



DIE ERDE

Journal of the
Geographical Society
of Berlin

Vol. 148, No. 1 · Research article

Belo Monte: Actors and arguments in the struggle over Brazil's most controversial Amazonian dam

Philip M Fearnside¹

¹ National Institute for Research in Amazonia (INPA), Av. André Araújo, 2936, Manaus, Amazonas, CEP 69067-375, Brazil, pmfearn@inpa.gov.br

Manuscript submitted: 06 April 2015 / Accepted for publication: 08 February 2017 / Published online: 31 March 2017

Abstract

The reservoir of Brazil's Belo Monte Dam was filled in December 2015. The dam's planning, licensing and construction had rolled inexorably forward despite opposition from local victims of this development and from a wide array of other actors. Logical, legal and ethical arguments had less effect than the political and business forces prioritizing the dam. Part of the environmental destruction and human-rights violation at Belo Monte was apparently financed by taxpayers in North America and Europe with funds passed through Brazil's National Bank for Economic and Social Development (BNDES) from development policy loans (DPLs) to Brazil by the World Bank. This opens the opportunity for World Bank reforms to eliminate loopholes allowing funding through financial intermediaries. The human and environmental cost of Belo Monte should also give pause to governments and financial institutions in promoting dams as their primary response to energy issues.

Zusammenfassung

Der Stausee des brasilianischen Belo Monte Staudamms wurde im Dezember 2015 geflutet. Planung, Lizenzierung und Bau des Staudamms waren trotz des Widerstands der von diesen Entwicklungen lokalen Betroffenen sowie eines breiten Spektrums anderer Akteure unerbittlich vorangeschritten. Logische, rechtliche und ethische Argumente hatten geringere Wirkung als die den Staudamm priorisierenden politischen und wirtschaftlichen Kräfte. Ein Teil der Umweltzerstörungen und Menschenrechtsverletzungen in Belo Monte werden offenkundig durch die Steuerzahler in Nordamerika und Europa insofern über Mittel mitfinanziert, die Brasilien seitens der Weltbank als sogenannte *development policy loans* (DPL) erhielt und die über die nationale Entwicklungsbank (BNDES) zur Verfügung gestellt wurden. Dies eröffnet die Chance für Weltbank-Reformen, um Hintertüren zu schließen, die Finanzierungen durch Kreditvermittler ermöglichen. Die sozialen und ökologischen Kosten von Belo Monte sollten ebenso Regierungen und Finanzinstitutionen Einhalt dabei gebieten, Staudämme als ihre Hauptantwort auf Energiefragen anzupreisen.

Keywords Hydropower, indigenous peoples, hydroelectric dams, Amazonia, social movements, development impacts

Philip M Fearnside, 2017: Belo Monte: Actors and arguments in the struggle over Brazil's most controversial Amazonian dam. – DIE ERDE 148 (1): 14-26



DOI: 10.12854/erde-148-27

1. Introduction

Belo Monte is a hydroelectric dam on Brazil's Xingu River, a north-flowing tributary to the Amazon River (Fig. 1). The reservoir was filled in December 2015 and generation is officially projected to begin in 2016 at the 233-MW auxiliary powerhouse, with the full 11,233-MW installed capacity to be completed in 2019 (Brazil, MME/EPE 2015: 100). When fully operational the dam will leave a 100-km stretch of river with only 20% of its normal flow, directly affecting two indigenous areas and a population of traditional riverside dwellers (*ribeirinhos*) on this "reduced flow" stretch, plus a third indigenous area on the Bacajá (a small

tributary entering the Xingu in this stretch), among other impacts (Fig. 2). Other *ribeirinhos* and part of the city of Altamira, Pará are flooded by the reservoir. Great as the impacts of Belo Monte itself are, they pale in comparison to the impacts this dam is expected to unleash as the driving force for construction of other dams further upstream, especially the Babaquara Dam (officially renamed as the "Altamira" Dam). The Xingu River has one of the greatest annual variations in water flow of all Amazon tributaries, with high-water season flows up to 60 times those of the low-water season. During three months of the year, the low-flow period leaves the river with insufficient water to turn even one of the 20 turbines in the dam's

