Sustainable Development and Climate Change Policy: An Environmental Justice Case Study of Belo Monte Dam, Pará, Brazil

> "Let us not, however, flatter ourselves overmuch on account of our human victories over nature. For each such victory nature takes its revenge on us. Each victory, it is true, in the first place brings about the results we expected, but in the second and third places it has quite different, unforeseen effects which only too often cancel the first. — Frederick Engels[1]

Introduction

21st century civilization is discovering the effects of unfettered industrialization and growth. Scientists caution us on the effects of climate change while most advanced capitalist societies maintain business as usual production and consumption patterns. Climate change scientists conclude that to stave off catastrophic effects requires a marked and immediate decrease in CO2 emissions. In response, a new configuration of development studies emerged — sustainable development. Sustainable development discourse mobilizes a framework of inquiry that balances continued industrialization expansion and economic growth with renewable energy technology and ecological integrity. Many nation-states have incorporated this development model into their own policy formulations and highlight renewable energy production and consumption. The logic is that a decrease in the use of fossil fuels mitigates climate change and an increase in renewable energy creates a sustainable future. If only it was this simple.

Brazil is one of the fastest growing major economies in the world. As demand for energy increases, Brazil is steamrolling new renewable energy installations. My purpose in this paper is to critique the meta-narrative, which believes renewable energy is clean and environmentally sound, by examining one project in the heart of Brazil's Amazon - the Belo Monte dam. I argue that renewable energy development, hydroelectric in particular, creates externalities that harm the environment and the people who live in it. I will do this by first framing renewable energy production as a necessity for climate change mitigation. Second, I will examine Brazil's energy renewable energy policies, uses, and future needs and explain the Belo Monte dam's design plans. Third, I will briefly survey the dam affected indigenous tribes and their legal status in Brazil. I will then examine the domestic and international legal mechanisms that may bring a stop to Belo Monte dam construction and protect the indigenous people. Finally, I will examine

the current anti-dam social movement that emerged in opposition to the Belo Monte dam. This paper uncovers the human and ecological costs of mega engineering renewable energy projects. No one can deny the virtues of decreasing CO2 emissions and increasing renewable energy, but we have to ask ourselves — at what cost?

Climate Change Mitigation and Renewable Energy Development

The negotiations at the Durban Climate Change Conference in early December 2011 did not result in an international legal mechanism to decrease carbon emissions. Instead, the international community agreed that a binding treaty is necessary, but such an instrument would not exist until 2020. Until then, each state should implement a voluntary CO2 reduction policy. While some laud the conference as a major step towards climate change mitigation, the results are far from creating a sustainable energy infrastructure that mitigates climate change. The goal of the Durban negotiations is to stabilize the carbon parts per million (ppm) to 450 (we are at 390ppm now). 450pmm will see a probable increase of 2 degrees Celsius to the world's temperature. The International Energy Agency (IEA) published in its World Energy Outlook 2010 a 450 Scenario framework that statistically analyzes and projects current and future energy outputs, sources, and policies that could satisfy the 450ppm goal. While oil, coal, and gas will provide the main energy sources until 2035, renewable energy sources will play a critical role in climate change mitigation.

Renewable energy resources, such as hydropower, will continue to play a significant part in decreasing carbon emissions in electricity generation. Brazil is one of the vanguards of renewable energy use and production. Its share of renewables in electricity generation is one of the highest in the world.[2] The country invested $12.8 billion in 2008 and $7.8 billion in 2009 in renewable energy technologies.[3] According to IEA's report, Brazil must reduce their greenhouse-gas (GHG) emissions by 39% to meet the 450ppm scenario.[4] As part of Brazil's Ten Year Plan, an investment of $57 billion is earmarked for electricity, 70% of which will be for large hydropower and 30% for other alternative renewable energy sources, such as small hydropower, biomass and wind.[5] This plan projects 34GW of hydropower to be added in the next five years and 11GW of wind in the next eight.[6] While not a significant aspect of the Ten Year Plan, Brazil has immense potential for photovoltaic power (PV) with horizontal solar

irradiation in many regions being much higher than European countries.[7] If proper policy considerations are taken, the installed capacity of PV could be 11GW by 2025.[8] Brazil's Ten Year Plan also includes an incentive to encourage the use of solar water heating, aimed at reducing electricity consumption by 2,200 gigawatt-hours (GWh) per year by 2015.[9] Additionally, Brazil has also committed to reduce 800 metric tonnes (mt) of CO2 primarily through reduced deforestation.[10] This evidence exhibits a significant commitment to reducing CO2 emissions and increasing the use of renewable energy sources. By decreasing CO2 emissions while also generating renewable energy to support their development goals, Brazil is at the forefront, in many respects, of the sustainable development model.

