewable water resources per capita annually as compared to 42,886 m³ in Brazil (FAO of the United Nations, 2010), it follows that Chile would be more likely to implement large dams for hydroelectric generation.

The policies to build each of these dams were intended to achieve similar benefits of power generation in both countries, although the benefit would have been arguably greater in Chile considering its higher annual energy production growth requirements, greater deficit of fossil fuels, and higher concentration of water resources. Despite these benefits, the building of

the dams was not universally popular in either country, and opposition groups formed to voice similar concerns about the negative environmental, economic, and social impacts these large dam projects would bring.

The environmental and social costs associated with both projects were extreme, though demonstrably more so in the Brazilian case. The Belo Monte complex, including the Belo Monte hydroelectric dam and several smaller reservoir dams upstream to regulate water flow to the plant, was originally slated to flood approximately 22,000 km² of rainforest and indigenous land in the 1970s and 1980s (Carvalho, 2006, p. 256). Decades later, the project was downgraded, and flooding predictions decreased to include 400 km² of rainforest area (Forline & Assis, 2010, p. 30). Its construction also threatened the cultures and livelihoods of many native peoples and other riverside residents near the dam site. The construction boom that the project eventually caused in the nearby city of Altamira, in the Brazilian state of Pará, resulted in uncontrolled population growth (Alves, 2016), leading to sanitation issues and rising crime rates, for which the dams builders have been repeatedly sued (Bowater, 2016; Branford, 2016).

In Chile, the HidroAysén dam would have flooded approximately 59 km² of federal land (Schaeffer & Smits, 2015, p. 150), negatively impacting the ecology of several national parks, the endangered *huemul* deer, native fish species, local tourism, and culture (Jovais, 2014). Additionally, a proposed transmission line to transport generated power from the proposed dam site in southern Chile to urban centers and copper mines concentrated in the North of the country led to considerable public controversy over the line's potential impact on the Patagonia region's wildlife and aesthetic value (Ulmer & Perry, 2013). Critics argued that the 2000 kilometer

easements would have brought more damage to the environment than the dam itself (Berrizbeitia & Folch, 2015, pp. 25, 28; Kelly et al., 2011, p. 2).

These cases present similar types of costs and benefits, although the benefits were arguably greater in the Chilean case while the cost were demonstrably higher in the Brazilian case. This balance of inputs would suggest, all other things equal, that the Chilean dam would be the most likely to be built, with its greater benefits and lower costs. This, however, was not the outcome observed. It then follows that the divergent outcomes, namely that the HidroAysén dam was ultimately not built while the Belo Monte dam is currently under construction in Brazil, were produced because of differences in the policymaking frameworks of each country. This research thesis aims to identify variations in the decision-making processes through which these policies were created, synthesizing an expected framework for environmental policymaking in each country and tracing the policies through these frameworks to better understand the outcomes observed in each case.

Methods

Using existing literature on policymaking in Chile and Brazil, I identify the expected policymaking frameworks for each of the two dams, adding the additional variable of presidential influence to each case, which my own research has revealed as an important factor in the decision-making processes behind these two large dams. In the Brazilian case, I draw from the works of Katherine Hochstetler in *Greening Brazil* (2007), Matthew Taylor in *Judging Policy: Courts and Policy Reform in Democratic Brazil* (2008), and many others to outline a framework that emphasizes the roles of laws, regulatory bodies, and the Brazilian judiciary in determining policy outcomes in cases of large dam construction in Brazil. My own research into

the Belo Monte case indicates that this institutional framework does not always provide a stable or path dependent outline for policymaking. The external influence of the Brazilian president and political corruption, for instance, can produce an internal change in the policymaking process, altering the expected outcome.

In the Chilean case, I use the works of Manuel Prieto (2012), Colombina Schaeffer & Mattijs Smits (2015), and Carl Bauer (2012, 2015) to outline a framework that highlights the importance water-use rights, regulatory agencies, and the judiciary in perpetuating a model of "Free Market Environmentalism" that is systemically biased toward the development of large dams. Since the dam was not built in Chile, despite this bias, I suggest an additional variable to be included in the policymaking framework in this case. My own research into the HidroAysén case identifies the influence of the Chilean president and electoral politics on the outlined framework, altering the process behind the production of large dam policy.

Chapter 2: The Belo Monte Dam

The framework set forth in this chapter is synthesized from information relating to a variety of policy types in Brazil. From this information emerges a process specific to environmental policymaking. This chapter will first contextualize large dam construction within Brazilian history, then outline the expected framework for environmental policy, and finally apply this framework to the case of the Belo Monte dam, drawing conclusions on how the existing framework may be amended to include greater emphasis on the role of the Brazilian presidency and corruption, whose influence may alter the expected process of policymaking, shaping policy outcomes.

Context

A history of large-scale development, expansion, and conflict in the Brazilian Amazon contextualizes the environmental regulatory framework of Brazil. From the 1500s, the first centuries of Portuguese rule and expansion into Brazil decimated indigenous populations and their native lands (Sawyer, 1984). By the early 20th century, a pre-European population of an estimated two to five million indigenous people had dwindled to 150,000. In 1900, about half of the surviving native peoples in Brazil lived in areas largely isolated from white contact, such as Amazonia (Ramos, 1984, p. 83). An example of this is the Kayapó tribe, an integral part of the opposition coalition against the Belo Monte dam since in the 1980s which was not officially contacted by the Brazilian government until 1952 (Fisher, 1994, p. 223).

Increased economic activity and expansion into Amazonia throughout the 20th century brought an elevated threat to native peoples there. Industries such as timber, rubber, mining, and

ranching destroyed native lands and lifestyles (Bratman, 2014, p. 64; Ramos, 1984, pp. 84-85). During the Second World War, the *Marcha para o Oeste* encouraged the occupation of 'empty spaces' in Amazonia. In 1964 the Brazilian armed forces perpetrated a coup d'état against the administration of João Goulart and began the "bureaucratic colonization" of Amazonia (Fisher, 1994, p. 224). Brazil's new military government put an emphasis on frontier expansion through the *Projecto de Integração Nacional* (PIN), beginning in 1970. Reminiscent of American manifest destiny, PIN encouraged settlement in the Amazon frontier through land grants (Forline & Assis, 2010, p. 26). PIN also included infrastructure expansion initiatives such as the building of the Transamazon Highway to increase access to Amazonia for mineral research, settlement, and building hydroelectric dams (Ramos, 1984, p. 86). The nationalist sentiment behind the *Marcha para o Oeste* and PIN efforts tended to view indigenous groups as obstacles to modernization and development (Bratman, 2014, p. 64).

Since the time of the Military government, Eletronorte, a state-owned utility company, has been tasked with meeting Brazil's energy needs by building dams in Amazonia. In 1975, amongst hundreds of other dams, the company began plans to build the large Kararaô dam complex (later called the Belo Monte), which would flood approximately 22,000 km² of forest and displace roughly 6,000 people on the Xingu River in the Brazilian state of Pará (Carvalho, 2006, p. 256). This dam, and the 40 years of policymaking history that accompany it, is the subject of this Chapter.

Environmental Policymaking in Brazil

In the last 40 years, the environmental regulatory framework has evolved in Brazil as democratization has spread throughout the country. To accommodate this change, this section

divides the environmental policy framework of Brazil into two sections, separated by the event of the promulgation of the 1988 constitution. The first section details the environmental policymaking process in Brazil prior to 1988, and the second provides a contemporary framework, post-democratization.