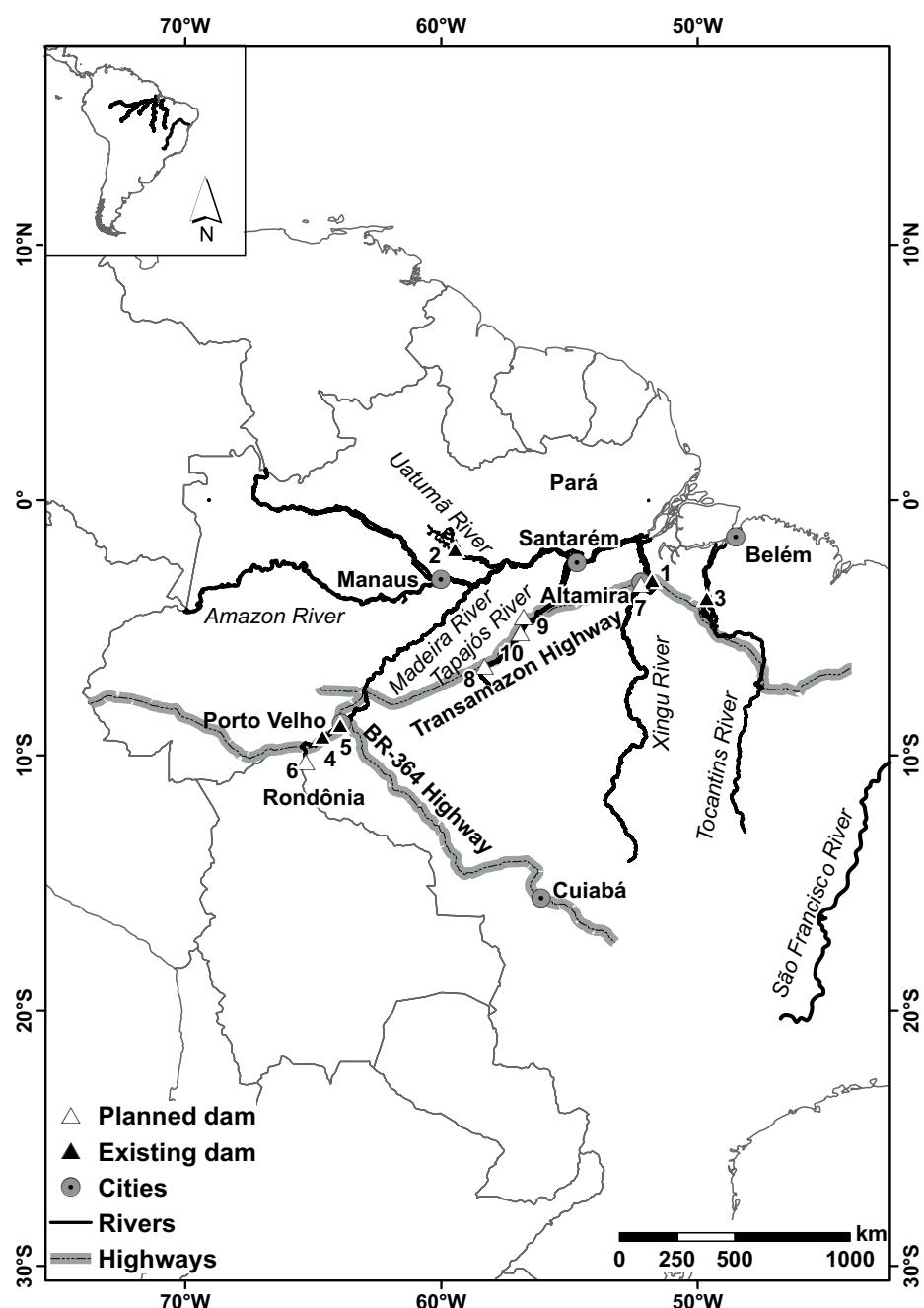
Fig. 1

Locations mentioned in the text.

Dams:

- 1.) Belo Monte,
- 2.) Balbina,
- 3.) Tucuruí,
- 4.) Jirau,
- 5.) Santo Antônio,
- 6.) Cachoeira Ribeirão (Guajará-Mirim),
- 7.) Babaquara (Altamira),
- 8.) Chacorão,
- 9.) São Luiz do Tapajós,
- 10.) Jatobá.

Source: Own elaboration



11,000-MW main powerhouse, leaving only the 233-MW auxiliary powerhouse in operation. Belo Monte is a run-of-river dam, not a storage dam, and its electrical generation therefore depends entirely on the river's flow each day. Because the turbines are the most expensive part of any hydroelectric project, building a dam that leaves 11,000 MW idle for three months is difficult to explain as a financial and economic decision. The answer to how such a dam could possibly be considered lies in officially denied plans to build other dams upstream of Belo Monte in order to store water for release during the low-flow period. These dams would flood vast areas of indigenous land. Protections in Brazil's laws, constitution and international

agreements were bypassed repeatedly as the Belo Monte project advanced (*Fearnside*, forthcoming). Opposing efforts from local people, environmental and human-rights organizations and the academic community were much larger than in the cases of other high-impact Amazonian dams such as those on the Madeira and Tapajós Rivers, yet the project advanced inexorably to make Belo Monte a *fait accompli*. The dam project was impervious to all arguments – logical, legal and moral – and was successful at obtaining support in the government agencies that promoted it, in the banks that financed it and in the companies that invested in it. How did this happen and what lessons can be learned?