Brazil's commitment to mitigating catastrophic climate change by decreasing CO2 emissions is a public good for the world community, but the increase of renewable resources comes at a cost. Brazil's plan to invest $40 billion and install 34GW in hydroelectric power by 2020 requires a significant amount of mega engineering dam construction on the Amazon and its tributaries. Currently, Brazil has the third largest installed hydroelectric capacity in the world with more than six hundred dams, which have displaced over one million people.[11] Because of the increased consumption of electricity in residential, commercial, and industrial sources, the need for more power is inherent. Electricity use from 2009-2010 increased by 7.8%.[12] In 2010 alone, the country faced 91 rolling blackouts.[13] The Brazilian Ministry of Mining and Energy projected the country must install 71.3GW by 2019 to meet the nation's energy demands.[14] To meet the consumption demand requires an average increase of 5.3% per year in the electricity sector.[15] The Belo Monte dam is instrumental, the Ministry states, to meet this increase in demand.

The most studied dam in Brazil's history, the Belo Monte dam is the center of debate between environment and indigenous protection interests, and Brazil's increasing development and energy needs. The dam, first proposed in the mid 70's, will cost an estimated $17 billion and will divert 80% of the Xingu River flow through two massive canals, and leave a 62-mile stretch of the river in permanent drought.[16] Located in the second largest state in Brazil, the dam will flood an estimated 200 square miles of forest and part of the city Altamira, displacing between 20,000-40,000 people from eighteen ethnic groups.[17] Performing at full capacity the dam will provide 11.2GW of power with most electricity routed to local mining operations before being routed to Rio De Janeiro and Sao Paulo.[18] Because of the seasonal nature of the

Xingu River, the dam engineers guarantee only a 4.5GW output capacity.[19] Activists and commentators contend this output variation makes this dam inefficient. Despite this, only China's 23GW Three Gorges Dam and the 14GW Itaipus dam, on the Brazilian and Paraguayan border, will exceed Belo Monte's output capacity.[20] The Belo Monte dam is the first in a string of proposed dams on the Xingu River. Five upstream dams —Altamira, Ipixuna, Kakraimoro, Iriri and Jarina, will further affect Amazon's biodiversity and indigenous peoples.[21] Many fear the Belo Monte dam will be the first of many that will change the face of the Amazon forever.

The Belo Monte Dam will cause significant impacts on the environment and species of the Xingu River. In Patrick MCully's book, Silenced Rivers: The Ecology and Politics of Large Dams, he lists the main environmental impacts of dams, which will be quoted in full —

> **A.** Impacts due to existence of dam and reservoir
> I. Upstream change from river valley to reservoir.
> 2. Changes in downstream morphology of riverbed and banks, delta, estuary and coastline due to altered sediment load.
> 3. Changes in downstream water quality: effects on river temperature, nutrient load, turbidity, dissolved gases, concentration of heavy metals and minerals.
> 4. Reduction of biodiversity due to the blocking of the movement of organisms and because of changes 1, 2 and 3 above. Superimposed upon the above impacts may be:
> B. Impacts due to pattern of dam operation
> 1. Changes in downstream hydrology:
> (a) change in total flows;
> (b) change in seasonal timing of flows;
> (c) short-term fluctuations in flows;
> (d) change in extreme high and low flows.
> 2. Changes in downstream morphology caused by altered flow pattern.
> 3. Changes in downstream water quality caused by altered flow pattern.
> 4. Reduction in riverine/riparian/floodplain habitat diversity, especially because of elimination of floods.[22]

Beyond these general environmental impacts, the Belo Monte dam's reservoir will become a breeding ground for the Anopheles Mosquito — a malaria vector.[23] The reservoir will also cause an increase in methane gas release as the submerged vegetation decomposes. One fifth of Brazil's climate change impact is methane emissions do mostly to their dams.[24] Belo Monte will harm many unique species that thrive along and in the Xingu River. For example, the reservoir will endanger the Zebra Pleco, Plant Eating Piranha, and the Xingu Poison Dart Frog, and cause the extinction of ten species of fish.[25] Also, the Blotched River Stingray, various turtles and other migratory fish will no longer have access to their breeding grounds.[26] Furthermore, the

deforestation caused by the dam's construction will displace the endangered White Cheeked Spider Monkey and the Black Bearded Saki Monkey.[27] The Belo Monte dam will cause irreversible environmental degradation and threaten the existence of unique animal species. The dam also threatens the continued existence of the indigenous tribes along the Xingu River.

The Xinguano Nation

The Belo Monte dam threatens the existence of the indigenous tribes' culture and connection with the land. Their long history at the hands of the conqueror and colonialist have placed them in a subordinated social and political position. The sovereign declares the indigenous do not own any property, but the indigenous tribes have lived continuously on the land for centuries. This continued existence justifies their right to self-determination and territorial rights.

