

## **Affected People by Dams of Balbina in the Amazônia: the artisanal Fishermen and their Fishing Practice Thirty Five Years Later**

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### **Abstract**

*This article is about the construction of Balbina Hydroelectric Power Plant (Usina Hidroelétrica de Balbina – UHB) on the Uatumã River, which is in President Figueiredo – a county near Manaus, the capital city of the State of Amazonas, in Central Amazonia. The plant was built in the 1970s, and its construction led to environmental impacts on both the complex and rich existing biodiversity and the way of living of the traditional people, including the ethnic group called Waimiri Atroari, that had lived around the Balbina Lake – where the dam was built – for millenniums. We can say that such a hydroelectric megaproject was one of the most perverse socio-environmental crimes of the planet. The article discusses the changes in the rural families' daily life. Among such families were the artisanal fishermen and fisherwomen sociologically called dam-affected people, who were affected in their ways of social reproduction and were obliged to move to other fishing territories in pursuit of other survival strategies. This article is part of the evaluative research of the socio-environmental impacts 35 years after UHB was built.*

**Keywords:** Hydroelectric power plant. *Dam-affected people*, Artisanal fishermen and fisherwomen, Socio-environmental conflicts.

### ***I. Introduction***

Over than thirty five years it has come up in Brazil a new categorical segment of under classes that has been called *those affected*<sup>3</sup>. Those human groups are considered the result of the large hydroelectric plants that have gone through the work areas and living in small rural communities in the rivers and lakes, from where they take food to live in. These large groups<sup>4</sup> and do not stop growing. They do it the same way Brazilian State has developed its energetic project as it used to be as in the years of the military dictatorship. The hydropower plants that have been currently built in the Amazônia<sup>5</sup> take those human groups from their territory. Therefore, the construction of those *affected* by dams not only has growing, as it is changing their experiences, according to the new construction of each dam in different places.

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<sup>3</sup>VAINER, Carlos. Daniel Rothman. (org.) *Vidas Alagadas: os conflitos socioambientais. Licenciados e barragens*. Viçosa: Federal University of Viçosa, 2008.

<sup>4</sup>It is a Brazilian social movement where they have farmers, fishermen affected by dams with the construction of hydroelectric power in Brazil in the 70s.

<sup>5</sup>VERDUN, Ricardo (org.) *Integração, Usinas Hidrelétricas e Impactos socioambientais*. São Paulo: INESC. Fundação Henrich Boll, 2007.

The installation of hydroelectric plants in the country significantly changed the way of life of the inhabitants of the *affected* areas, mainly because they included in their daily lives other forms of relationship, as the new subject, who were brought by large on contractors, particularly Eletronorte, managing state institution hydroelectric, as if it were the arrival of the stranger in each territory, as Martins (1993). In the 70s, the policy of military government to the Amazônia used to include suitable projects to support regional development as well as the integration of the region with the whole country. Among all those projects we highlight Balbina Dam, located in Presidente Figueiredo, which is 110Km far from Manaus, Amazonas state Capital, in the Central Amazônia<sup>6</sup>. The government's intention was to create an energy matrix to supply the industry that settled in the Manaus Free Zone, in the 70s. The construction of the hydroelectric of Balbina fall, in Uatumã river (an indigenous name that means big mouth)<sup>7</sup>, began in the 70s, and it was inaugurated in 1981. We can state this significant hydroelectric project, represents one of the worse crimes to the planet. By opening its gates flooded rainforest decimating the existing biodiversity, and also affected the way of life of indigenous peoples that lived there thousands of years including the Waimiri- Atroaris ethnicity who were displaced to other territories (BAINES,2010). Dispossession processes of traditional peoples caused environmental conflicts not only in the struggle for material appropriation of land resources but also for symbolic conflicts.

Before the dispossession processes of traditional peoples, in the construction of UHB, the fisher folk used to get their fishing production in the lakes into the Uatumã River. However, with the flood of lakes and environmental degradation, fishery workers had to look for other fishing spots in locations, distant from their homes. At the time of the impoundment and with the release of anoxic water, environmental degradation was inevitable because of lacking of oxygen in the water (FEARNSIDE,1990). As a result of this fact, there was massive mortality of fish which forced fisherfamilies, who practiced fishing for their social reproduction of existence, move to other territories. Thirty-five years have passed in which the floodgates of UHB were opened. A special moment to check the reconstruction of the live of people affected by dams, so the purpose of this communication is aimed at one time: discuss the displacement of rural families, especially the fishermen who once lived in the vicinity of Balbina waterfall in the river Uatumã and reterritorializaram in other nearby communities. These fishing families had to recompose and reframe their lifestyles and find different ways of living, and also fight politically for a piece of land, in order to continue their traditional fishing practices and their living conditions. This article is structured in four items. First, we describe the construction of Balbina hydroelectric plant, as an important project from Amazônia, and its social and environmental impacts during the 70s and the 80s. Second, we talk about Balbina town, the place that received *those affected* by the dams. Third, we portray some changes in the fishing practice. In the last item, we describe the place called Morena, where we can find agro extractives workers, and also other affected fishers. As brief conclusions and reinforcement of significant points, such as the construction of Balbina Dam and its harmful effects to the environment, and to the people, thirty-five years later.

