



BRAZIL ANTINUCLEAR CAMPAIGN: IN DEFENCE OF LIFE, OF WATER AND OF ENVIRONMENTAL JUSTICE

LETTER

To Brazilians, to national and international social movements, to civil society organizations, to the Brazilian Institute for the Environment and Renewable Natural Resources (IBAMA), to the Justice System and to everyone who is committed to the defence of the rights to life, to water, to health, to land, to territory, to decent work, to food and to an ecologically balanced environment.

INTRODUCTION

A consortium of companies plans to install **a uranium and phosphate mining** in Ceará (Brazil), a project that has been called **Santa Quitéria Project**. The enterprise may bring with it a set of rights violations. Currently, it undergoes an environmental licensing process within the scope of the Brazilian Institute for the Environment and Renewable Natural Resources (IBAMA).

Due to lack of public discussion on the project and on its impacts and risks that it can cause to social and environmental rights, this letter aims at summarizing information on its main irregularities and at summoning **national and international support** in requesting to **IBAMA'S DIRECTORS** for technical, ethical and political responsibility to **reject the environmental licensing** of uranium and phosphate mining in Ceará.

PROJECT FOR URANIUM AND PHOSPHATE MINING IN SANTA QUITÉRIA – SUMMARY ON IMPACTS, ON RISKS AND ON IRREGULARITIES

In the semi-arid region of Ceará state, between the municipalities of Itatira and Santa Quitéria, 222 Km from Fortaleza, Itataia's mine is located. Making up a total of 65,6 million tonnes of cellophane - mineral from which uranium and phosphate are extracted, the deposit is the largest Brazilian mine.

Known as **“sleeping dragon”** by the surrounding communities, it has been discovered in the 1970s and, since then, it has been a target of interventions that have

never been discussed with local population. Currently, in order to exploit the region through what has been named as Santa Quitéria Project (PSQ), a consortium was created between the **Brazilian Nuclear Industry (INB)** and **Galvani - Industry, Trade and Services S.A** (which is controlled by the **Norwegian miner Yara**).

Such enterprise intends to produce, per year, **1.050.000** (one million and fifty thousand) **tones of phosphate derivatives** and **1.600** (a thousand and six hundred) **tonnes of uranium concentrate** so as to foster the **production of fertilizers, animal food and nuclear energy**.

Thus, if IBAMA grants the environmental licensing, Santa Quitéria Project will be responsible for **a disastrous expansion of agribusiness and for a consequent increase in the usage of agrotoxics and transgenics in Brazil¹**. Likewise, it will also be related to the implementation of nuclear plants in the country, enterprises which are wrapped in historical safety issues, radioactive trash and high operational cost (GREENPEACE, 2008).

To start its operation, PSQ will comprise a **Nuclear Complex; an Industrial-mining Complex; a pile of phosphogypsum; a pile of sterile and a tailing dam**, besides other auxiliary systems which will be used **over its twenty years of lifespan**.

After production, tons of phosphate derivatives and uranium concentrate are intended to be transported by road to the Port of Mucuripe in the municipality of Fortaleza. Therefore, **four loads of uranium per year** will be necessary, each one of them with **25 containers that will take 15 tons of radioactive material to the capital of Ceará**. Despite this fact, the companies responsible for the project **do not present in** either their Environmental Impact Study or in their Environmental Impact Report (EIA-RIMA) a **Transport Security Plan** and **do not even register the municipality of Fortaleza as an area to be affected by the Project**. Moreover, the population from the capital, as well as other people from other municipalities by which such containers will pass loaded with radioactive materials, **have not taken part in any discussion on the**

¹ “Since 2008, Brazil has been the biggest agrotoxic consumer in the world. The impacts on Public Health are quite extensive and reach several territories and involve different population groups, such as workers from a variety of fields and inhabitants of surrounding factories and farms, besides all of us who consume contaminated food (CARNEIRO *et al.*, 2015, p. 37). Among the main impacts caused by agrotoxics used in the agribusiness’ model of production, it is highlighted air contamination, as well as contamination of soil, of food and even of breast milk (CARNEIRO *et al.*, 2015); the disappearance of ecosystems (HOCSMAN, 2014); contamination of surface and groundwater (including those of human supply) and generation of diseases such as neuropathies, immunotoxicity; endocrine changes; alterations in the reproductive system, development and growth and neoplasias, among other damages to health (CARNEIRO *et al.*, 2015, p.78).

risks and impacts which are planned to cross their territories. They still remain **uninformed** regarding the existence of such Project.

The **piles and tailings dam** of the project, for example, will produce **radioactive waste deposits** that will continue in the outback of Ceará for about **80,000 years**. One of them will reach the total volume of more than **29 million tons of cubic meters²**, which is equivalent to a **building of 30 floors** and to the **volume of twelve Olympic swimming pools** (NÚCLEO TRAMAS, 2014).

With the action of the winds and rains on these structures, this means that there will be radioactive material being continuously spread throughout the soil, water and vegetation of different areas of the state, once it was verified that, **with winds of only 16 kilometers per hour, Uranium is capable of propagating itself for more than 1,000 kilometers**.