In the Brazilian Amazon, the diverse indigenous tribes make up roughly 0.43 percent of the country's population – between 700,000 and 750,000 people.[28] The term indigenous denotes, "those who, while retaining totally or partially their traditional languages, institutions and lifestyles which distinguish them from the dominant society, occupied a particular area before other population groups arrived."[29] The Xinguano, or Xingu Nation, are a living cultural tradition that extends back not only a few generations, but centuries and millennia circa 800 AD.[30] Their culture traces back to the Arawak diaspora who dispersed themselves throughout the Amazon region. The upper Xingu is the "geographic endpoint of the Arawak diaspora."[31] The tribes located on the upper Xingu are — Waurá, Mehináku, Yawalapiti, Awetí, Kamayurá, Kalapálo, Kuikúru, Nauquá, Matipuhy, and Ikpeng.[32] On the lower Xingu are the Kayapó, Suyá, Jurúna, Trumaí, and Kayabí.[33] These diverse networks of tribes speak at least six dialects with variations between them.[34] Indigenous tribes in Brazil continue to carry on their traditions despite Brazil's development expansion. Marcos Terena, a Terena tribal member and spokesman for Indigenous tribes remarked —

> In Brazil 215 indigenous groups have survived in diverse settlements. Through their ceremonial songs they keep alive their languages and cultures. Each time the first cry of a newborn child breaks the forest silence, their hope for the indigenous way of life is renewed.[35]

The indigenous tribes' rich cultural history that spans centuries did not earn the respect of the state.

Brazil has dealt with the indigenous as conquerors —a people to be "dominated, assimilated, and suppressed."[36] The indigenous tribes were victims of the state's violent regimes. Until Brazil's independence in 1831, the state did not officially recognize the indigenous people as a human beings.[37] Brazil's Civil Code, established in 1916 and still in force today, mandated that "[t]he savages shall remain subject to the tutelary regimen established by special laws and regulations which shall cease as they become adapted to the civilization of the country."[38] Later in 1928, the legislature implemented Codigo Civil do Brasil art. 6. Article 6 by Decree No. 5464 that —

> created four categories of Indians based on their degree of assimilation into Brazilian society, as demonstrated by location and type of residence and religious and social practices. Rights of property ownership and civil law capacity were derived from the level of integration attained.[39]

This legislation established the indigenous tribes as wards of the state effectively transferring their social and political power to the government. Despite their legal personality and centuries of oppression, the Xinguano Nation holds fast to their traditions and cultural integrity.

The Xingu nation's connection with the land is critical to their cosmological interpretation of the physical universe. Noted Anthropologist, Michael Heckberger, has spent extensive time studying the tribes in the upper Xingu region. In his book, The Ecology of Power: Culture, Place, and Personhood in the Southern Amazon, A.D. 1000-2000, he observes, "knowledge and power are...tightly associated with concepts of the body, notably the organization of houses and village, the spectacle of chiefly rites-of-passage, and the continuity of names, social persons, and places."[40] He writes about the hierarchical structure of the tribe as tied to where one lives, sits, walks, and sleeps.[41] The plaza itself, "represents all the social, economic, political, cartographic, cosmological principles that go into making of the social person of the 'community.'"[42] He goes on, "[t]he plaza is more than a bounded physical space, it is also a social mnemonic, which brings together all the social identities in the world, and mediates among them. It is also a container of power, the primary site of a symbolic economy of power: the theater state or political economy in its ritual phase."[43] The Xinguano place their social and economic hierarchy onto specifically geographic places and spaces. If the

government relocates them as part of the Belo Monte project, they will lose the unique and important connection to their land. The tribes cannot recreate the precise layout of structures, walking paths, and their profound connection to the land that they have resided in for centuries. The indigenous tribes form an integral part of the ecosystem, and it them.

Constructing the Belo Monte dam cannot sustain the lives of the indigenous people who live upon the Xingu River. The receding waters of the Xingu would make it impossible for communities to travel on the river and would cause the loss of migratory fish used as a staple in their diet.[44] The word Xingu means "house of God" and its destruction will represent nothing less than a cosmological catastrophe to them.[45] Many tribe members would rather die than move from their cultural origin. Kayapo leader Raoni Metuktire stated to one reporter, "I think that today the war is about to start once more and the Indians will be forced to kill the white men again so they leave our lands alone...I think the white man wants too much, our water, our land. There will be a war so the white man cannot interfere in our lands again."[46] Luis Xipaya, another of the region's indigenous leaders, stated "[t]here will be bloodshed and the government will be responsible for that. I do not accept the Belo Monte dam."[47] Most indigenous people refuse assimilation and relocation. They reject the loss of their culture for the benefit of national development. As one author observes, “[i]ndigenous identity...can only be protected by indigenous control over the matters that affect them.”[48] In essence – self-determination.

Centuries long residence and a deep connection with the land justifies territorial rights for the Xinguano Nation. In Avery Kolers’ book, Land, Conflict, and Justice: A Political Theory of Territory, he argues national sovereignty does not necessarily link to territorial rights. Because of the indigenous tribes legal status, they do not own the property on which they live — the sovereign does. What Kolers argues is that sovereignty does not equal territorial rights and ownership. He develops the concept of ethnogeography as the “conception of land made concrete through acts of bounding, controlling, and shaping space, and being shaped by it in turn, over time” and that to have territorial rights is to “have one's ethnogeography made viable through political, legal, economic, and other institutions.”[49] The entity that manifests this ethnogeography is what he calls an ethnogeographic community, “a group of people marked out by their shared conception of land and their densely and pervasively interacting patterns of land use.”[50] Kolers concludes that, “[o]nly ethnogeographic communities are eligible for territorial rights.”[51] The indigenous peoples living on or near the Xingu for centuries have formed their

own set of institutions that shape their hierarchical structure of being with their land. Therefore, the Xingu tribes, and other peoples dispossessed of their land, should have territorial rights. And through this right, "they can freely determine their political status and freely pursue their economic, social and cultural development."[52] A development that would not ensure the destruction of their culture and land, but one that honors the spiritual integrity of their culture and the ecological integrity of their environment.