Historical Framework for Environmental Policymaking in Brazil: Pre-1988

Prior to Brazil's 1988 constitution, the policymaking process was uncomplicated (Forline & Assis, 2010, p. 27). Policy opposition groups were excluded from the formal regulatory process (de Souza Pinto, 2016) and limited to the use of violence and protests as means of disrupting policy implementation (Fisher, 1994). External actors, such as the world bank, represented an important international force in Amazonian development, helping to drive environmental policy implementation in Brazil. Before the mid-1980s, the World Bank encouraged the “conquering” of the environment in part funding development projects in Amazonia, sidelining environmental concerns and indigenous peoples in the process (Wade, 2016, pp. 214-215).

Violence. While the World Bank and the Brazilian military government represent a coalition encouraging development in the Amazon, it may be said that the first environmental policy contestation coalitions in the Amazon were the indigenous tribes whose land was threatened by Brazil's expansionist policies. Their means of contestation were limited as many of the tribes were not formally recognized by the government (Fisher, 1994, p. 223). Even before the military regime came to power in 1964, indigenous tribes existed in a society and system where they had no formal voice and often resorted to raiding the camps of miners and rubber harvesters to resist their intrusion (Fisher, 1994, p. 224).

Publicity & Transnational Advocacy. New opportunities for informal disruption of the government's policies began to arise in the 1980s as coalitions of indigenous tribes began to network with transnational advocacy groups. They were increasingly able to gain widespread support for their causes through publicity on Brazilian and international media. Brazil's military government was heavily dependent on foreign aid and investment for its infrastructure development, which made the country's expansion into Amazonia particularly vulnerable to bad press in the international media. Thus, indigenous groups and other opposition forces relied heavily on publicity throughout the 1980s to discourage foreign funders from continuing to support development projects (Fisher, 1994, p. 220).

Contemporary Model of Environmental Policymaking in Brazil: Post-1988

The legacy of large-scale developments and intrusion into native lands prior to and during the military government played a key role in the development of the environmental regulatory framework that has existed since the promulgation of the 1988 Brazilian Constitution. Today, the federal structure and democratic institutional environment of the Brazilian government has created a new, multilevel system for environmental policymaking, in contrast with the authoritarian, single-track model of the military regime. The current system was designed in part as a response to the events of 1970s and 1980s, which saw large scale protests by groups without formal voice within the policymaking process. The 1988 constitution provided affected peoples with formal access to the decision-making process and protections at multiple levels, including through various legal rights (Article 239 of the Brazilian Constitution and ILO Convention 169), regulatory agencies (*Instituto Brasileiro do Meio Ambiente e dos Recursos Naturais* (IBAMA) and the National Indian Foundation), and through the Brazilian judicial

system (through the *Ministério Público*, the public prosecutor's office). These formal mechanisms, which are discussed at greater length in the following section, were designed to find common ground between the opposition and enabling coalitions and produce appropriate policy outcomes. The following section describes this framework in detail and has been drawn largely from the works of Katherine Hochstetler (2007) and Matthew Taylor (2008).

Legal Framework. The lasting impacts of activism during the 1970s and 1980s can be seen on the Brazil's contemporary legal framework, and more poignantly, on Brazil's 245 article constitution, promulgated in 1988 (Hochstetler & Keck, 2007, p. 226). Central to the document's formation was setting forth an outline for greater participation in policymaking (Hochstetler & Keck, 2007, p. 34). It contains environmental values and aimed to insure good governance in both indigenous affairs and environmental stewardship (P. M. Fearnside, 2006, p. 3). Article 231, Paragraph 3, for instance, requires that Brazil's National Congress directly vote on the approval of a license for any dam that could affect indigenous peoples (Brazil, 2010).

There are also International norms designed to offer protection to indigenous peoples in modern Brazil. The International Labor Organization's Indigenous and Tribal Peoples Convention (ILO No. 169), to which Brazil is a signatory, recognizes the rights of indigenous peoples to self-govern, control their own development (Article 7), and be involved in the formation of any policy relevant to their wellbeing through consultations (Article 6).

This framework contains specific stipulations and protections for indigenous peoples and the environment, as well as broad statements of intent and values (P. M. Fearnside, 2006, p. 3). It is within this framework that the regulatory and judicial systems discussed subsequently exist.

Regulatory System. Government agencies within the executive branch, such as the *Instituto Brasileiro do Meio Ambiente e dos Recursos Naturais Renováveis* (Ministry of Environment, IBAMA), and the National Indian Foundation (FUNAI) are charged with investigating the negative externalities of new policies in Amazonia, blocking those which fail to meet environmental and social standards. These agencies, along with the support of the legal framework, are designed to give voice to affected peoples, weighing the costs and benefits and producing legal and fair policy outcomes.

The complexity of the regulatory system, although designed to give affected peoples multiple formal avenues for participation in policymaking, can have a negative effect on political participation in Brazil (Hochstetler & Keck, 2007, p. 19). The system's intricacy gives rise to informal politicking and disenfranchisement. Here, disenfranchisement refers to the denial of one's right to participate and have voice within the decision-making process.

Informal Politicking and Disenfranchisement. Informal politicking is common in environmental policymaking in Brazil because the opposition of any policy requires the use of informal relationships to effectively access regulatory bodies for opposition. Because of the structural complexities of the system, agendas can often only be advanced through the building of personal relationships with the state and non-state actors who share jurisdiction and influence over the process (Hochstetler, 2011, p. 18). Those whose voice complexity pushes out of the formal system are the disenfranchised actors.

Disenfranchisement can occur even in a system as rich with opposition mechanisms and legal rights as Brazil's. Actors such as advocacy coalitions and affected peoples may be effectively disenfranchised by the sluggishness and formality of the official policymaking

process. Therefore, they must often employ highly connected individuals to informally network with enfranchised players who have power, like those in regulatory agencies, to push their agenda forward on their behalf (Hochstetler & Keck, 2007, p. 57). When this process fails to enfranchise policy opposition groups, or does not result in the policy outcome they desire, the court system is a possible next step (Scabin, Cruz, & Pedroso-Junior, 2014).

Brazilian Judiciary. In the contemporary policymaking process, the judicial system can be a powerful tool of opposition. It is frequently used as a last resort by opposition groups and social classes who would be otherwise left out of the decision making process; or for those whom the regulatory process has not produced a favorable outcome (Taylor, 2008, p. 4). In Brazil, the courts have a history of activism and of being used to protect vulnerable people groups (Ballard, 1999, p. 234). The institutional framework of the Brazilian court system is complicated and decentralized (Taylor, 2008, p. 16), much as the regulatory system for environmental policy. Certain elements of both the judicial system and of a contested policy itself affect to what extent, if at all, courts are accessed in policymaking in Brazil.

Policy Salience and Use of the Courts. The likelihood of the judicial system's involvement in an environmental policy is affected by the costs and benefits associated with contesting that policy within the court system (Taylor, 2008, p. 8). Costs for taking legal action in Brazil are generally low, but so is the probability of benefit in many cases. Matthew Taylor, in his book *Judging Policy*, highlights a policy's salience as a key factor in influencing a potential plaintiff's decision to bring suit against a policy in Brazil.