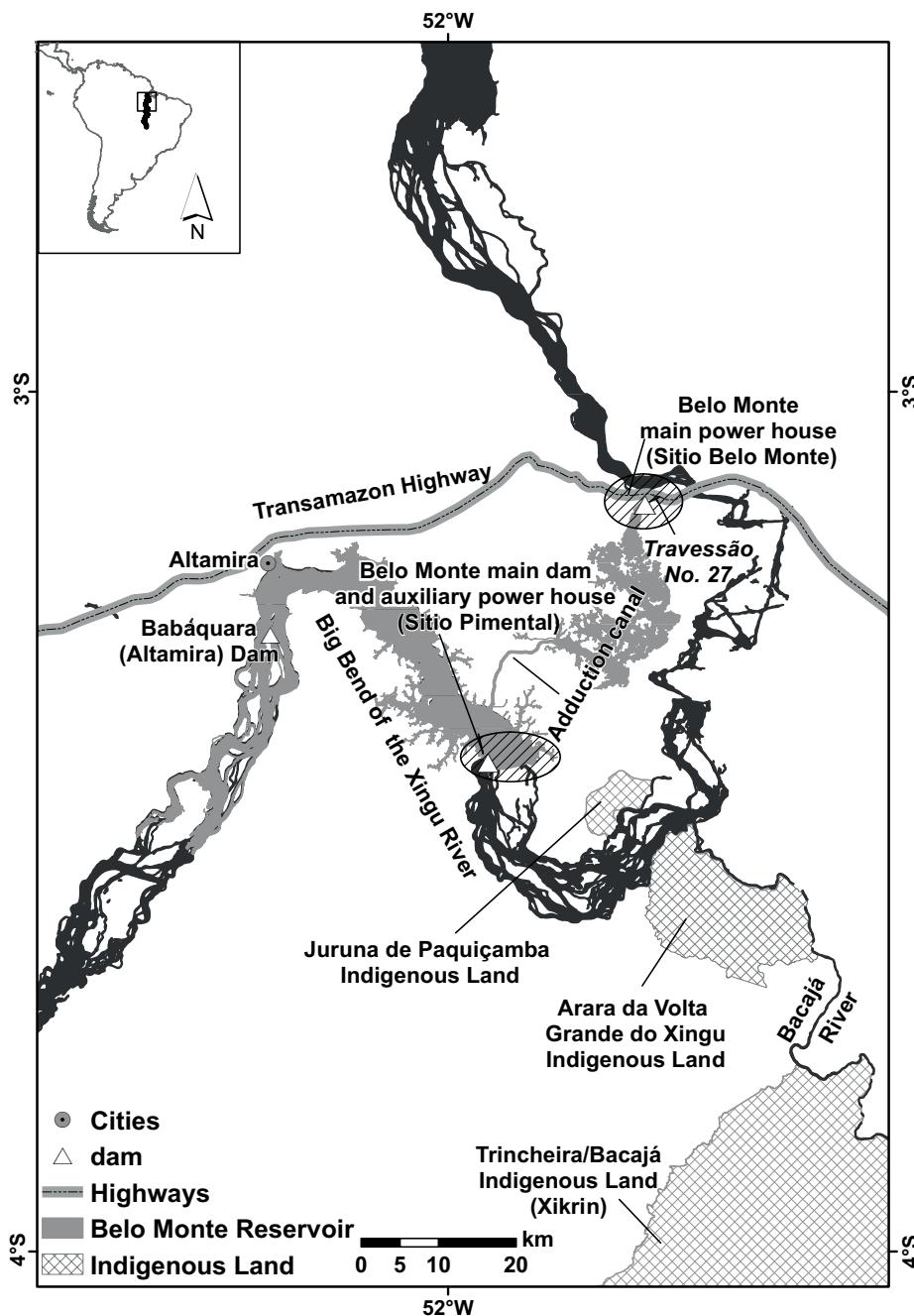


Fig 2
Belo Monte and surrounding area.
Source: Own elaboration

2. Actors in the Belo Monte struggle

2.1 Pro-dam actors

A range of actors make up the two sides of the Belo Monte struggle. Pro-dam actors include the construction companies and industries producing aluminum and other electro-intensive commodities, consulting firms that prepare impact reports in the licensing process, the various groups of individual "*barrageiros*" (engineers and other professionals, including some academics, who work in the dam-building effort), and government agencies that plan and promote dams, such as Brazilian Electrical Centers (*Centrais Elétricas Brasileiras = ELETROBRÁS*), the Energy Research Enterprise (*Empresa de Pesquisa Energética = EPE*), and the National Agency for Electrical Energy (*Agência Nacional de Energia Elétrica = ANEEL*). There are also influential business interests that profit from selling goods and services to the dam-building effort, including the commercial elite of Altamira. In 2009 local entrepreneurs and others supporting the dam founded the Regional Forum for Economic and Socio-Environmental Development of the Transamazon Highway and Xingu (*Fórum Regional de Desenvolvimento Econômico e Socioambiental da Transamazônica e Xingu = Fort Xingu*). Finally, there are politicians at all levels who find major projects like dams useful as visible achievements that can win votes in subsequent elections. In January 2013 Brazil's Supreme Electoral Court (*Tribunal Superior Eleitoral = TSE*) released information for the first time on political campaign donations: the top four contributors to political campaigns in Brazil in the preceding decade were construction companies that build dams in Amazonia (*Gama 2013*). Three of the four largest donors to the 2010 presidential campaign of Brazil's current president were large construction firms (*Zampier 2010*).