Indigenous territorial rights and self-determination does not require recognizing a separate sovereign state, but needs, at least, autonomy concerning culture and land use. Alexandra Xanthaki, an indigenous rights expert notes that –

> Indigenous peoples perceive the recognition of their right to self-determination as a formal proclamation of denouncing the policies of destruction and assimilation that they have experienced in the past and an acknowledgment that they can determine their life without interference by states.[53]

Self-determination and territorial rights would empower indigenous peoples to transform their being beyond the subordinated and unjust identities the colonial powers placed upon them. Through this empowered representation, the indigenous people can negotiate their own terms to the powers that control continual development instead of being marginalized by them. The Belo Monte dam reinscribes and reproduces centuries old development discourse based in contempt and bigotry. The tribes demand a governance system that provides an opportunity for freedom without the fear of cultural death.

Brazil's Legal Protections for Indigenous Tribes

Brazil's historical treatment of the indigenous tribes has neglected the tribes basic human rights. Recent developments in Governance has seen the creation of a governmental body that works in favor of the indigenous tribes and an article in the Federal Constitution that enumerates their constitutional protections. Moreover, the reconfiguration of the government's public prosecutors has seen a dramatic increase in the enforcement of environmental protection law.

The Belo Monte dam is an environmental justice issue because it neglects severe environmental and cultural impacts. Bunyan Bryant, a pioneer of environmental justice theory, defines environmental justice as, "those cultural norms and values, rules, regulations, behaviors,

policies, and decisions to support sustainable communities, where people can interact with confidence that their environment is safe, nurturing, and protective."[54] The Belo Monte dam will not only irreversibly affect the biodiversity surrounding the Xingu River, but will displace thousands of indigenous people. In other words, the dam will disproportionately affect indigenous populations that lack the social capital to change the processes of development through political action. The government must consider environmental justice issues at every phase of development – from policy formation to the licensing and enforcement stages.[55] The Brazilian government, despite its many environmental laws and its proclaimed interest in preserving indigenous culture, has not integrated environmental justice into its decision-making. Luke Cole asserted that "[e]nvironmental laws are not designed by or for poor people...those with political and economic power have used environmental laws in ways which have resulted in poor people bearing a disproportionate share of environmental hazards."[56] This accurately conveys the state of affairs in Brazil and many other nations. Development for the entire nation results in destroyed indigenous lands. In this section of the paper, I will examine the legal tools available to the indigenous peoples and their supporters.

The Federal Constitution of 1988 provides protections to indigenous people specifically on natural resource exploitation. Article 231 Paragraph 3 reads –

> Hydric resources, including energetic potentials, may only be exploited, and mineral riches in Indian land may only be prospected and mined with the authorization of the National Congress, after hearing the communities involved, and the participation in the results of such mining shall be ensured to them, as set forth by law.

This section requires community meetings and hearings with those affected by the development projects. Consultation meetings and community involvement are required before any license approval. This article of the Constitution provides procedural justice in the sense that resource exploitation projects considers the affected's voice in decision-making. However, multiple tribal leaders have denounced the government's claim that they took part in official meetings regarding Belo Monte. The government held only four public hearings, with security forces impending entrance of civil servants, activists, and NGOs, in cities offering little or no access to remote populations.[57] The federal government did not follow the only constitutionally required legal mechanism that protects the indigenous people from natural resource exploitation in areas that affect them and Congress arbitrarily passed Belo Monte dam construction in 2005.[58]

The Brazilian government body that carries out responsibility for policies relating to

indigenous peoples is the National Indian Foundation (FUNAI).[59] Established in 1967 in response to the 5,000 page Figueiredo report that revealed mass atrocities committed upon the indigenous populations, which included mass murder, torture, slavery, sexual abuse and land theft.[60] Funai's mission is to "[c]oordinate the formulation and implementation of Indian policy of the Brazilian state, instituting effective mechanisms of social control and participatory management, to protect and promote the rights of indigenous peoples."[61] Moreover, FUNAI "has an obligation to speak out in any licensing of works that directly or indirectly affect the land and the indigenous communities."[62] As an arm of the government, FUNAI has supported the Belo Monte dam construction by developing programs to ensure Indigenous assimilation and compensation.