Policy salience has two aspects; the first is the degree to which a policy has a negative effect on the plaintiff(s), and the second is the noticeability of those effects. The negative impact

of a policy to a potential plaintiff can be difficult to quantify. Variables such as ethical and moral objection help to determine the amount of dissent a plaintiff has against a policy, and these are qualitative in nature. Dissent is a key variable, but it is more useful as anecdotal evidence. A more empirical method of understanding a policy's salience is to examine the noticeability of a policy's negative externalities.

Noticeability increases as negative externalities become more concentrated. Studies have shown that in cases with a higher concentration of costs, opposition actors are more likely to turn to the courts as a means of dissent (Taylor, 2008, p. 71). If a given policy, for instance a tariff on imported cars, distributes costs widely across a broad range of stakeholders (in this case, a marginal increase in price distributed to purchasers of imported automobiles), then the policy's salience would be considered low and the likelihood of opposition in the courts would decrease. In contrast, if costs are concentrated, as in the case of social security reform policy, the judicial system is far more likely to be called upon by the opposition (Taylor, 2008, p. 59). For this reason, environmental policies with costs concentrated, or localized, to distinct people groups (such as dams) are more likely to end up in court than are environmental policies with low salience and costs distributed across broad segments of the population (such as lenient pollution regulations).

Judicial Institutional Factors and Use of the Courts. The institutional framework of the Brazilian judicial system has an important influence on the relevance of the courts to environmental policymaking. As stated previously, the courts have a history of being used to protect vulnerable peoples in Brazil, particularly since the promulgation of the 1988 constitution (Ballard, 1999), but slow administrative performance has a negative effect on the judiciary's

ability to be used by policy opposition groups, particularly in cases of environmental policy. The court system in Brazil is overwhelmed by cases. This is in part due to the broad legal standing provided by the large and rights-rich Brazilian constitution (Taylor, 2008, p. 42). For most individuals and interest groups, the backlog of cases greatly reduces the potential benefit of a suit. Cases took an average of thirty-eight months to receive a verdict in the year 2000, and for those that worked their way up to the Supreme Federal Tribunal (STF), it took 8-10 years (Pineiro, ed. 2000, p. 187). This kind of backlog within the system reduces the likelihood of any meaningful action being taken on the part of the judiciary to halt or reverse policy within an adequate timeframe.

This is especially true for policies concerning large dams, which may begin construction before meaningful action can be taken in the courts (Scabin et al., 2014, p. 9). Although these types of policies often produce highly salient negative externalities, thus increasing the likelihood of activation of the courts, direct and expedient access to the highest level of the court system, the Supreme Federal Tribunal (STF), is necessary to overcome the barrier that poor judicial administrative performance presents to opposition groups accessing the judiciary.

Certain groups in Brazil can file what is known as an *Ação Direta de Inconstitucionalidade* (Direct Action of Unconstitutionality, ADIN). ADINs receive priority within the system and go directly to the STF, making them more effective for policy contestation (Taylor, 2008, p. 20). The right to file an ADIN is restricted to political parties, states, the Brazilian Bar Association and a handful of other professional unions and associations, and the *Ministério Público* (MP).

The MP, which becomes a key player in the Belo Monte case, is a public defender's office through which affected peoples have direct access to the courts if the formal processes of contestation fail them, or yield unfavorable results. The MP files approximately 15% of all ADINs in the Brazilian court system (Taylor, 2008, p. 81). Acting as an Ombudsman, it is often labeled the "fourth branch" of the Brazilian government and was instituted to preserve the government's social accountability in the midst of an extremely formal and slow judicial system (Power & Taylor, 2011, p. 187).

Citizens who feel their constitutional rights have been violated can contact the MP to request representation. The Brazilian constitution is extremely rights-rich, giving broad standing for opposition groups and individuals to contest policy on constitutional grounds through an ADIN. Without the support of the MP, the institutional environment does not allow expedient use of the courts for policy opposition. As will be evident in the Belo Monte case, despite the legal, value-based framework provided by the 1988 Constitution, the regulatory mechanisms of environmental policymaking often fail to enforce the stated ideals and laws of Brazil, and thus do not provide opposition members with adequate means of policy contestation. This often leads to the accession of the courts to challenge the *status quo*.

The Belo Monte Case

As with the outline of environmental policymaking in Brazil, the Belo Monte dam case is split into two sections. There is essentially one dam building policy, which at first fails, and is then reintroduced after several years. These episodes take place in separate frameworks of environmental policymaking, pre- and post-1988. The pre-1988 system was characterized by the exclusion of indigenous groups, the sidelining of environmental concerns, the influence of

expansionist modernization ideals (encapsulated by the *Marcha para o Oeste*, PIN, and the World Bank's economic development strategy), as well as the rise of transnational advocacy. The Post-1988 system is marked by the existence of legal, regulatory, and judicial systems aimed at correcting the problems of the past by creating avenues for contestation and participatory discourse within the environmental policymaking process. Here I trace the dam policy through each of these systems.

The Kararaô Dam: The Pre-1988 Environmental Policymaking Framework

When Brazil's military government came to power in 1964, new emphasis was put on development in Amazonia with the *Projecto de Integração Nacional*. In 1975, state-owned electricity company Eletronorte proposed the Kararaô dam (later called "Belo Monte") on the Xingu River in the state of Pará, located in the Amazon River basin (Carvalho, 2006, p. 257).

The policymaking system that existed when the dam was first proposed offered little to no formal access for policy contestation by indigenous groups affected by dam building (Forline & Assis, 2010, p. 27). This left opposition groups with several informal options to challenge the policy to build the Kararaô dam. The methods of contestation used by opposition coalitions in this case included public protest, publicity, and lobbying. The ways these mechanisms interrupted the political will for and economic feasibility of the project are discussed in this section.

Context. The economic feasibility of the Kararaô dam was fragile from its inception, as by 1975 Eletronorte had already drawn criticism for its poor planning in the building of other hydroelectric dams in Amazonia (Forline & Assis, 2010, pp. 26-28). The company also had accumulated massive debt by failing to accurately assess construction costs, a common issue in

large dam construction (World Commission on Dams, 2000, p. 120). It is estimated that cost overruns average 53% for hydroelectric dams in Latin America (World Commission on Dams, 2000, p. 39). In addition to the cost overruns, the environmental and social costs related to dam projects undertaken by Eletronorte were also vastly underestimated in this time period (Forline & Assis, 2010, p. 28).

Publicity. As the government began to transfer to civilian control in 1980s, the plans for many dam projects gained public attention. Publicity and participatory discourse increased against mega development in Amazonia (Rothman, 1993, p. 312). The Kararaô dam complex in particular was the subject of much public debate. The project's main dam and a smaller reservoir dam upstream, known as the Babaquara dam, would have flooded a combined 22,000 km², including indigenous lands, displacing thousands of native peoples (Hugh-Jones, 1988, p. 77). Anticipating a change in political will caused by growing awareness of these costs, Eletronorte preemptively responded to public opinion by hiring anthropologist Darrell Posey to carry out a social impact assessment. Posey, upon understanding the terrible threat of flooding the dam presented to indigenous lands, traveled to Washington D.C. with several representatives of the affected Kayapo tribe to lobby the World Bank (Forline & Assis, 2010, p. 29).

Lobbying. The World Bank was a major funder of the project, investing \$500 million. The opposition coalition was able to convince the World Bank to withdraw its loan due to the negative affects it would have on indigenous populations (Fox & Brown, 1998, p. 284). The Brazilian government retaliated by suing Posey for interfering with internal affairs (Forline & Assis, 2010, p. 29).