In the *Lava Jato* ("Car Wash") investigation into a massive corruption scandal initially focused on PETROBRÁS (the government oil company), several executives who have cooperated with the investigation in exchange for lighter sentences have stated that the same arrangements that apply to the petroleum sector also apply to the electrical sector (*Casado 2015; see: Stauffer 2015*). The chief executive officer of the Camargo Corrêa construction company has confessed to paying bribes to obtain construction contracts for Belo Monte (*Amazonas em Tempo 2015*). The Andrade Gutierrez construction company also paid bribes for Belo Monte contracts, and the former CEO of that company is currently negotiating to reveal details as part

of a deal allowing him to leave federal prison for house arrest while he faces charges from federal prosecutors for "corruption, money laundering and participation in a criminal organization" (*Carvalho and Megale 2016*).

As compared to options such as energy conservation or ceasing aluminum export, dams have a great advantage in the decision-making process due to the possibility of the decision makers and their political parties obtaining financial support from contractors interested in the construction projects, whether this is obtained as legal political donations, as illegal donations to secret slush funds ("*caixas dois*"), or as outright bribes to key politicians. In March 2016 the former leader of the Workers' Party (*Partido dos Trabalhadores = PT*) in the Senate made a lengthy confession to federal prosecutors in exchange for leniency in the *Lava Jato* corruption probes. His 254-page sworn affidavit (*do Amaral 2016*) was released by the federal judge in charge of the case; it includes the following on Belo Monte (pp. 69-70):

"The Belo Monte bribe [propina] served as a decisive contribution to the election campaigns of 2010 and 2014. The main negotiating agent for the Belo Monte Consortium was the contractor FLAVIO BARRA of [the construction firm] ANDRADE GUTIERREZ. The numbers for the bribe were around R\$30 million [then ~US\$ 15 million] for election campaigns. DELCÍDIO DO AMARAL believes that the final figures for bribery are higher because during the campaign an agreement was made with respect to "claims" presented by the Consortium of about R\$1.5 billion [~US\$750 million]. The agreement regarding "claims" was one of the conditions required for increasing the companies' election contributions. And it must be said that the actions of the "triumvirate" composed of SILAS RONDEAU [Minister of Mines and Energy 2005-2007], ERENICE GUERA [head of the Civil House during the 2010 election campaign] and ANTONIO PALOCCI [head of the Civil House in 2011] were fundamental to reaching [agreement on] the corporate and business design of the Belo Monte Project. DELCÍDIO estimates that the value for the contributions to the campaigns (2010 and 2014) of the PMDB and PT reached approximately R\$45 million [~US\$23 million]."

Dilma Vana Rousseff (known simply as "Dilma," Brazil's president since January 2011) served on the energy-policy committee of Luiz Inácio Lula da Silva

(better known as “Lula”) in 2002 in preparing his candidacy for the October 2002 presidential election that initiated the PT administration of the federal government. President Lula appointed Dilma as Minister of Mines and Energy, where she served from 2003 until 2005, when a corruption scandal (the “*Mensalão*”) forced President Lula to replace the presidential chief-of-staff (head of the “Civil House” or *Casa Civil*); Dilma’s promotion to that office made her the second most powerful person in the country from 2005 until her own presidential candidacy in 2010. During this time she became known as the “mother of the PAC,” referring to the “Program for the Acceleration of Growth” (*Programa de Aceleração do Crescimento*), a package of projects launched in January 2007 that included many dams, among them Belo Monte. During the 2010 presidential campaign her advertising featured the phrase “mother of the PAC.”

Dilma’s personal involvement in championing Belo Monte has made her the most important actor on the pro-dam side. An emblematic event was a ministerial meeting in 2011 where the minister of the environment attempted to raise the issue of criticism of the Belo Monte Dam. The *Folha de São Paulo* newspaper reported that President Dilma cut the minister off, shouting “You must understand, once and for all, that this project is good, important for the country, and it will be done”; the report goes on to state that “from then on no one objected to anything else, and all of the ministers began to publically defend the dam as a strategic project for the country’s infrastructure” (*Magalhães* 2011).

The head of the Federal Attorney General’s Office (*Advocacia Geral da União* = AGU), a presidential appointee, has repeatedly managed to obtain judicial decisions from a select set of judges to overturn preliminary decisions (*liminares*) issued by lower courts to halt Belo Monte pending consultation of the indigenous peoples or other preconditions for the dam. A small set of federal judges can be counted on to quickly issue decisions overruling these impediments (e.g., *Millikan and Hurwitz* 2011). These judges are, therefore, among the key actors on the pro-dam side.