FUNAI's Programs developed specifically for Belo Monte development seek to educate and provide basic social services to the Indigenous tribes instead dam construction. This first program is entitled, "Citizen Action in the Middle Xingu Indigenous Lands."[63] This program seeks to secure disbursement of basic civil and social rights by issuing birth certificates, identity cards, and working papers.[64] This in turn allows FUNAI to register the families for federal support programs. In other words, FUNAI is instituting a cultural assimilation program and database for tribe resettlement. The government seeks to improve tribal lives by integrating them into a modern political and economic system separate from their culture. Another FUNAI program, required for the dam construction license, is the "Indigenous Communication Program." Here, FUNAI set up an information outpost in Altamira. FUNAI radio-linked the center to 25 tribes affected by Belo Monte.[65] FUNAI communicates public service announcements and meeting information to the isolated tribes in this way. Finally, FUNAI published three manuals on the licensing process. They are entitled, "Environmental Licensing and Indigenous Communities", "Belo Monte Hydroelectric Plant and the Indigenous Communities - Monitoring" and "Manual for Users of the system Radiophonie."[66] FUNAI published these documents in Portuguese – not in any tribal dialect. FUNAI's unofficial position is the dam will be built. FUNAI designed their programs for indigenous adaptation and assimilation – not opposition or advocacy. The final government institution that can protect indigenous people and the environment is the Ministério Público Federal.

Mandated by the Federal Constitution, the Ministério Público Federal (MPF) is the main environmental law enforcement body in Brazil. It is an independent institution that creates its

own budget, salaries and job openings.[67] The governor appoints an attorney general, but the list is limited to three pre-approved prosecutors.[68] This independence provides some insulation from political and public influence – much like America's judiciary. According to Lesley McAllister's study of Brazil's public prosecutors, "there were about 10,000 public prosecutors in 2003. Of these, over 2,000 were responsible for environmental protection, and perhaps about 200 worked in this area exclusively."[69] The prosecutor can request information from private or public entities and use this information in their investigation and, if the entity fails to comply, the prosecutor can hold any agency official criminally liable.[70] Under the environmental crimes law, it is illegal for a public official to state false or incomplete information in the environmental licensing process or to issue an environmental license that does not comply with environmental laws.[71] A public prosecutor can also impose civil liability if an environmental harm has occurred or to prevent one from happening.[72] The tools they can use to enforce the law against violators are a court order to pay money damages, stop further action, or to abstain any action altogether. [73] The MPF has taken decisive action in opposition to the Belo Monte dam.

On November 17, 2011, the MPF filed a civil action seeking an immediate suspension of the Belo Monte construction.[74] The prosecutors cite the Environmental Impact Studies and state the dam will destroy irreplaceable biodiversity and displace indigenous peoples.[75] The MPF also sought information from the Belo Monte construction group concerning the groups commitments to the affected indigenous peoples.[76] In December 2010, MPF prosecutors visited the Belo Monte construction site and found the construction site had not met the environmental conditions required in the preparatory license.[77] The state prosecutor stated, "[u]ntil now, most of the conditions at ground zero are far short of schedule."[78] One month later, the MPF filed a civil action against the Brazilian Institute of Environment and Renewable Natural Resources (IBAMA), Brazil's environmental enforcement agency, for illegally approving a preparatory construction license for the Belo Monte dam.[79] The MPF found that none of the conditions were completed and approving a license in this fashion is irregular.[80] One prosecutor went on record stating, "IBAMA is the biggest environmental offender in the Amazon."[81] This lawsuit is the tenth proposed by the MPF against irregularities in the Belo Monte project. The court will pronounce on at least nine of these actions.[82] Clearly, the MPF is an active advocate for environmental justice in the Amazon. Their commitment to the rule of law in both the licensing process and respecting the Constitution plays a significant role in the Belo Monte project. The

federal judiciary hasn't been so principled.

The licensing approval process has been a contentious area of judicial decision-making. In late January 2011, IBAMA granted a license to clear forest at the project site to prepare for construction work.[83] On February 25, 2011, a federal court judge in Para State, halted construction on the dam until the construction company met all 29 required environmental criteria.[84] However, on March 3rd, Judge Olindo Menezes of a higher federal court overturned the construction suspension, with work once again set to resume on the controversial dam.[85] Following the March 3rd decision preparatory construction began in haste with vast deforestation and highway construction.[86] After three decades of planning and debate, IBAMA granted a license to build the dam on June 1st.[87] As part of this license, the north energy consortium, financiers of the project, will pay $1.9 billion and the Brazilian government $314 million for "social-environmental measures" to assist people affected by the flood and to offset the environmental effects.[88] Despite this initial arrangement, Judge Almeida, on October 19th, agreed with public prosecutors that the 2005 legislative decree sanctioning construction of the Belo Monte dam was illegal because a consultation process with threatened indigenous communities - guaranteed under Article 231 of the Constitution – was not first carried out by Congress – and halted construction.[89] However, this decision did not last long. On November 9th, Judge Cardoso ruled that indigenous communities need not be consulted since the dam's infrastructure and reservoirs will not be located on tribal lands, and if consultation was required in another project, the indigenous should feel "privileged".[90] This decision currently stands and Belo Monte construction continues.

The Belo Monte project is challenging the domestic legal protections granted to the indigenous tribes. The Brazilian government sees this project as a necessity and is influencing the integrity of the legal system. FUNAI, while still acting in the interest of the tribes, is implementing assimilation programs to ease the dam's impacts. The MPF, and independent prosecutorial institution, enforces the law and challenges the Belo Monte licensing process. However, the MPF's power stops short of the judiciary who eventually ruled the Belo Monte construction is legal. The indigenous tribes may have to look outside of Brazil for justice.