It is also necessary to take into account the **possibility of spills and disasters similar to the recent disruption of the Fundão Rejeat Dam, in the municipality of Mariana (MG)³**. In the case of Santa Quitéria, Rigotto *et al.* (2014) indicate that, in periods of less than 10 years, torrential rains can reach the territory and both the waste dam and the sterile and phosphogypsum piles could lose mass and extravasate beyond the limits of the enterprise, a fact that has already been verified in the Uranium mining that INB maintains in Caetité (BA). Events like this would lead to the **release of Radio-226 and Radio-228, both soluble in water**, increasing soil and groundwater contamination, since there is no mitigation action foreseen in the Environmental Impact

² The phosphogypsum stack is a wastebasket of phosphoric acid production that will reach 70 meters and will have 24,960,000 tons of material. The sterile stack, in turn, is a waste from uranium concentrate production that will reach 90 meters in height and will have 29,533,272 tonnes of total volume cubic meters.

³ On November 5, 2015, the dam broke out in the district of Bento Rodrigues, in the municipality of Mariana-MG. The dam belonged to the mining company Samarco, controlled by Vale and BHP Billiton. The tragedy left 19 dead, 1,200 homeless and more than 3 million people affected by pollution and by contamination of soil, air and important water reserves, such as Córrego Santarém, Rio Gualaxo do Norte, The Rio do Carmo, the Doce River. Besides these impacts, traditional communities also had their health problems aggravated; their agriculture destroyed, livestock, trade, services and fishing activity throughout the Rio Doce river basin. Regarding public and private infrastructures in affected cities, there was a decrease in tax collection of counties; it also generated losses related to the emergency actions to mitigate the effects of the disaster and the Loss of revenue from some services (MPF, 2016, *on-line*). In addition to Minas Gerais and Espírito Santo, the coast of Bahia has also been affected by such tragedy. Prior to the event, VogBR Consulting had issued an award stating that the dam maintained safety conditions (FASE, 2016, *on-line*). On October 20, 2016, the Federal Public Prosecutor's Office (MPF) denounced Samarco, Vale, BHP Billiton and VogBR for the tragedy. In addition to the companies, 21 people were also charged with felony manslaughter when it assumes the risk of killing (MPF, 2016, *on-line*).

Study of companies other than grounding and this procedure does not even appear in the design for the phosphogypsum cell, for example (RIGOTTO *et al.*, 2014).

In addition to this context of environmental contamination, the Santa Quitéria Project foresees the use of **1 million and 100 thousand liters** of water per hour in a region that is located in the **semi-arid** and which experiences **the sixth consecutive year of drought**. In order to make this objective feasible, it intends to count on the support of the Government of the State of Ceará for the construction of an adductor that will transport the water from the Edson Queiroz Dam to the mine, **what will increase the demand for this dam by 400% if the project goes into operation** (RIBEIRO, 2016).

According to the Hydrological Portal of Ceará (2017, *on-line*), however, **Edson Queiroz dam has 9.84%** of its volume, which raises the question, besides the excessive consumption of water by mining and the incompatibility of this activity with the conservation of the caatinga and local ecosystems, the **water unfeasibility** of the enterprise.

It is also worth noting that uranium and phosphate mining will consume the equivalent of **125 kite-cars per hour**, while communities and settlements around the mine survive on average with the equivalent of **14 kite-cars per month**. This fact shows that, in case the Santa Quitéria Project receives the environmental licenses necessary for its execution, it will be responsible for generating **a water injustice** that will violate, among other things, the equitable use of natural resources - foreseen in **Principle 5 of the Stockholm Declaration**⁴ - and the **human right to water**⁵, especially in relation to the legal criteria of availability⁶ and quality⁷.

⁴ According to Principle 5 of the Stockholm Declaration (1972), from the First United Nations Conference "The non-renewable resources of land must be used in a way that avoid the danger of its future exhaustion and ensure that all humanity shares the benefits of its use."

⁵ The human right to water and sanitation was recognized by Resolution A / RES / 64/292, of the United Nations General Assembly, on July 28, 2010 (ALBUQUERQUE, ROAF, 2012, UN GENERAL ASSEMBLY, 2010) A/HRC/RES/15/9, of the UN Human Rights Council, in September 2010 (ALBUQUERQUE, ROAF, 2012). According to the UN, its content involves five major criteria: availability, quality (safety), acceptability, physical accessibility and financial accessibility (ALBUQUERQUE; ROAF, 2012).

⁶ Availability refers to the fact that States are responsible for ensuring systems and structures that ensure water and sanitation services in all walks of life, including at work. (ALBUQUERQUE; ROAF, 2012, p.41, translated).

⁷ Quality (or safety) is linked to the fact that water should not contain organic or chemical contaminants that could be harmful to health (ALBUQUERQUE; ROAF, 2012, p.41, translated).

In addition to these aspects, it should be noted that **different studies have already shown the relationship between exposure to uranium** - and other elements of its decay series, such as Radon - and the **increase in cancer cases**.