### ***1i. Balbinas's Construction: The Environment and Deterritorialisation of Those Affected by Dams***

Construction of major Brazilian developments, especially those in traditional communities, such as: indigenous, river people, fishermen, farmers, and so forth have been caused some kind of trouble, and constant debates into the academic and political world on their social and environmental impacts. Several studies record<sup>8</sup> environmental degradation put at risk a rich biological diversity between flora and fauna as well as, sustainability of ecosystems and also the human lives. This energy policy models not only flooded the rivers but also disrupted the way of life and work of the affected populations. It has flooded also the way of traditional production, which used to be different from the ones of modern market. They were collective, solidarity, community, and respect nature as they belong to it (DIEGUES, 1999). To sum up, it has flooded memories, knowledge, own activities, and traditional way of producing individual and collective existence and also symbolic cultural material.

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<sup>7</sup>The watershed Uatumã River is located between latitudes 0 ° and 3°S and meridians 58 and 61, all in the state of Amazonas, covering a 70.600km<sup>2</sup> drainage area.

<sup>8</sup>CAVALCENTE, Maria Madalena e SANTOS, Leonardo. Hidrelétrica do rio Madeira: tensões sobre o uso do território e dos recursos naturais no Amazonas. *Confins*. Revue Franco-Bresilienne de Geographie, no. 15, 2012; CAVALCENTE, Maria Madalena. Hidrelétrica do Rio Madeira: território e tecnificação do meio ambiente. Thesis. Graduate Program in Geography - Paraná Federal University, 2012; MAGALHÃES, Sandra da Cruz. Estudos dos impactos ambientais e sociais decorrentes dos projetos de Hidrelétrica de Jirau e Santo Antonio. Reflexos no meio ambiente.

The construction of the Hydrographic Basin Uatumã began in the 70s and it was inaugurated in 1981 near Balbina waterfall in the river Uatumã on the left of the Amazon River. Although under the silence imposed by dictatorial governments, since the beginning the construction of the plant was loaded with much controversy, the various environmental impacts during and after the end of the work. By opening its gates flooded rainforest forming a lake of 2360 km with energetic potential of 250 megawatts with the actual generating only 120 MW. It created one of the largest artificial lakes in the world where they are submerged lives. To get an idea, while the second largest plant in the world, called Itaipu, located on the border between Brazil and Paraguay, needed to flood an area of 0,096 km<sup>2</sup> to produce 1 MW; and the Hydrographic Basin Uatumã has sank 9,44 km<sup>2</sup> in order to produce the same thing 9,44 km<sup>2</sup> (FEARSINDE 1990). During the construction of the Hydrographic Basin Uatumã, Eletronorte, the company responsible for the project, argued that the dam would be the salvation for the power shortage in the city of Manaus and unleashed an advertising campaign criticizing the work: "*Someone who is against Balbina, is against you*". It was the announcement of the company, aired in the media in Manaus. However, when the dam was closed in 1989, all alerts made by critical studies were confirmed: the dam built in Balbina lake reached municipalities upstream and downstream of the dam. In an area of little rugged, composed of a dense tropical forest and the complex biodiversity were drowned. Moreover, soil and climate conditions were changed. Finally, the complex ecological network with multiple ecosystems has been modified and environmentally committed.

Economic, ecological, and social impacts were unprecedented. From an environmental point of view, the effect of these issues was harmful; the trees were not removed before forming the lake of Balbina. It caused the decomposition of organic matter and the release of toxic compound methyl mercury, which contaminated the fish. The displacement of rural families from their homes to other places was inevitable, especially for the community Waimir Atroari, an ethnic group who were living in another territory (BAINES, 2010). To reshape the landscape of the Uatumã river, it flooded the lives of three thousand families who were living downstream of the plant have been forced to move out. As a result, it flooded memory, knowledge, and the very secular activities to produce the territory. It means the individual and collective existence, material and symbolic-cultural people affected by dams (CORREA, 2009).