Protest. The conflict around the dam continued to gain international notoriety as the World Bank withdrew its funding. The movement to stop the dam attracted international media and gained the support of celebrities, such as Sting. This disruptive episode reached its apex at an international meeting held in the town of Altamira, in the Brazilian state of Pará in 1987. Celebrities, international media members, and representatives from Eletronorte and the Brazilian government all attended the meeting (Fox & Brown, 1998, p. 284). Amidst the hundreds of Brazilians and indigenous peoples that had gathered to voice their opinions on the Kararaô dam, one Kayapo woman brandished a machete at Eletronorte's director in an act of violent disruption, like that once common in the opposition of development in Amazonia. Once the meeting had concluded, the government opted to put an end to the project (Forline & Assis, 2010, p. 29).

Outcome. Apart from rising public pressure in the form of public protest, the reality was that without a loan from the World Bank the company found it impossible to fund the project, as Eletronorte's poor record for staying on budget with hydroelectric dams was well known (Carvalho, 2006, p. 258). Additionally, Brazil's 1988 Constitution was promulgated the next year and contained a stipulation that made a vote of approval from the National Congress a necessary condition to building any dam that would affect indigenous people (P. M. Fearnside, 2006, p. 3). This requirement increased the effect of public opinion on the project and those like it to an even greater extent by holding congress accountable to the acts of Eletronorte and its expansion into Amazonia (Hochstetler, 2011, p. 358).

The work of anti-dam advocates to disrupt the exclusionary environmental policymaking framework of pre-1988 Brazil succeed by limiting the regime's ability to obtain funding for dam projects and increasing social pressures simultaneously in the late 1980s. These pressures

effectively stopped dam building in Brazil for several years from 1987, when the Kararaô project was discontinued, until the early 1990s (Rothman, 2001, pp. 317-318). This is especially impressive in the context of the 30 year period from 1950-1979 in which 294 dams were built in Brazil (Hochstetler, 2011, p. 358).

State institutions and state-run energy companies, like Eletronorte, had begun to anticipate opposition and had institutionalized many of the environmental and social protections won by political activists in the 1980s. The Brazilian government itself was, however, lacking the institutional mechanisms necessary to protect affected peoples from new, private energy companies which began to appear in the countries energy sector after the end of the military regime in 1988. In the 1990s, neoliberal policies privatized much of the Brazilian energy sector. The emergence of private entities in the infantile post-democratization environmental policymaking system of the early 1990s presented a risk for the future of anti-dam advocacy in Brazil (Rothman, 2001, pp. 322-323).

The Belo Monte: The Post-1988 Environmental Policymaking Framework

The 1988 constitution changed the way affected peoples participated in policymaking in Brazil by opening new avenues of contestation and protections, including: legal rights, regulatory agencies, and the judicial system. This section focuses on the development of the Belo Monte dam's policy through the post-1988 regulatory and judicial systems, with the constitution and international norms creating the overarching legal environment for the process.

The first portion of this section focuses specifically on the policy's interactions with the regulatory processes in each presidential administration in Brazil since the year 2000, when the Belo Monte dam was re-proposed. The subsequent section will trace the opposition's

contestation of the policy through the judicial system, following the same framework of presidential administrations.

Belo Monte and the Post-1988 Regulatory System. In the early 2000s, public opposition to large dam construction waned in Brazil, and pressures to increase energy production grew parallel to outrage caused by energy rationing and rolling blackouts throughout the country. In 2000, Eletronorte submitted an application for a new project on the Xingu River—the Belo Monte dam, redrawing its plans from the Kararaô dam, but with mostly private funding (Carvalho, 2006, p. 259). The new plans proposed to be significantly less environmentally and socially destructive, flooding 400 km² of populated rainforest rather than the 22000km² previously planned (Forline & Assis, 2010, p. 30). The work of researchers would later reveal that the complete complex, including several undisclosed reservoir dams upstream from the plant, would flood approximately 6140 km² (P. M. Fearnside, 2006, p. 1).

Once the project was proposed, the policy began to work its way through the formal mechanisms of the new, post-1988 Brazilian environmental policymaking system. This process is rich with formal protections and avenues for contestation by opposition groups, involving various judicial bodies and regulatory agencies across multiple jurisdictions—state, federal, and local (though the jurisdictions, capabilities, and duties of these various actors are often vaguely defined by law and precedent in this system) (Hochstetler & Keck, 2007, pp. 16-17).

Generally, the first procedural step for a dam proponent is to conduct an environmental impact assessment (EIA) and submit it to regulatory agencies for approval. This environmental impact assessment process is often the focal point for contestation of policy on large dams in Brazil (Hochstetler, 2011, p. 356). IBAMA, the agency in charge of this process, and to whom

completed assessments are submitted, has a wide responsibility to consider both environmental and social issues (often called "socio-environmental") when licensing projects (Hochstetler & Keck, 2007, p. 13). This makes the licensing process a natural battleground for all disputes – social, economic, and environmental. Here we will follow the licensing/regulatory process through the Cardoso (1995-2003) and da Silva (2003-2011) administrations.

The Cardoso administration (*Partido da Social Democracia Brasileira*, 1995-2003).

Eletronorte commissioned its first environmental and social impact assessment from the *Universidade Federal do Pará* in 2000, during the last years of President Fernando Henrique Cardoso's administration. The legitimacy of the study was quickly called into question given Eletronorte's heavy oversight of the researchers (Forline & Assis, 2010, p. 32). Eletronorte also failed to disclose many details about the project to the researchers involved in the impact assessment. This included the fact that a series of five dams had been planned upstream from the main Belo Monte complex to regulate the Xingu River (Forline & Assis, 2010, pp. 31-32). Although the Belo Monte dam would only flood about 400 km², one of the five dams planned upstream, the Altamira/Babaquara dam, would flood an estimated 6140 km² of additional land (P. M. Fearnside, 2006, p. 1). If the rest of the dams had been disclosed, assessments would have likely taken much longer. This would not have been advantageous for Eletronorte, as the political climate in Brazil was ripe for a project like Belo Monte as a result of power shortages that had led to 9 months of rationing across Brazil (P. M. Fearnside, 2006, p. 7).

Eletronorte's failure to disclose this information angered many researchers. Local advocacy groups and researchers made formal complaints to the Brazilian state of Pará's regional office of the *Ministério Público* in an attempt to stop the continuation of the EIA studies, which the

viewed as fraudulent both because of Eletronorte's failure to disclose the secondary dams as well as because Brazil's congress had not voted to approve the commencement of impact studies in relation to the dam, which took place on indigenous land (Forline & Assis, 2010, p. 33). A suit from the MP against Eletronorte eventually went to the Supreme Federal Tribunal (STF), Brazil's highest appellate court.

Once the STF received the case from the MP, it ordered the impact assessment halted until irregularities could be worked out. During the yearlong court battle, however, Eletronorte had already begun a second EIA to replace the first while it was tied up in court. This preemptive response on the part of Eletronorte is an example of the policy enabling coalition's anticipatory reaction within the system (Hochstetler, 2011, p. 349). The second EIA was completed and submitted to IBAMA by late 2002, before it could be contested in court (Bratman, 2014, p. 67).