International Law Mechanisms Protecting Indigenous Peoples

There are several international legal instruments and enforcement mechanisms that are relevant to both indigenous peoples and their environment, but only two of these have a potential to stop Belo Monte: The International Labour Organization (No. 169) Concerning Indigenous and Tribal Peoples in Independent Countries and the Inter-American Commission on Human Rights (IACHR). Laura Westra argues that the pervasiveness and multiplicity of human rights treaties and conventions that include environmental and indigenous rights are non-derogable rights that exist beyond the limited reach of state and domestic law.[91] This would mean that environmental and social harms such as Belo Monte could not be carried out — even if those actions are legal within the host country. However, the international community has not accepted her argument. Until then, the IACHR and ILO are the Xinguano Nations most effective tools.

ILO.169 is a binding legal convention that can provide recourse and reinforcement for the movement against Belo Monte. The Convention requires Brazil to follow the following duties –

> a. adopt special measures to safeguard the environment of indigenous and tribal peoples;
> b. assess environmental impacts to indigenous and tribal peoples from any development activities and consult with such peoples on such assessments;
> c. protect and preserve the environment of indigenous and tribal territories;
> d safeguard the right of indigenous and tribal peoples to participate in the use, management, and conservation of natural resources on or beneath their land; and
> e. consult with indigenous and tribal peoples regarding their relocation in light of development activities and safeguard their right to return after the development activity ends.[92]

Of particular note is the consultation requirement. The ILO. 169 further provides, "[i]f an appropriate consultation process is not developed with the indigenous and tribal institutions or organizations that are truly representative of the peoples in question, then the resulting consultations would not comply with the requirements of the Convention."[93] These provisions are applicable to the situation in Para since many of the tribal leaders stated the government did not consult with them. In 1997, the ILO investigated several Amazonian communities, and noted that "the right to life and to physical security and integrity is necessarily related to and in some ways dependent upon one's physical environment."[94] The Belo Monte dam will effectively

degrade, and in some circumstances, destroy land being used by indigenous people. The ILO. 169 provides recourse for these affected indigenous people.

In Malone and Pasternack's book, Defending the Environment: Civil Society Strategies to Enforce International Environmental Law, the authors lay out the processes of submitting a claim to the ILO and how it enforces the convention.[95] There are two routes the ILO reviews complaints – through an employers' or workers association (representation complaint), or on command of the governing body of the ILO itself or another ILO member state. In the representation route, a labor association must represent the indigenous community. In both routes, the ILO governing body reviews the complaint and decides whether to disregard the complaint against the government or investigate. The governing body will publish the complaint, the government's response, and their discussion of the case. If the ILO governing body decides the government response is lacking, they can set up a Commission of Inquiry. The Commission of Inquiry produces a report with recommendations and timetables to assure compliance with the convention article at issue. The violating state has three month to appeal to the International Court of Justice. Currently, there has been no public announcement by the ILO Governing body about the Belo Monte dam. However, the ILO convention will play an integral role in the unfolding legal drama.

Another important international legal mechanism that is at the center of debate in the Belo Monte project is the Inter-American Commission of Human Rights (IACHR). The IACHR examines possible human rights abuses and violations in any of the Organization of American States (OAS), which Brazil is a member.[96] The IACHR human rights duties stem from the OAS Charter, American Declaration on the Rights and Duties of Man, and the American Convention on Human Rights.[97] The IACHR has two areas of jurisdiction. The first is in an advisory role whereby a state can request the IACHR opinion on certain laws or provision interpretations, and the second is contentious jurisdiction and refers to its power to decide cases. [98] The cases are principally based on alleged violations of the American Convention provisions. The IACHR has the authority to take broad actions against human rights violations "including 'quiet diplomacy' and public denunciation through press releases and general reports."[99] The IACHR's most important power, authorized by Article 18(g), is its capacity to conduct on-site visits to investigate or observe the member state's human rights situation.[100] The IACHR visits gives actors and victims the opportunity to publicly present their positions, formally present

complaints to the Commission; and, the Commission will hold hearings and obtain evidence about each complaint.[101] The Commission also publishes “Special Reports” on countries that may be abusing human rights or may focus on a particular rights and provide a survey of member countries’ compliance.[102] The IACHR is a valuable tool for use by the indigenous people. One tribal leader declared, "[i]t is clear that the Brazilian judicial system is not working to protect human rights in the case of mega-infrastructure projects such as Belo Monte, given the tremendous economic and political pressures, often linked to corruption,...As a result, we have no alternative but to request the support of the Inter-American Commission on Human Rights."[103]