The conflicts arising from the compulsory departure of rural households and adjacent indigenous to the dam started up in family walks when they were forced to reorganize in other domestic groups and had to adjust to the new life in different landscapes and territories of their old way of living. As records Albuquerque (2013) the displacement and destruction of life projects created in the family *affected* by the dam the feeling that their life projects were amputated and who should rebuild in a new landscape with other territorial references, and other elements that constitute life in community. In other words, social environmental conflicts into the projects of building such a large hydropower, besides fighting to produce and live, it implies symbolic disputes by maintaining cultural and a dispute over the ownership of the material modes of producing and living life. It caused symbolic disputes for the maintenance of cultural processes, historically inherited, caused by territorial disaffiliation, the fragmentation of belonging feeling and forms of political organization (ALBUQUERQUE, 2013).

At the meantime, traditional people who lived to care for the environment after the hydropower coming back, they used to keep traditional knowledge which was inherited by their ancestors, in order to take food from fishing process, and vegetal, from familiar agriculture. This traditional way of life has been modified according to the dispossession because the families were forced to conform to concentrate production modes in the cultivation of small gardens, subsistence agriculture, which caused natural estrangement community life. These families have rebuilt their lives taking into account the fact that they are people *affected* by the dam and relocated in other unknown territories. The difficulties imposed by social and environmental imbalances and changes in the hydrological cycle of Uatumã river, due to the formation of Balbina lake reflected in the natural conditions of ecosystems and consequently on the reproduction of fish species and forms of working in the fish production. Loosing and decreasing in fish is closely related to poor water quality, which has become dark and polluted as a result of the dam that caused the reduction in the level of the river making it full of stones and unfit for reproduction fish fauna species.

## **II.1 - Balbina Village: Fragmented Lives And New Fishing Territories Reconfiguration**

The company Andrade Gutierrez Responsible For Building UHB built in his surroundings A small called village Balbina paragraph housing of Engineers and other employees and their families with Reasonable A political and administrative infrastructure so that would meet the technical apparatus and Operational One required construction of the dam. This small village has been spatially divided into: Waimiri<sup>9</sup> - Sector, where are located as First Streets and where Engineers and Administrative Staff lived. The Other sector called Atroari on the secondary Streets were built woods homes for the lower-ranking officials, workers construction and artisanal fishers who used to live resided near Balbina waterfall in Uatumã River Basin. In that location was crated a small fishing community. The spatial division culminated in a divided space(SANTOS, 1999), as well as a fragmented social life in the small town, which has been fighting with the same situation, thirty-five years later.

Nowadays there are about 500 families in Balbina's small community, which means about 2000inhabitants into both divided space. It has an administrative office – Uatumã Biological Reserve - REBIO UATUMÃ, created in 1990<sup>10</sup>. Before the construction of the UHB fishermen used to go fishing in their own water bowl Uatumã river. Without moving to other fishing spots they collected extractive activities on a small scale, which was enough to identify the places where occurred plenty of fish to catch them up. Moreover, they developed subsistence agriculture with small fields and plantations of food crops with short cycles in areas near their homes.

Spaces and fishing spots were reconfigured. The fishermen were forced to fish in more distant fishing spots, and travel long distances, in order to reach the lakes. Before fishing it was daily as families were river people. Currently, fishermen living in Balbina small town are moving to one of the paths that lead to nearby Balbina lake. It implies to run about 8 km by rental car or motorcycle taxi, hired to carry ice, food , the tail<sup>11</sup> , the fishing equipment and Styrofoam, to then step into the canoes or small boats and have access to points fishing in general on the islands , where usually there is already a small camp where fishermen go fishing . In general, they make this journey to and back on average three times a month, depending on the change of the Amazon hydrological cycles: the flood and ebb of rivers. It implies financial costs by reducing the gains from the sale of fish in the markets of the village or to middlemen who resell fish in the cities of Amazonas state.

Changing of scenery and fishing territories, transfigured the living conditions and food practices into the region. They have a long distance to go to make artisanal collection, subjected to long working hours under the sun, facing storms in search of fish, especially the peacock bass (*Cichla* spp.). There are men and women between 18-35 years of age with low education, many of them with health problems such as sunburn, back pain, resulting from fishing activities. The difficulties of providing resources to reproduce livelihoods of domestic groups today is a fact, for men and women who lived and live from fishing in Balbina small town. It is due to decrease in the amount and availability of natural resources, as we have mentioned before, it contributed for changing the way of living in rural areas. If in those times they could also obtain food products from small farming, today, it is different, the fishing community of Balbina, does not have a piece of land to small agricultural crops. Therefore, this community has difficulty to access and production gardening, food products, which reinforces dependency of the fisherwomen families from Balbinaon the fishing activity, as professional, and subsistence. Their livelihood gains are complemented by policies of income transfer from Federal Government including the Family Grant Program, among others.