The da Silva administration (*Partido dos Trabalhadores*, 2003-2011). Soon after Lula da Silva began his first term, infrastructure development became a focus of his administration, despite campaign promises to curb environmental destruction (Hochstetler, 2011). Toward this end, in March of 2005, Lula severed Brazil's standing agreement with the International Monetary Fund (IMF). Under a new agreement brokered by the administration, Brazil's national bank (BNDES) would receive \$1 billion dollars annually from the IMF for development. This money would not be subject to the same constraints as the previous arrangement, which had barred IMF money from use in certain environmentally destructive projects. The new deal marked the funds for investment in public infrastructure projects, such as roads, government labs, irrigation

projects, and dams, like the Belo Monte, which had previously been off-limits for IMF funds (Rapoza, 2005).

Several months after the new IMF agreement, in July 2005, an act of congress authorized the Belo Monte project with funding from the BNDES. This authorization (decree 788/2005) was a clear breach of Article 239 of the Brazilian constitution, as no consultations were held with affected indigenous peoples (Melo Silva, 2014, p. 1). The license also violated terms of the Indigenous and Tribal Peoples Convention, resolving to protect the right of indigenous peoples to exercise control over their own development, which the Cardoso administration had signed three years earlier. These legal protections failed to allow for the increased participatory discourse intended by the constitution as congressional approval of the dam was skillfully and hastily pushed through the legislature by proponents of the dam in a moment of opportunity (P. M. Fearnside, 2006, p. 4).

Approval was granted to Eletronorte by the Brazilian congress and IBAMA with 40 non-contingent stipulations and an understanding that the company would eventually complete a study of Belo Monte's anthropological impact in addition to the EIA it had already completed (Hochstetler, 2011, p. 359). Activists contested this decree numerous times in court, leading to the project being briefly halted 5 times in the next 4 years (Hochstetler, 2011, pp. 359-360). The results of the court rulings were never longstanding, as will be discussed in the following section. Eventually, Eletronorte was granted a full entrepreneur qualification to build and operate the Belo Monte dam complex on April 20th, 2010 (Cabral Da Costa, 2014, p. 20).

Belo Monte and the Post-1988 Judicial System. From early on in the policymaking process, opposition groups turned to the judiciary to enforce their constitutional rights and pick

up where the regulatory agencies had left off (Forline & Assis, 2010, p. 33). The protections afforded indigenous populations in Brazil by various laws and regulatory agencies were not sufficient to stop the dam on the grounds of its cultural or environmental impact and the license for the project's construction was approved without proper consultation of indigenous groups and despite great environmental risk (P. M. Fearnside, 2006, p. 7). Parallel to our examination of the regulatory side of policymaking in Brazil post-1988, discussed here are the roles of judicial system in the Cardoso, da Silva, and Rousseff administrations. The administration of Dilma Rousseff (2011-2016) was not included in the previous section because the regulatory process had concluded prior to her administration in Brazil, although contestation in the judiciary was still ongoing at that time.

The Cardoso Administration (*Partido da Social Democracia Brasileira*, 1995-2003).

The first court case associated with the Belo Monte project was directed towards Eletronorte's original EIA. This case attacked the validity of research conducted through the *Universidade Federal do Pará*. It was processed through the federal court system and was appealed to the STF. There, an injunction against the project made by a lower court was upheld by deliberation of the Chief Justice of the STF in 2002. It postponed the project only until Eletronorte concluded its 'backup' EIA, which was already nearing completion.

The judiciary is commonly a method of last resort for contestation in Brazil (Taylor, 2008, p. 4), yet opponents of the Belo Monte dam were able to use the courts as an effective veto point early on in their contestation process. The broad standing provided by Brazil's long constitution, coupled with the existence of the MP to submit the ADIN on behalf of the opposition, allowed the courts to be used in this unusual way. The injunction against Belo Monte

coincided with the end of the administration of President Cardoso. Cardoso's administration would leave the decision on the future of the dam policy to the incoming administration of President Lula da Silva.

The da Silva Administration (*Partido dos Trabalhadores, 2003-2011*). The Partido dos Trabalhadores (PT), Lula's party, had been a major opponent to many the Cardoso administration's policies, including the Belo Monte. It had been prolific in the use of ADINs against policy reform since the installation of the 1988 Constitution. This, however, changed once the party gained control of the presidency (Taylor, 2008, p. 107). Lula's administration soon began implementing many of the same policies they had worked to block during the Cardoso administration.

One of the mantles that the PT took up once in office was the continued "development" of Amazonia. Da Silva went forward with large-scale developments like the Belo Monte, although previously assuring supporters that he would not (Hochstetler, 2011, p. 362). The administration's decision to broker a new development deal with the IMF in 2005 not only helped to finance the Belo Monte, but also energized the party's electoral base running up to the 2006 election as many blamed IMF oversight for the country's slow economic development (Rapoza, 2005). The act of congress that followed the new IMF deal authorized the Belo Monte project with funding from BNDES. This was met with lawsuits from the MP on behalf of the opposition.

The MP filed the first ADIN against the congressional decree in 2006. The suit argued that second EIA published by Eletronorte was not valid because it had been conducted prior to receiving congressional approval as required by Article 239 of the Brazilian Constitution. The

case would not receive a ruling for 6 years, but in 2007 the three companies involved with the dam's construction (Eletrobras, Odebrecht, and Camargo Corrêa) published a third EIA for the dam in anticipation of legal complications with the second. This anticipatory act shows how the MP was able to affect policy change with only the threat of a judicial ruling.

The Rousseff Administration (*Partido dos Trabalhadores*, 2011-2016). The third EIA did nothing to improve the situation for affected peoples, but served to further legitimize the dam's construction. In 2012, 6 years after it was filed, the MP's ADIN against the second EIA received a verdict from a lower court within the federal system. A federal judge of the Amazon Region, Souza Prudente, suspended the construction license for the Belo Monte dam complex due to chronic non-compliance and the construction consortium's failure to adequately consult indigenous tribes prior to congressional approval.

According to the ruling, Brazil's constitution only allows EIAs to be carried out after congressional approval has been given (Hurwitz, 2012). In the case of Belo Monte dam's license, congress had approved the dam before consulting indigenous populations and after an illegal EIA had been carried out, and thus the judge ruled that the dam's environmental and installation licenses were invalid (International Rivers, Amazon Watch, & AIDA, 2012). This ruling, however, came two years after a full license had already been granted to the Belo Monte consortium on the basis of their third EIA, and a year after construction had begun, making this episode of judicial intervention less effective (Scabin et al., 2014, p. 9).

Within days the ruling was suspended by the Chief Justice of the STF, Carlos Ayres Britto (Melo Silva, 2014, p. 1). The President Rousseff had directed the Attorney General's Office (AGU) of Brazil to request a *Suspensão de Segurança* (Security Suspension, SS) of the

ruling based, in part, on a "conflicting" ruling issued by the STF in 2007. The 2007 ruling to which the AGU referred had admitted the failure of congress to complete the proper consultations before authorization, but it had not cancelled the dam's licenses. Instead, the 2007 ruling had ordered the consultations to be completed at some point in the future. The STF publically decided to suspend the Prudente ruling because of this conflict, as well as because of worries that halting the Belo Monte project posed a grave risk to Brazil's economic stability (International Rivers, 2012). There has been, since that time, a considerable amount of evidence suggesting that corruption may have influenced the STF's decision, as well as Rousseff's decision to direct the AGU to request the suspension from the STF (Bermann et al., 2012; Hurwitz, 2012; International Rivers, 2012, 2016).