At least 60 legal contestations are still pending against Belo Monte in Brazilian courts, including 22 public civil suits (*AIDA* 2015). The impacted indigenous people have not been consulted as required by International Labor Organization (ILO) Convention 169 (*ILO* 1989), which Brazil signed in 1991, ratified in 2002 and con-

verted into Brazilian law in 2004 (*Brazil, PR* 2004). In 2012 the Regional Federal Court of 1st Region (TRF-1) found in favor of the indigenous people in one such suit (Civil Appeal nº 2006.39.03.000711-8), thus providing a more substantial legal barrier to continuing construction. The head of the AGU was able to obtain a private audience with the chief justice of Brazil’s Supreme Court and convince him to accept an appeal that would allow the dam to go forward in practice. During the four days that Belo Monte’s construction was halted several members of the executive branch of the government were received by the chief justice and no representatives of civil society were received (*International Rivers* 2012; *ISA* 2012). The decision, which was made by the chief justice without consulting any of the other justices in the Supreme Court, allowed construction to continue pending a decision on the merits of the case at some unspecified future time. This occurred only two weeks before the chief justice was to reach the mandatory retirement age and was in the middle of the high-priority trial of the “*mensalão*” corruption scandal (see: *Sevá-Filho* 2014). Since this 2012 decision the Belo Monte case has never appeared on the schedule of the Supreme Court for consideration, and the dam has, in practice, been built.

2.2 Anti-dam actors

On the anti-dam side there have been the various groups of Indigenous people (both upstream and downstream of Belo Monte), the traditional non-indigenous riverside dwellers (*ribeirinhos*) both from the stretch of river to be flooded and from the Big Bend, and many Altamira residents. An important local actor opposing Belo Monte has been the Catholic Church in Altamira. Dom Erwin Kräutler, Bishop of the Xingu, has been an outspoken critic of the dam plans ever since they became public. Due to the risks inherent in taking this position he has 24-hour security guards and wears a bullet-proof vest under his vestments (*Bratman* 2014: 284). Dom Erwin has had access to high-level government officials, and it was to him that President Lula famously promised not to “ram Belo Monte down anyone’s throat” in July 2009 (*International Rivers* 2009). Dom Erwin later concluded that “none of Lula’s promises have been kept” (*Calixto* 2015).

A group of national-level Brazilian NGOs has supported the local anti-dam movement and has publicized the dam’s implications and tried to influence govern-

ment decisions. Especially active have been the Socio-Environmental Institute (*Instituto Socioambiental* = ISA) [www.socioambiental.org.br/], Friends of the Earth Brazilian Amazonia (*Amigos da Terra Amazônia Brasileira*) [www.amazonia.org.br/]; the Pro-Indian Commission of São Paulo (*Comissão Pró-Índio de São Paulo* = CPISP) [www.cpisp.org.br/], the Pastoral Land Commission (*Comissão Pastoral da Terra* = CPT) [www.cptnacional.org.br/] and the Movement of Dam-Affected People (*Movimento dos Atingidos por Barragens* = MAB) [www.mabnacional.org.br/]. International NGOs playing similar support roles have included Cultural Survival [<https://www.culturalsurvival.org/>], International Rivers [www.internationalrivers.org/] and AmazonWatch [<http://amazonwatch.org/>].

Indigenous groups and their leaders have been at the center of the Belo Monte struggle. They have maintained pressure on government officials through a long series of demonstrations and direct actions such as occupations of government offices or of construction sites. However, a serious loss on the anti-dam side has been the dam consortium's successes in co-opting some key indigenous leaders. This is done by giving material rewards such as outboard motor-boats, vehicles, fuel and foodstuffs to selected leaders (e.g., Heurich 2013). Much of this was part of the "Emergency Plan" agreed to by the consortium as a two-year program while the dam's Basic Environmental Plan (*Plano Básico Ambiental* = PBA) was being prepared (Norte Energia SA 2011). Internal pressures within the indigenous groups could then lead to silencing group members who had previously been outspoken critics of Belo Monte. It has also led to the fission of numerous indigenous villages (the number of villages increased from 19 to 39 between 2010 and 2015), both as a result of disagreements over opposition to Belo Monte and as a means of obtaining access to the material handouts from the dam consortium for sub-groups within the indigenous communities, since distribution of the benefits within communities was very uneven (Queiroz 2015). The voices of the three downstream indigenous groups, which are the ones most directly affected by the Belo Monte Dam itself, have fallen silent in recent years. A notable event was a major gathering organized by ISA in Altamira in September 2013 bringing together indigenous groups from the whole length of the Xingu River, but representatives of the three downstream groups (Juruna de Paquiçamba, Arara da Volta Grande do Xingu, and Xikrin do Bacajá) did not come (personal observation).

A key organization of local non-indigenous dam opponents was founded in 1987: the Movement for the Survival of the Transamazon Highway (*Movimento pela Sobrevivência da Transamazônica* = MPST), renamed in 1998 as the Movement for the Development of the Transamazon Highway and the Xingu (*Movimento pelo Desenvolvimento da Transamazônica e Xingu* = MDTX). This organization was to play an important role in resisting the proposals for the "Altamira Complex" (Belo Monte and Babaquara) until the group split in 2008. In August 2001 MDTX brought together 113 social organizations to draft a document entitled "SOS Xingu: A call for good sense on the damming of rivers in Amazonia" (MDTX 2001).