Although there are silent conflicts between farmers and fishermen in its various forms - commercial, amateur - they have an interdependent relationship as natural resources, and help in the day to day in the communities. Chico Mendes Institute of the Ministry of the Environment – MMA, is in charge of the management of aquatic environments in Balbina lake. This institute establishes fishery agreements (CANNAS, 2012).

## **II.2 - Fishermen From Morena's Extension: 35 Years Later**

Morena's extension was opened along the Uatumã river, below the dam of the UHB, located at km 167 of BR 174, that connects Manaus to Presidente Figueiredo.

<sup>9</sup>In reference to Waimiri- ethnicity - Atroari community that had been moved to another territory.

<sup>10</sup>The REBIO UATUMÃ covers about 942.786 ha, covering a small towns as Presidente Figueiredo, San Sebastian Uatumã and Uruará under the responsibility of the FederalGovernment.

<sup>11</sup>Small outboard in canoe made of wood or aluminum, in its middle is installed a coated aluminum case, which is packaged ice for preserving fish caught.

Before the construction of the dam there were 2,000 families lived there (ALBUQUERQUE, 2013), some of them are still living over there, others have already moved to other territories. Although the extension has been deeply modified in its spatiality, they formed along Morena's extension several rural communities, which means a new different way of life as river people. In the first two years of operation of the plant (1989-90), as we have noted, the Uatumã riverbed served as a huge sinkhole killed or contaminated fish and submerged trees in a state of putrefaction. Below the dam, it is fully apparent disarray of the production areas and therefore the ways of organizing the traditional way of life. Due to degradation of river Uatumã the plant construction company undertook to compensate those *affected* by the dam. This promise did not come true. We realized that were built only artesian wells that in periods of flooding of rivers are submerged. Life of these communities is precarious, especially those that are close to the barrier downstream the UHB. This precariousness of families is noticeable at least part of the 38 km extension of Morena that borders Uatumã river. The living families there keep in their memories and report changes in their lives as a result of decreasing the production of fruits of the forest, wild animals hunting in addition to the scarcity of ichthyofauna resources as well as the existence of small domestic animals. Those communities had strong connections with the river, from where, they traditionally took their livelihood. The decrease of water resources has generated disastrous consequences for the domestic groups after impoundment. The expropriation of land and lakes and the lack of drinking water brought not only environmental problems but also affected the health of the affected population.

The hydrological system of Uatumã river follows the same characteristic pattern of other Amazonian rivers, with a period of high water in the months from April to June and low water from August to December. In this up ward movement and fall of water community's life changes. Although the strong smell of the river has decreased the amount of fish today is no longer the same. The difficulties of reproduction of natural resources are a fact. Although there is a natural tendency in the reservoirs after stabilizing the recycling of nutrients, it is known that the damming a river produces impacts with lasting effects and often irreversible for fish breeding. In the early studies on fishing in Uatumã River, in the area of Balbina, show that diversity is extremely low if compared to other fishing environments under natural conditions (ELETRONORTE, INPA, 1983).

Although management institutions have created over the years a number of environmental initiatives to recover the affected areas, such as the Sustainable Development Project Morena, downstream of the dam to house in one place the territorialized families, was not enough. As a result of this action, a little technical assistance not carried forward the project. The state did not care for traditional forms of community life, such as: beliefs, attitudes and symbolism established the vicinity with the land and water of the lives that were broken with the construction of the Plant (ALBUQUERQUE, 2013). The narratives are compelling to recover the memory from old times of fishing resources. "In the lakes, there were lots of fish, hunting was easy and life was different, full of plenty". The land was fertile. All you planted you had the crop for sure, as, beans, maize, cassava, pumpkin and even watermelon. "We had everything we needed. But here on this land everything is more difficult." They mention that when the river was low the phenomena called lowland cultures used to be grown.