To file a petition with the IACHR you can use their online application form. The ease of petition process has lead to a steep increase in the Commissions received petitions. In 2007, the number was 1,456 compared to 681 in 2000 and 718 in 2001.[104] The Commission requires that the member state or its agents are responsible for the human rights abuses.[105] Moreover, the petitions must show that the victim has exhausted all domestic means of remedy, and if this is not the case, he must show the domestic remedies failed due to “1) those remedies do not provide for adequate due process; 2) effective access to those remedies was denied, or; 3) there has been undue delay in the decision on those remedies.”[106] The Commission decides only 100 cases a year due to the current budget.[107] The role of the Commission is important because it offers the possibility of victim compensation and enforcing human rights norms among its member countries. The scope of reparations are under Article 63(1) of the American Convention and provide monetary compensation for pecuniary and non-pecuniary damages.[108] As one author notes, “[r]eparations also require States to adopt other measures, such as measures of satisfaction, which vindicate the memory of the victims, and non-repetition, which ensures the cessation of possible repetitive violations. The Inter-American Court has consistently held that the purpose of reparation is to eliminate the consequences of the violations committed.”[109] The Commission’s case law has been supportive of indigenous land rights, “The Court has affirmed in different rulings, based on Article 1(1) of the American Convention on Human Rights, that members of indigenous and tribal communities require ‘special measures’ in order to guarantee the full exercise of their rights, particularly in relation to their enjoyment of property rights, essential to safeguarding their physical and cultural survival.”[110] This support of indigenous rights is crucial.

The IACHR has been an active player in the Belo Monte controversy. On April 1, 2011,

the IACHR published PM 382/10 – Indigenous Communities of the Xingu Basin, Para, Brazil. In it, the IACHR requested the Brazilian government to "immediately suspend the licensing process for the Belo Monte Hydroelectric Plant project and stop any construction work from moving forward until certain minimum conditions are met."[111] The Brazilian President Dilma Rouseff responded by ordering an immediate cessation from the IACHR and to continue dam construction.[112] President Rouseff's actions puts the integrity of the Inter-American human rights structure in jeopardy. In response to the government's statement concerning the precautionary measure and input from NGO's and indigenous groups, the IACHR modified PM 382/10. The document now requests the government to protect the indigenous people who voluntary isolate themselves and to implement specific measures to mitigate any affects the Belo Monte dam will have on these communities in isolation.[113] The document also states that the government must take measures to protect the Xingu people's health and to "adopt effective measures to protect those ancestral lands against intrusion and occupation by non-indigenous people and against the exploitation or deterioration of their natural resources."[114] The government's response was to withhold its dues to the IACHR and to recall its ambassador to the OAS.[115] In a scheduled closed hearing convened by the IACHR on October 26, 2011, Brazil refused to attend.[116] Brazilian's responses to the IACHR may have a chilling affect upon the institution.

Both legal instruments can be an effective tool to suspend the Belo Monte project and protect indigenous rights. ILO. 169 and the Commission of Inquiry have yet to enter the legal battle surrounding the Belo Monte project. I believe it is only a matter of time before this enforcement mechanism comes into play. The IACHR has barred its teeth at Brazil by requesting it to halt the construction process and implement other measures to ensure the protection of the indigenous people, but Brazil is not backing down. Brazil has suspended all funding to the IACHR and recalled its ambassador to the OAS. What will continue to unfold over the next few years will test the IACHR's efficacy in dealing with human rights abuses.

The Anti-Dam Social Movement

Social movements that contest the Belo Monte dam are a combination of indigenous groups, sympathetic activists, and NGOs. The environmental justice framework emphasizes "a community-based movement to bring pressure on the person or agency with decision-making authority."[117] Social movements are a powerful force to bring about change through pressuring the government and altering public opinion. The multi-cultural and transnational collectives opposed to the Belo Monte dam have formulated a plan of action. However, it is "important to consider how each group is different and how the context-historical, social, cultural, political - in which each group's effort takes place inevitably affects the relevant issues and claims."[118] The indigenous tribes along the Xingu are marginalized people lacking advanced modern education. Having the contributions of activist groups and NGOs legitimizes their opposition against the Belo Monte Dam. In Fearnside's article, he lists the many organization that stand with the indigenous people:

> Comissao Pro-Indio de Sao Paulo, Cultural Survival, and the Missionary Indigenous Council (CIMI). These are joined by groups that primarily representing the non indigenous affected population, such as the Movement of Dam-Affected People (MAB) and the Movement for the Development of the Transamazon Highway and the Xingu (MPDTX). Various environmental NGOs have been active participants, including the International Rivers Network (IRN), the Living Rivers Coalition (CRV), the Socio-Environmental Institute (ISA), Friends of the Earth–Brazilian Amazonia, Environmental Defense (EDF), Greenpeace, and Conservation International... Academic support has come from researchers at a broad range of institutions, including the Nucleus for High-Level Studies of Amazonia (NAEA) at the Federal University of Para, the State University of Campinas (UNICAMP), the University of Sao Paulo (USP), the Emılio Goeldi Museum of Para ´ (MPEG), and the National Institute for Research in the Amazon (INPA).[119]

These disparate groups all play a significant role in the continuing opposition of Belo Monte. This transnational movement generates informed knowledge that can be applied in both scientific, cultural, and spiritual understandings.