On 25 August 2001 the head of MDTX (Ademir Albeu Federicci, known as "Dema") was assassinated (ISA 2001; Switkes 2001). Dema is regarded as a martyr in the struggle against Belo Monte. Although two gunmen were arrested, their patrons were never identified (preventing confirmation of whether the gunmen were paid by the dam proponents or by other interests in the Altamira area that were also displeased with MDTX).

When the PT won Brazil's presidential election in October 2002 and Lula took office in January 2003, many opponents of Belo Monte expected this to decrease or end federal government support for Belo Monte, but the opposite turned out to be the case (see: Sevá-Filho 2014). Many dam opponents had ties and overlapping interests with the PT, causing predictable strains (e.g., Scholz et al. 2004: 53-56). Under the PT administration, the federal government made substantial sums available to NGOs through contracts for a variety of social and environmental projects, thus presenting an additional temptation for civil-society groups to moderate their criticisms of priority projects like Belo Monte.

The MDTX continued to oppose Belo Monte and suffered harassment from ELETRO NORTE (the government electrical company leading the preparations for Belo Monte) (Melo 2005). However, a split was developing within MDTX, with various members becoming dam supporters. The Live, Produce and Preserve Foundation (*Fundação Viver, Produzir e Preservar* = FVPP) had been created in 1998 as the legal entity for the MDTX, and this status allowed it to compete for government contracts. In 2006 FVPP produced a report on the history of MDTX (published by the Ministry of

the Environment); the report only mentions a position of the group against Belo Monte as a thing of the past – in the 1990s before the name was changed from “survival” to “development” (FVPP 2006: 35). The assassination of Dema did not merit mention in the 65-page “history.” However, only in 2008 did FVPP formally decide to “not oppose” Belo Monte, ostensibly so as to assure that the Transamazon Highway would be paved (Bratman 2015: 70). In addition to the influence of the PT affiliations of the organization’s leadership, the government’s linking of the highway paving to the dam proposal had succeeded as a “wedge” to split opposition social groups in the Altamira area (Bratman 2014: 277). Recently FVPP has been indignant that the dam consortium has not kept its promises for a series of actions that would benefit local farmers, as stipulated in the “preconditions” (*condicionantes*) for licensing Belo Monte (Brito 2015).

In 2008 the portion of MDTX opposing Belo Monte split off to form the Xingu Alive Forever Movement (*Movimento Xingu Vivo para Sempre = MXVPS*), better known simply as “Xingu Vivo” (www.xinguvivo.org.br/). Xingu Vivo was founded at the May 2008 Second Encounter of the Indigenous Peoples of the Xingu. This group, led by Antônia Melo, became (and continues to be) the main grassroots organization contesting Belo Monte. The websites of the different organizations give the impression that they all have a continuous history of joint struggle for common goals. Not reported are the various disagreements and splits in these groups. Additional divisions among local dam opponents occurred as the result of a visit to Altamira by Lula in June 2010 (Bratman 2014: 277; Salm 2010), where, at a rally held in the city’s soccer stadium, organizers of the event were able to aggravate splits between local social organizations (Marcelo Salazar, public statement, 29 January 2016). Former allies wound up shouting at each other across a police barrier (Bratman 2014: 277).

The Movement of Dam-Affected People (MAB) has been an important national group opposing dams since its founding in 1991 (e.g., Rothman 2001). However, MAB is allied with the PT and helped in the 2002 presidential campaign. When the PT won the election and subsequently made Belo Monte a top priority, MAB softened its stance at the national level. MAB only arrived in Altamira in 2009, where it has concentrated on organizing urban residents who would be displaced in Altamira to demand better compensation (Bratman 2015: 70). In 2009 Dom Erwin publicly

criticized MAB’s dropping its opposition to Belo Monte as reflecting the fact that the group’s advocacy for the displaced population logically required the dam project to go forward (Bratman 2014: 277-278).

The non-indigenous opponents of the dam hail from three distinct groups. One is the urban residents of Altamira who were displaced, officially 5141 urban families (Villas-Bôas et al. 2015: 12), or about 25,000 people. The second is the traditional riverside residents (*ribeirinhos*) who lived on the shores and islands in what is now the Belo Monte reservoir (3568 families or about 18,000 people) (Villas-Bôas et al. 2015: 13), and the *ribeirinhos* along the “reduced flow” stretch of the Big Bend of the Xingu, who have also lost their livelihoods from fishing (e.g., De Francesco and Carneiro 2015). This author had the privilege of spending some time with *ribeirinhos* in what is now the reservoir while advising a master’s dissertation on their livelihoods (*da Silva-Forsberg and Fearnside* 1995, 1997); the knowledge and skills of these people will be of little use in the housing project on *Travessão* No. 27 (a side road branching off the Transamazon Highway) where they have now been forcibly relocated (e.g., MPF 2015; Villas-Bôas et al. 2015: 126). The third group is the small farmers in the Transamazon Highway colonization areas near Altamira; this group is now divided, with many having switched sides to support the dam.