Conclusion

Throughout the lifespan of the Belo Monte, opposition groups contested the policy on the basis of their legal rights in both the regulatory and judicial systems (Hochstetler, 2011, p. 367). Despite the proven illegality of the dam, its construction was permitted. The Belo Monte's eventual construction was in part a result of failures within these systems, as well as the intervention of external actors on the framework, including presidential influence and corruption, which are discussed further on in this section. Certain failures are evident within each of these systems which help to explain the outcome of this case. The following two sections outline some of these issues which biased the environmental policymaking system toward the construction of the Belo Monte. The third and final section introduces corruption as an external variable relevant to the ultimate outcome of this case.

Regulatory Failures

The licensing branch of the Brazilian Ministry of Environment, IBAMA, played a role in biasing the system toward the policy enabling coalition for the Belo Monte dam. Despite sharing similar goals of protecting the environment and affected peoples, opposition coalitions found themselves set against IBAMA. Hochstetler rights that Brazil's "energy projects have also often pitted activists against the environmental agencies, and especially their environmental licensing arms" (Hochstetler, 2011, p. 356). The main factor that contributed toward conflict between policy opposition coalitions and IBAMA was the conditionality of operational and construction licenses.

Although IBAMA is generally effective at assessing costs in large dam construction, construction and operational licenses are often granted by IBAMA on conditional terms, despite the negative externalities assessed in the reports (P. M. Fearnside, 2015, p. 2). This is problematic, as IBAMA does not have the power to revoke conditional licenses from noncompliant companies. The agency can levy fines for noncompliance, but even when companies fail to pay those fines, IBAMA's only recourse is in the courts through legal suit (Paddock, 2011, p. 451).

The full operation permit for the Belo Monte, for instance, was granted with 40 "serious" conditions (Hochstetler, 2011, p. 360). When it became clear that the conditions were not being met, opposition groups sought remediation through the MP (Alves, 2016). IBAMA's granting of licenses to Belo Monte dam proponents on a conditional basis coupled with its lack of enforcement capabilities biased the regulatory system.

Judicial Failures

The judiciary plays an increasingly key role in the policymaking process in Brazil (de Souza Pinto, 2016, p. 1). It is an important means of policy contestation, but my research has found that its effectiveness as means of enforcement was limited in this case by inefficiencies within the system and the executive branch's ability to use a *Suspensão de Segurança* (SS) to overturn rulings.

Administrative Inefficiencies. The roles of different policy actors are poorly defined in the Brazilian system. IBAMA has no direct formal means of communication with the judiciary other than through suing noncompliant companies with the MP or its own attorneys, of whom there were only 28 in 2005, just one-third of the number necessary to keep up with cases (Paddock, 2011, p. 457). As a result, the enforcement process is inefficient and delayed. A 2005 study showed that there was an average delay of "244 workdays between the charging of a violation by IBAMA and the beginning of criminal proceedings" (Paddock, 2011, p. 468). This biases the system toward the policy enablers because in these cases the judge is called to make a decision concerning the license of a dam that is already under construction or, in some instances, operational (Scabin et al., 2014, p. 9).

Suspensão de Segurança. The *Suspensão de Segurança* (SS) was the mechanism used by the AGU under orders from Rousseff's administration to suspend a 2012 lower court ruling that had canceled the Belo Monte's licenses. The mechanism dates back to the military regime and is often used to overturn favorable rulings won by the MP in court (International Rivers, 2012). The SS allows Chief Justices to suspend decisions at the request of the AGU if a ruling threatens national security and the social and economic order of the country, or if the ruling

infringes on the executive branch's constitutional authority (International Rivers et al., 2012, p. 2; Scabin et al., 2014, p. 12).

National and Economic Security. Opposition parties have noted the weakness of the first argument in the face of strong evidence that alternative energy sources to both hydroelectricity and fossil fuels are abundant in Brazil. A coalition of opposition forces to dam projects in the Amazon released a report on the viability of wind and solar alternatives to hydroelectric power in 2012 in response to the use of the SS. This report contested the belief that cancelling the Belo Monte dam would have threatened energy stability (Bermann et al., 2012).

Infringement on executive authority. The SS can also be invoked to avoid infringing on executive authority. This is designed to keep the judiciary from overreaching into the executive branch's area of jurisdiction, the authority to license dams in this case. The STF's 2012 ruling to allow for the SS in the Belo Monte case assumed that the actions of IBAMA and the rest of the executive branch in licensing the dam had been legal, and thus the outcome should not be contested in court on technical grounds. The judiciary often takes the stance that it cannot overturn licenses based on noncompliance and exercises "self-restraint" in action against development this manner (Scabin et al., 2014, p. 12).

The legal, regulatory, and judicial mechanisms of environmental policymaking post-1988, though designed to increase political opportunity, were not adequate for the opposition coalitions to secure a favorable outcome in the Belo Monte case. These systemic failures in the regulatory and judicial processes serve as a possible explanation for the observed policy outcome, but it is important to mention corruption as a potential motive for the executive branch's persistence in pushing this policy and directing the AGU to file an SS.

Corruption

Although corruption is difficult to prove in the Belo Monte case at the moment, ongoing court cases will likely provide evidence of its role in the coming months (Viola, 2016). Apart from the Belo Monte case, there's no question that Brazil has a major corruption problem. It has been called "a troubling constant" in the political system of Brazil, reaching beyond the current regime (Power & Taylor, 2011, p. 1). Today, embezzlement of public funds in Brazil is estimated to total in the billions of dollars (Power & Taylor, 2011, p. 211). Power and Taylor state that

it is remarkable just how pervasive embezzlement and fraud in Brazilian public bidding and public contracts have been, surviving regime change, institutional innovations, and new accountability technologies. Democracy, the creation of accountability institutions, and mechanisms of electronic government have been unable to eliminate these practices. (p. 185)

Brazil scored 38/100 on Transparency International's 2015 Corruption Perceptions Index, with '0' being 'most corrupt' (Transparency International, 2015). Brazilians show the greatest overall concern for corruption globally, with 99% percent of Brazilians surveyed believing corruption was either a "very big" or "fairly big" problem in their country (Power & Taylor, 2011, pp. 3-4).

Corruption is most broadly defined as any "abuse of entrusted power for private gain" (Nye, 1967, p. 419). Where corruption is present, it can give the perpetuating coalition undue influence in the policy-making process. At its worst, corruption can result in state capture, which is when interest groups "shape and affect the formulation of laws and regulations through illicit

private payments to public officials and politicians; for instance by illicit contributions paid...to political parties and election campaigns [and] the sale of parliamentary votes on laws to private interests" (Martini, 2012, p. 3).

Many Latin American governments are affected by corruption at near endemic levels. Corruption is more likely to occur in countries where certain factors are present, including newly institutionalized democracy, economic reliance on natural resources, and inefficient bureaucracy (Santos & Costa, 2014, p. 379). Brazil has all of these traits.

In the last decade, there has been a push in Brazil to limit the influence of lobbyist groups through regulation, as corruption largely stems from unregulated lobbying activities (Power & Taylor, 2011, pp. 1-28). In countries with lax regulation, coalitions can use money and other goods to increase their influence on policy makers (Power & Taylor, 2011, p. 108).

Evidence of Corruption in the Belo Monte Case. Executive pressure on the judiciary to allow the Belo Monte dam to retain its licenses may have been a factor in the policy outcome of this case. Opposition groups have claimed that the STF's ruling to allow an SS points to a lack of judicial independence, considering that Chief Justice Britto is said to have met with various members of the Rousseff administration in the days leading up to his decision to suspend the lower court's ruling on the Belo Monte dam while declining requests to meet with representatives from affected indigenous groups (International Rivers, 2012).