The population affected developed agroextractivist activities. They used to combine subsistence farming with fishing and forest extraction. However the projects proposed by the government, did not take into account knowledge traditionally acquired and produced by fishermen that are characterized by having a symbiotic relationship with the fishing ground, where it reproduces itself socially by domestic production unit and on social relations mainly with relatives (ALBUQUERQUE, 2013). It is important, however, recognize in the narrative above a reinterpretation of rediscovering the importance and value of the previous place where they lived before fishing environments. All this reflects a sense of belonging and recognition of their territories - the river, the streams, the woods, the yard, as well as the legends, beliefs and myths that are expressed as the place memory, assuming a key role in this reframing process of their lives (DIEGES, 1999). In this perspective, to Diegues memory feeds the continuities and reconnects the past to this present being built by the affected people in Balbina. A closer relationship with nature and the peculiarities of the Amazon forest, inspires legends, myths and beliefs such as porpoises, the "matinta pereira" or other ways in which the magic that the forest provides the day-by-day life in the rural world.

### ***iii. To Conclude: The Socio-Environmental Conflicts In Precarious Territories***

Thirty-five years later after building the UHB, discussions are still fierce, not only by the fact that its energy potential, which, as expected, not fueled industries in the Manaus Free Zone and not the city of Manaus that is constantly blackouts energy.

In 2014, when the installation of the Truth Commission by the Brazilian government in order to investigate the crimes committed during the military dictatorship, it was a time when the plant was built. And, again it came to the fore the decimation of Waimiri- Atroaris Indians, who before the construction of hydroelectric were around three thousand and currently they are about seven hundred Indians, segregated in their villages, under strong control of Eletronorte. In this context, the debate on environmental issues also reignites itself, as new studies have addressed about dismemberment of the dam affected the way of life, especially fishermen who had to reframe their lifestyle along these years. As time goes by, public policies have created various environmental initiatives to recover the ecosystem and the populations affected by dam. Among them, we can mention the creation of the Sustainable Development Reserve Uatumã in 1990, which developed, among other environmental initiatives management plans in fishing environments.

It is important to note that the environmental problems that happened with the construction of this mega project is far from being an isolated case in the Amazon. As well as disputes over ownership of natural resources have always been and remains locked, therefore, into two camps: the material and symbolic. As noted Caseload (2004), the material arises in definition of relations of the power into the societies: the differential ability of individuals to have access to different types of natural resources. Symbolic field is where you configure and collide values, ideas and representations that organize worldviews and legitimize how in the space of defense, the power has been shared. It is observed that several families around the plant who were displaced with the change in environment and the territory is repopulated and its redefined customs to force in a short time as soon as the beginning of the construction of UHB. The entire length of the lake was used by fishermen who live and exploit the fishing resources. The land-water relationship has always been very strong in these fishing communities. Therefore, environmental conflicts do not occur properly by land but by water and fishing territory. The lakes and rivers has always been seen by the fishing communities as the place they take the support themselves and their families, as a form of social reproduction.

This is the reason for UHB be characterized as an area of environmental conflicts. As in Sclera teaches the idea of environmental conflict is historically constructed building on the speeches of the shortage in the eyes of affected people in the country is reflected in the unbridled quest for unglued national development of forms of ownership and cultural practices in certain areas where the natural environment is not only as a material source of livelihood but also a source of meanings and senses that organizes the structure, *modus Vivendi* of the affected rural community (ASCELRAD, 2004). The narratives made by social subjects who have been affected by dams are common in several Brazilian regions. In UHB is no different. Everyone recognizes that life used to be better before, by the riverside. For the fishermen, the dam represented the disruption of those who lost their lands, their roots, their culture, and their life stories. Furthermore, the promises of compensation for displacement of the managers did not come true, considering 70% of those *affected* do not receive any compensation. Contradictorily, they were not even benefited from electricity. Many of them are still waiting for the Program of the Federal Government, called Light for All. For them, this represented "the disruption of all life which does not exist any longer". It is finally noted that the expulsion and dispossession of traditional peoples of their lands are directly linked to their origins, which implies a historical-cultural uprooting. These people were not only dispossessed from their places and various ecosystems, but from their rituals, their values, their knowledge, as well as their way of producing and living.

The reunion of these affected people represented symbolically the way they recreate their work, which is closely related to the whole life and nature (DIEGUES, 1999). According to this this narrative: "we used to live better before, where we were, on our own land, on the edge of our river, fishing, eating and enjoying life." This is the reason for getting back this story, we should rebel ourselves, Hobsbawm (1998) with the intention of taking the roots and memory. For this reason, talking about disruption of the ways life of the affected populations, which, in our view, has the right to fight for their lands, in order to recover their sense of being and living. This fact was and is being destroyed and the imposition of this market logic, which has intensified the exclusion of these rural populations in the Amazon region, expressed in precarious territories, for survival human and social life.

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