Celebrities of various types represent one of the outside groups that has helped to give public visibility to the impacts of Belo Monte. In 2011, for example, 19 soap-opera stars from Brazil’s Globo television network made a video criticizing the dam, albeit with some inaccuracies (*Movimento Gota d’Água* 2011). A counter-video supporting the dam was produced by a group of engineering students at the State University of Campinas (UNICAMP) (*Tempestade em Copo d’Água* 2011). The counter-video was converted into a cover article in *Veja* magazine (Eler and Diniz 2011), which was reprinted and widely distributed in Altamira by the dam consortium. I recommend my debate with the students’ teacher on the Terra internet television network (*Terra TV* 2011).

Various international celebrities have visited Altamira and spoken out against Belo Monte. These include rock singer Sting in 1989, filmmaker James Cameron and actress Sigourney Weaver in 2009, and James Cameron again in 2011. Actor and former California governor Arnold Schwarzenegger, who was taken to

the Xingu by his friend James Cameron in 2011, then refused to comment publically on Belo Monte (personal observation). The involvement of foreign celebrities has been controversial both inside and outside of Brazil (see *Jampolsky* 2012). Bianca Jagger has been the most consistently active celebrity in speaking and writing about Belo Monte (e.g., *Jagger* 2013).

The Federal Public Ministry (*Ministério Público Federal* = MPF), which was created by Brazil's 1988 constitution as a special prosecutors' office in defense of the interests of the people, has had a very important role, especially the branches in Belém and Altamira. The MPF has brought series of suits against the dam based on the various failures to follow the licensing procedures and the violation of constitutional and legal provisions, such as the requirements for consultation of indigenous peoples.

Other actors include international human-rights agencies, such as the Inter-American Commission on Human Rights (IACHR) of the Organization of American States (OAS) (see: *AIDA* 2016). A number of academics and members of the press have had roles in obtaining and distributing information. Over the years, a series of books with collections of papers on Belo Monte has been an important source of information in the struggle, notably *Santos* and *de Andrade* (1990), *Sevá Filho* and *Switkes* (2005), *Magalhães* and *Hernández* (2009), *de Oliveira* and *Cohn* (2014) and an annex to the online version of *Villas-Bôas* et al. (2015).

3. The debate on Belo Monte: Arguments cast aside

The pro-dam side largely succeeded in casting aside the various arguments questioning Belo Monte. Most popular perception and mainstream media reporting portray the dam as a wise investment for the country with minimal impacts and as a project that is needed to lower electricity bills and avoid blackouts in Brazilian homes (e.g., *Eler* and *Diniz* 2011). However, these perceptions are mistaken on all counts.

The economic arguments have been effectively debunked (*de Sousa Júnior* and *Reid* 2010; *de Sousa Júnior* et al. 2006). The dam was economically indefensible even at the low construction costs initially foreseen. By 2013 the cost was already (at least) double the expectation when the decision was made to build the dam (e.g., *Veja* 2013). In fact, this is part of a general pattern worldwide, where dams normally cost much

more than the initial expectations and take longer than expected to complete. A review of hundreds of such cases around the world shows this to be the normal pattern, not an isolated exception (*Ansar* et al. 2014). In the case of Belo Monte, the project's financial unviability is suggested by the fact that the PT administration had to use all of its powers of political persuasion to bully companies and entities such as pension funds over which the PT has influence into investing in the project against their will (e.g., *Sevá Filho* 2014); Camargo Corrêa, the company involved in planning the project from the beginning, only serves as a contractor - not as an investor with its own capital at risk.

The environmental impacts such as greenhouse-gas emissions are generally little discussed and are reduced to unsupported assertions that the dam represents "green" or "clean" energy (e.g., *Fearnside* 2012; see *Fearnside* 2011). Indigenous peoples are portrayed as not directly affected, since the downstream groups are not underwater. The upstream groups are ignored completely, as the upstream dams are never mentioned.

The "need" for Belo Monte is questionable, since Brazil has much better energy options. Projections of electricity demand underlying Brazil's dam-building plans are grossly exaggerated (*Prado* et al. 2016). In addition, not all of the "demand" is really "need". Because only 28.7% of Brazil's electricity is for domestic use (*Brazil, MME/EPE* 2015: 44), the easy argument that a decision not to build Belo Monte would mean higher electricity bills in Brazilian cities distorts the question at hand. Most of the power from Belo Monte is not intended for household use, let alone for extending electricity to remote areas without access to power. Substantial amounts of electricity go to industries with little benefit for the Brazilian population. A logical starting point in reforming energy policy is eliminating the export of electricity in the form of electro-intensive commodities such as aluminum, which generate little employment in the country (*Fearnside* 2016). Brazil has major opportunities to reduce energy use by improvements in energy efficiency and in the transmission and distribution systems, and the country has enormous potential for wind and solar generation that receives only token priority when compared to hydropower (*Baitolo* et al. 2013; *Bermann* 2002; *Moreira* 2012). Most recently, Brazil's president vetoed all funding for "non-hydraulic renewable energy" in Brazil's 2016-2019 Pluri-Annual Plan (*ISA* 2016).