There is also clear evidence that the contractors who won the bid for Belo Monte's development funneled money to Lula and Rousseff's election campaign. Early in 2016, news broke of a massive corruption probe carried out by the MP and Federal Police in Brazil known as *Lava Jato* (Operation Car Wash). The sting's findings implicated the Belo Monte contractors in

multiple counts of bribery. The PT's senate leader, Delcídio do Amaral, was arrested as part of the probe and gave testimony that bribes were collected by the party and by Rousseff during the bidding process for the dam's contracts, totaling R\$45m (Bowater, 2016). The use of dam contracts as leverage to receive illicit campaign donations presents a plausible motive for the executive branch's intimidation and hijacking of the judiciary through the use of the SS.

Effects. Corruption affects policymaking by giving certain coalitions undue influence in the process (Hellman et al., 2000). Preliminary evidence of illicit exchanges of goods between contractors associated with the Belo Monte case and government officials demonstrate that there is a possibility that the policy enabling coalition and contractors had undue influence in the decisions of key players in the policymaking process, including the president, Chief Justices, and IBAMA. Although it may be too early to make conclusive arguments, the evidence suggests that corruption ought to be considered as a potential access point for bias to manipulate the policymaking framework behind large dams in Brazil. Other mechanisms (legal, regulatory, judicial) are not rendered irrelevant by the existence of corruption, but its presence does distort the process. The extent of this distortion within the Belo Monte case is beyond the scope of this paper due to the ongoing nature of investigations into this matter.

Amended Framework

The framework I synthesized at the beginning of this chapter from the works of Hochstetler (2007) and Taylor (2008) emphasizes the roles of laws, regulatory bodies, and the Brazilian judiciary in determining policy outcomes in environmental policymaking. In addition to these factors, my own research identifies the role and influence of the president, and possibly

corruption, as additional keys variables in the determination of policy outcomes because of their ability to alter the policymaking framework.

Without the interference of the president through the AGU, the original 2012 ruling to revoke the Belo Monte's licenses would have likely been enforced, resulting in a different policy outcome. President Rousseff's use of the SS, possibly in the interest of receiving illicit campaign donations, disrupted the predicted framework of environmental policymaking and its ultimate outcome. Fully understanding the outcome in the Belo Monte case can requires a framework that includes not only the influence of legal rights, regulatory agencies, and the judiciary, but also the influence of corruption and presidential intervention on the formation of policy.

Chapter 3: The HidroAysén Dam

This chapter examines the environmental policymaking framework in Chile, then tracing the case of the HidroAysén dam through this framework. The Chilean system is much less complicated than the Brazilian process, thus this chapter is more concise in its assessments. The environmental policymaking framework in Chile is explicitly biased toward the approval of large dam policies (Prieto & Bauer, 2012), making it an interesting counterexample to the Brazilian regulatory framework, which is explicitly designed to mediate conflicts and increase political opportunity for affected peoples (Hochstetler & Keck, 2007, p. 34). The works of Manuel Prieto (2012) and Carl Bauer (2012, 2015) emphasize neoliberal ideologies, water-use rights, and the limits of both regulatory agencies and the judiciary as key factors in perpetuating this bias within the Chilean system.

Environmental Policymaking in Chile

Neoliberal Ideology

Chile's military government instituted many neoliberal policies in the 1970s and 1980s, including a type of environmental regulatory system known as "free market environmentalism" (FME). Regulatory systems like Brazil's impose taxes and regulations on policies concerning large dam construction to correct the market's failure to internalize the negative externalities associated with these projects. Conversely, FME seeks to correct for inefficiencies in environmental policymaking by encouraging fair use of the environment through the privatization of natural resources (Adler, 2002, p. 183). Fundamental to this system is the belief

that "efficiency...appears as an automatic effect caused by the valorization of goods through price signals" (Prieto & Bauer, 2012, p. 132) because property rights "create powerful incentives to preserve the value of that which is owned" (Adler, 2002, p. 183).

Allocating the use of natural resources as private property in Chile is assumed to sufficiently internalize all costs and benefits related to its use, creating an apolitical system where the use of water is determined by the "invisible hand" of efficiency-seeking forces within the water use market. The system, however, is demonstrably not neutral. An example of this partiality within the FME system can be found in the system's bias toward large dam construction, including evidence in three main areas: in the allocation of water-use rights, the regulatory system, and in the judiciary (Prieto & Bauer, 2012, p. 131).

Water-Use Rights

For an FME system to function, the right to water use must be allocated through a well-defined system in which property rights are both transferable and enforceable (Adler, 2002, p. 183). The framework for allocating water-use rights within Chile is biased toward hydroelectric dams because of their consideration of hydroelectric dams as "non-consumptive" water users (Prieto & Bauer, 2012, p. 135). Non-consumptive water use is that which ends with water being returned to its original source (Prieto & Bauer, 2012, p. 135). Users such as municipalities and industrial centers are generally considered consumptive users in Chile, however, hydroelectric plants of all sizes are considered non-consumptive. This gives hydroelectric plants a direct path to claiming a right to unregulated and free use of water through the acquisition of a permit.

Limited Regulatory Agencies

Another important factor in perpetuating bias toward large dam construction in the Chilean FME system is the regulatory agencies. In the Chilean process, a Regional Environmental Commission (REC) reviews submissions of EIAs and the Water Directorate (WD) grants water use rights to energy production companies that qualify.

EIAs in Chile are aimed at assessing the impact of projects in their planned final forms, which means that an approved project might look very different to the actual project that is constructed as almost everything can be changed without having to update the license. Dams are almost never denied licensure in Chile. In contrast to the Brazilian system, the EIA process in Chile is primarily designed to decrease externalities and give projects legitimacy and is not intended to mediate conflicts or produce compromise. This leaves the process largely without any formal access points for opposition groups (Prieto & Bauer, 2012, p. 132).

Limited Judiciary

Because of the legal and regulatory environments in Chile, courts have a much smaller role in the contestation large dam policy. That is not to say that they play no role, as they are important for solving conflicts between permitted water users (Prieto & Bauer, 2012, p. 142). Opposition parties in Brazil brought cases to court on either technical grounds (objecting to gaps and inconsistencies within the licensing process) or on human rights grounds (arguing over indigenous peoples' basic rights to water access or consultation). In Chile, the legal structure around hydroelectric plants weakens opposition groups' standing by privatizing water use (Prieto & Bauer, 2012, pp. 142-143). In its inability to be used as a mechanism for opposition groups the judiciary perpetuates the FME system and biases the policymaking process toward large dams.

The HidroAysén Case

ENDESA (*Empresa Nacional de Electricidad S.A.*, National Electric Company), the largest utility company in Chile, owned by Italian energy company ENEL (*Ente nazionale per l'energia elettrica*, National Board of Electricity) first announced plans to build a series of five dams in the Patagonian region of Aysén in 2004. The dam would flood about 59 km² and generate an estimated 2750 MW, almost one-third of Chile's current energy need (Merco Press, 2013; Schaeffer & Smits, 2015, p. 150). In 2006, the utility company Colbun joined the venture. ENDESA and Colbun hold a 100% duopoly of the Chilean energy market (Schaeffer & Smits, 2015, p. 149). If built, the added energy production of the HidroAysén dam complex would also have given the two companies control of 80% of Chile's energy production (Randall, 2011, p. 18).