A unique tool used in the Belo Monte social movement is the use of scientific knowledge to combat the corporate and government sponsored scientific reports. The anti-dam social movement stands in opposition to what Jurgen Habermas calls scientization -

> the control of governmental decision-making by technical experts and bureaucracy, where citizens have little influence. This process empowers those who possess expert knowledge, while often marginalizing lay people. Scientization has also had broader social impacts through the technical codification of traditionally non-scientific elements such as culture, bodies, and livelihoods.[120]

This contestation of knowledge is essential to disrupt the dominant government narrative concerning Belo Monte's impacts. Brazil's Ministry of Mines and Energy (MME) has framed the issue around the necessity of energy production for the developing economy. MME has also argued that while the Belo Monte dam will flood 200 square miles, the situation was much worse in the previous design. They confidently state that with the Belo Monte design, "[c]are was taken not to flood indigenous lands, which remain untouched by the dam, construction sites, access roads and other engineering structures necessary for the construction of Belo Monte....[and] No indigenous community will be relocated by the project, reaffirming the commitment of the project to reduce impacts on the surrounding area."[121] The Ministry also states that measures will be taken to protect all fish and wildlife (although they conveniently do not mention any extinction or endangerment that may occur).[122] The Ministry also notes that "the project will generate nearly 20,000 direct jobs and numerous indirect jobs in the region. The indirect effect on the economy will also be significant, with the increase in demand for labor, services and supplies, stimulating the production structure of the communities near the dam" they continue, "[t]he financial compensation to the municipalities affected will be approximately $200 million per year" and, finally, the developer of the dam will invest $500 million into developing new businesses in the area.[123] The Ministry frames the dam as a efficient and necessary development project that will increase energy production for use by the whole country, while, at the same time, benefiting workers and those affected peoples by creating new jobs and financial dispensation. And, of course, the dam will not harm the indigenous people in any way.

What they leave out and what they focus on shows the importance of a social movement that contests scientific data.

In the social movement against constructing the Belo Monte dam researchers and scientists attempt to politicize, contend, and subvert scientific knowledge that frames the dam as a source of only good - or better than other possibilities. These research groups have educated the lay population of the realistic affects of the Belo Monte dam. As one author notes, "[t]hrough such contestation...normative constraints on what is considered legitimate in science and technology have shifted to make science more accountable to affected populations."[124] This in turn provides knowledge with a relational basis to the indigenous tribes in opposition to the information by the Ministry whose knowledge stems from corporate and political influences. By producing new scientific reports the anti-dam movement contests inaccurate corporate and government reports. This contestation is influential because it transforms the dialogue from what would have been indigenous leaders sharing their fear of cultural death to modern scientific forms of understanding. The production of knowledge that integrates traditional ecological knowledge deepens the critique and provides an urgency to the social movement.

The indigenous tribes are dependent upon honest and truthful scientific knowledge of how the Belo Monte dam will affect them. However, their traditional ecological knowledge plays a significant part in the relationship of understanding between the disparate groups who stand against the Belo Monte dam. Their cultural and spiritual understanding of the region advances and compliments the scientific expertise of other groups. It is vital that groups that support the indigenous people of Xingu must "Recogniz[e] Indigenous Peoples' harmonious relationship with nature, indigenous sustainable development models, development strategies and cultural values must be respected as distinct and vital sources of knowledge."[125] This dialogue and discourse has shifted from the understanding of the Amazon jungle being an untamed natural world, and more into how a relationship coexists between the natural world and social groups, thereby acknowledging both the social and environmental dimensions.[126]

Movements such as this utilize historical and modern knowledge to produce and provoke new information between researchers, tribes, and activists. Activists then use the information to contest the scientization of development. By mobilizing on different layers of understanding the anti-dam movement can speak and connect to more people. By decolonizing the technocratic

infiltration of technology into the regulation of bodies, places, and cultures, the anti-dam movement can reveal the heart of the issue.

Conclusion

In this paper, I have argued the Xinguano tribes of Brazil are receiving disproportionate affects of development. While climate change mitigation and renewable energy policies are principled, destroying indigenous culture and tradition extending back millennia is too high of a cost. Brazil's Federal Constitution, ILO. 169, and the American Convention on Human Rights, may provide protection to the Xinguano Nation and halt the Belo Monte dam construction, but the government's neglect of such legal requirements is chilling. The anti-dam social movement that recognizes and supports the identity, culture, and interest of the indigenous people while further legitimating their stance by contesting scientific data and media propaganda has been a successful venture. The organization and mobilization of disparate groups for one cause is an inspiring expression of resistance and life. To prevent catastrophic climate change that threatens us all, we have to stand together in equality and respect. We cannot place the burden and cost of sustainable development upon the marginalized nations and people. If we work together and harness the traditional and modern practices of environmental sustainability, then we can move forward as a whole nation committed to protecting all people and their children, and their children's children. In conclusion, I would like to share some words by Marcos Terena —

> We in Brazil recently commemorated 500 years of Western civilization, but those also have been the centuries during which we, the indigenous people of Brazil, were silenced in the name of the new civilization. My people never had coins or money until the white man came. Then we suddenly realized that we were a poor people. We, the Indians or indigenous peoples, were always thought of as being impoverished and an obstacle to development. I pray to our creator, the great spirit that created all of us, that a new age is to come in which we also will be considered part of the development equation.[127]

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