Questioning of the legality of the project is little understood. What appears in television news and most newspaper accounts is limited to a simple statement that an injunction halting the dam was "toppled" (*derrubado*) by a given judge. The perception is that there must therefore have been no merit to the injunction halting the project. Not mentioned is the fact that the injunction may be based on dozens of pages detailing violation of multiple laws, while the decision toppling the injunction consists of a few lines invoking a security suspension without even touching on the merits of the case. The history of Belo Monte has amply shown that "the law is not a sufficient guarantee of enforcing rights" (Graeff 2012: 277). There is little impetus to change the security suspension laws because only a tiny fraction of the Brazilian population knows of the existence of these laws, which allow judicial decisions to be reversed if they imply "grave damage" to the public economy (Fearnside 2015).

4. International connections

One of the factors that weakened involvement of international NGOs in the Belo Monte struggle was the fact that the dam was, at least on paper, entirely paid for by Brazilian sources. Brazil's National Bank for Economic Development (BNDES) financed 80% of the total cost, and the rest was obtained from the pension funds and other sources over which the PT had influence (Rojas and Millikan 2014: 38). However, some of the funds may have come from taxpayers abroad, as BNDES was apparently serving as a conduit for monetary flows from international sources such that protections were avoided that would bar funding high-impact projects like Belo Monte. "Development policy loans" (DPLs) have become the predominant form of World Bank lending in recent years, representing over half of the World Bank's total lending (see BIC 2009). These loans essentially escape from the review system that was set up within the World Bank in the late 1980s to avoid environmentally and socially damaging projects. DPLs come with a series of "triggers" (World Bank jargon for conditions), and the loans therefore represent an inducement for the recipient country to change its policies in ways and at a pace that otherwise might not be adopted.

In the case of the first US\$ 1.3 billion DPL to Brazil for environmental policy, most of the "triggers" were worthwhile changes for the environment, although some, such as accelerating Brazil's environmental li-

censing process, were not. The open-ended support for Brazil's National Plan for Climate Change (Brazil, CIMC 2008) is potentially also questionable, since promoting hydroelectric dams is a major feature of the plan. The World Bank's evaluations of DPLs (e.g., Lundell 2011) are strictly a checking off of the "triggers" that have been met – not an assessment of how the money was actually used. NGOs have long criticized the possibility of the money being used for projects like Belo Monte, since the World Bank essentially does not know where the money goes (Amigos da Terra Amazônia Brasileira et al. 2009). Even if the money is used in the environmental areas associated with the policies that justify the funding, the funds indirectly free up other funds for environmentally damaging projects like dams. The development policy loans to Brazil essentially go into a common pot in BNDES, and this government bank then uses the funds to finance individual projects, such as Belo Monte. Belo Monte received a series of loans with highly favorable terms that would be unavailable to virtually any other development project (e.g., Rojas and Millikan 2014). BNDES charged the Belo Monte consortium only 4% annual interest on a 30-year-loan, while the Brazilian government simultaneously financed itself by selling short-term bonds at 10% interest (Leitão 2010). The dam consortium also obtained an unusual series of loan extensions and other modifications of the terms after the first DPL had been granted (Millikan and Garzón 2015). BNDES also ignored its own internal regulations in releasing the funds for Belo Monte without an evaluation of economic viability and socio-environmental risks (Garzón et al. 2015: 131). The relationship between the BNDES leadership (appointed by the federal government) and politically motivated loans has now become exposed by the *Lava Jato* corruption investigation (e.g., Stauffer 2015).

The powerful effect of international funding on resource struggles is apparent from past history. A case in point is POLONOROESTE, the program that rebuilt and paved the BR-364 (Cuiabá-Porto Velho) Highway and opened Rondônia to migration and massive deforestation (Fearnside 1987). Funding from the World Bank meant that taxpayers in North America and Europe had paid for part of the destruction they were seeing on their television screens. An exposé on the US television program "Sixty Minutes" was the key stimulus for the World Bank's creating its environment department in 1987 (Wade 2011). Belo Monte now presents an opportunity for World Bank reforms, such as ending the use of financial intermediaries to

bypass bank safeguards in channeling funds to damaging projects. The impacts of Belo Monte also provide a clear example of why both financial institutions and national governments should give priority to other energy alternatives, such as energy conservation and generation from wind and solar sources.

Acknowledgements

The author's research is supported exclusively by academic sources: Conselho Nacional do Desenvolvimento Científico e Tecnológico (CNPq: Proc. 305880/2007-1; 304020/2010-9; 573810/2008-7; 575853/2008-5), Fundação de Amparo à Pesquisa do Estado do Amazonas (FAPEAM: Proc. 708565) and Instituto Nacional de Pesquisas da Amazônia (INPA: PRJ15.125). Marcelo Augusto dos Santos Júnior prepared the figures. I thank Paulo Maurício Lima de Alencastro Graça for comments.

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