Soon after Colbun joined the venture in 2006, organizations began to form in opposition to the project. These include the Aysén Life Reserve Citizen Coalition (ALRCC) and Council for the Defense of Patagonia (CDP). These organizations grew to become a vast coalition of regional, national, and transnational organizations behind the unifying campaign of *Patagonia Sin Represas* (Patagonia Without Dams, PSR) (Schaeffer & Smits, 2015, p. 150).

An Environmental Impact Assessment for the HidroAysén was first produced in August 2008. In May 2011, a Regional Environmental Commission approved it after several revisions. Publicity campaigns carried out by the opposition coalition led to increased public mistrust of the FME licensing process. Studies show that 83% of Chileans believed the dam would cause significant environmental damage, demonstrating doubt in the process (Randall, 2011, p. 18).

PSR's campaign cast doubt on Chilean President Sebastian Piñera's (2010-2014) financial

independence from the energy companies involved in the project. Existing frustration and mistrust of the Piñera presidency channeled itself into protests of the HidroAysén dam complex after its environmental and water use permits were granted. By strategically framing the issue during a campaign season, opposition groups were able to stir up protests against the project that were the largest in the country had seen since the "No" campaign helped to bring an end to General Augusto Pinochet's dictatorship in 1989 (Randall, 2011, p. 20).

In response to the protests, President Piñera organized a national commission to review the dam's approval. The committee formed by President Piñera voted not to make a decision on the dam project, forwarding evaluation to the next administration. They requested further studies on the impact of the dams to national parks, as well the *huemul* deer, native fish species, local tourism, and culture. The committee also stated that the existing impact assessment had not "adequately addressed the area's seismic risks or the potential impacts of climate change, or provided a relocation plan for potentially affected people" (Jovais, 2014; Randall, 2011).

In 2013, the Chilean election season saw the rise of the *Vota Sin Represas* campaign, attracting many political leaders to sign on to the cause of *Patagonia Sin Represas* (Schaeffer & Smits, 2015, p. 150). Nationally, 74% of Chileans disapproved of the project, making it an important electoral issue (Maxwell, 2013). Eight of nine major candidates for president in 2013 joined *Vota Sin Represas* in opposing the project (Maxwell, 2013).

In June of 2013, presidential candidate and former president Michelle Bachelet (2006-2010) announced her opposition to HidroAysén during a televised debate (Ulmer & Perry, 2013). Her statement, echoing that of many others in the race, deemed the project "not viable" (Ulmer & Cambero, 2013). Michelle Bachelet was elected later that year and came into office in March of

2014; the project was subsequently halted on June 10, 2014 under orders from Bachelet. Although the energy companies still retain the ability to change and resubmit the plans for the dam, such a change would be costly and not likely (Iturrieta & Ulmer, 2014), especially considering the an increase in shale gas production from the United States could likely become a less expensive and more stable energy solution for Chile in the form of liquid natural gas (Ulmer & Cambero, 2013).

Conclusion

The Chilean regulatory system is biased toward large dam construction because the open-market environmental policymaking framework, which is based on the privatization of natural resources, ignores many of hydroelectric dams' negative externalities. Once the regulatory system grants the energy companies water-use rights, the institutional security of property rights within the Chilean judiciary helps to insure maintenance of the status quo and discourages contestation in the courts (Prieto & Bauer, 2012, p. 144). In this way, the allocation of water-use rights, the regulatory system, and the judiciary perpetuate a model biased toward dam construction.

The regulatory and judicial systems acted as the framework suggested they would in the Chilean case by granting licenses to the dam project and the right to water use to the power companies. However, the expected policy outcome was not ultimately realized due to the influence of electoral politics and, ultimately, Chilean President Michelle Bachelet, who decided to discontinue the plans to build the HidroAysén dam, in line with promises made during her election campaign. Despite a great need for energy and an environmental policymaking

framework biased toward the HidroAysén dam, opposition groups were able to alter the framework externally through electoral politics.

This does not suggest that electoral politics is an important factor in the production of all environmental or large dam policies in Chile, but it does demonstrate a lack of path dependency in the framework these projects follow. Ultimately, the results of the HidroAysén case as observed in this study cannot be explained by mechanisms within the established environmental policymaking framework alone and require a broader, more nuanced view, involving an examination of the ways in which policy opposition groups use means outside of the framework, such as electoral politics, to influence the process and change policy.

Chapter 4: Conclusion

As expected, there are many ways in which the frameworks in each country differ in relation to the production of large dam policy. In Brazil, the post-1988 framework is designed to amplify the voices of policy opposition groups through a robust legal framework, regulatory agencies, and the judiciary. The stated intent of this system is clearly to allow for healthy, competitive debate of large dam policies (P. M. Fearnside, 2013; Hochstetler & Keck, 2007). Meanwhile, the framework in Chile is designed in a way that biases the process towards the creation of large dam policy through its "Free-Market Environmentalism" model and subsequent factors, including water-use rights and a limited regulatory system (Prieto & Bauer, 2012). My conclusion from studying these environmental policymaking frameworks is that, other things being equal, the Chilean system holds a greater bias toward large dams than does the Brazilian system.

If one were to remove the variations in these frameworks and solely consider the cost and benefits, or inputs, associated with each dam, one would again find the Chilean dam the more likely of the two to be built. Because the costs associated with the HidroAysén were arguably lower in Chile and the benefits higher than in Brazil, had they hypothetically passed through identical policymaking frameworks, it is reasonable to suggest that the HidroAysén would have been a more feasible project to implement. However, this is not what occurred, as the compounded influence of both the environmental policymaking frameworks and the costs and benefits associated with each case failed to produce the expected outcomes.

It follows from these observations that the existing frameworks of environmental policymaking in Brazil and Chile cannot fully explain the observed outcomes in the Belo Monte and HidroAysén cases. This does not mean that these frameworks are incorrect, or even necessarily insufficient as outlines. Variations between the frameworks do, in fact, explain certain aspects of the cases, if not their final outcomes. For example, it is important to note that the Chilean framework did produce licenses for the HidroAysén dam, as the framework and inputs would suggest, before the project was cancelled by Bachelet. Similarly, the Brazilian framework did result in a court ruling revoking of the Belo Monte dam's licenses before that decision was overturned by the Rousseff administration's use of an SS. Opposition groups in Brazil were also able to successfully lobby for the collection of millions of dollars' in reparations from the Belo Monte construction consortium for damages incurred by indigenous and other local populations, as well as for the environmental destruction caused by the dam (Agencia EFE, 2016; Alves, 2016; Hochstetler, 2011, p. 368). Variations in the environmental policymaking frameworks did influence the penultimate outcomes of the cases and are important for understanding the processes leading up to the eventual policy results, if not the final results themselves.

The main contribution of this study to these frameworks is the observation that these processes, though generally path dependent, are not as useful for predicting outcomes as assumed. They were useful for tracing policies to the point that external, intervening variables entered the processes, causing reversals of the policy outcomes. I suggest that, although the environmental policymaking processes acted as expected in the production of penultimate results in each case, the intervention of presidents in each case, themselves being affected by the

external influences of corruption and electoral politics, produced a change within the environmental policymaking process, reversing preliminary results of each framework. Existing literature and frameworks fail to fully address the influence of these external variables on the process. Therefore, the incorporation of these intervening variables to our understanding of these environmental policymaking frameworks is key to explaining certain incongruous policy outcomes.

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