In Germany, for example, Grosche *et al.* (2006) presented evidence of **increase in lung cancer risk** and Kreuzer *et al.* (2008) found evidence of a relative risk increase between Radon and the development of **extrapulmonary cancers**. In Theca Republic, in turn, Rericha *et al.* (2006) indicated an association between exposure to radon and elevation in the incidence of **leukemia** in underground uranium miners. Similarly, in Poland, Mészáros *et al.* (2004) also found evidence of long-term **cytogenetic changes** (chromosomal aberrations) in workers and former workers in underground mines due to exposure to differentiated doses of radon, as summarized by Porto, Finamore and Chareyron (2014).

All these data, therefore, put out the alert to the analyses that are being done on the Santa Quitéria Project, especially when it has been identified that the Environmental Impact Study and the Environmental Impact Report (EIA-RIMA) presented by INB and Galvani do not include information on the emission of Radon and on other elements of the uranium decay series; do not elaborate a computational simulation of dispersion of pollutants throughout the enterprise lifespan; do not foresee the possibility of spills and disasters involving the sterile pile, the phosphogypsum pile and the tailings dam; do not assess river basins in defining the boundaries of the geographic area to be directly and indirectly affected; undersize the number of people affected and are also accompanied by booklets with misinformation about the impacts and risks of the project.

It should be noted that in Ceará, a total of **156 peasant communities, three river basins and more than 60 (sixty) municipalities (including the state capital)** can be impacted by the Santa Quitéria Project. In addition, all agricultural regions in Brazil and the countries where fertilizers and animal food are exported may also be on the contamination route, as the project plans to separate uranium and phosphate by means of a recently developed extraction **methodology** (RIBEIRO *et al.*, 2008), **which was not applied yet in any industrial plant**. Thus, researches indicate that the **production of phosphate from this methodology will not be free of the presence of radioactive elements**, which **increases the risk to the health of consumers** (PIRES DO RIO, 1999; HESS, 2014) and **may increase the number of people affected by the project**.

It should also be emphasized that the state-owned company intending to install in Ceará is the successor of the company that carried out **uranium mining in Poços de Caldas (MG)** between **1981** and **1995** (PORTO; FINAMORE; CHAREYRON, 2014). After generating socio-environmental impacts and exploiting reserves to exhaustion, it migrated from Poços de Caldas to **Caetité (BA), where uranium mining occurs since 2000.**

In Bahia state, **INB also brings together a set of violations of rights** widely denounced by local communities and social movements, which have already been recognized by several institutions, such as the Water and Climate Management Institute (INGÁ-Bahia), the State Public Ministry, Committee on Research and Independent Information on Radioactivity (CRIIRAD), the Dhesca Brasil Platform, Greenpeace and **IBAMA** itself.

Among the violations identified in Caetité, we highlight the **contamination of water for human consumption** (GREENPEACE, 2008); **The release of Uranium-238, Thorium-232 and Radio-226** to the environment from the various accidents that occurred during the operation of the project (DHESCA BRASIL PLATFORM, 2011); The **non-monitoring** of Radium, Polonium-210 and other chemical substances in groundwater (CRIIRAD, 2015) and the INB's **concealment** of the results of the monitoring of gamma radiation, radioactive dust deposition, soil contamination, the contamination of rainwater, the food chain and the doses received by the mining workers (CRIIRAD, 2015).

In Ceará, since 2010, researchers from the Nucleus Labor, Environment and Health (TRAMAS) of the Federal University of Ceará, in articulation with local social movements, communities around the Itataia Reservoir and other universities, have analyzed environmental studies presented by INB and Galvani; and in addition to the impacts and risks mentioned herein, a series of other irregularities exist in the Santa Quitéria Project (ALVES, 2013; RIGOTTO *et al.*, 2014; COSTA, 2015; MELO, 2015; MONTEZUMA, 2015; RIBEIRO, 2016). This systematization was handed over to IBAMA, the Federal Public Prosecutor's Office, the Public Defender's Office of the Union and the Office of Human Rights and Legal Counsel Frei Tito de Alencar.

In September 2016, after analyzing these documents, requesting complements to the companies and verifying the content of such complements, the technical team of IBAMA issued a **contrary Opinion** to the enterprise. In such document, it was verified by the federal autarchy **the failure of mitigation measures regarding the possible**



radioactive contamination of the surrounding communities and the lack of authorizations by IPHAN (Institute of National Historical and Artistic Heritage) and CNEN (National Commission for Nuclear Energy). Among other irregularities, it is pointed out the lack of proof of water viability, the poor location of the tailings piles. However, since then, the Opinion has been directed by IBAMA, which, to date, has not formally ruled on the rejection of the Santa Quitéria Project.

This silence has worried the institutions and individuals who sign this letter. In Caetité, for example, in the year of 2000, following the spill of 5 million liters of uranium liquor from the INB sedimentation basins, a team of inspectors from the Coordination of Nuclear Facilities (CODIN-CNEN) inspected the site and also issued an Opinion contrary to the beginning of the company's activities. In the meantime, the CNEN Board, despite what was verified by the technical team, granted authorization for the initial mining operation in Bahia (PLATFORMA DHESCA, 2011), allowing a whole cycle of violation of rights to be achieved in the region.

In light of examples like this, we declare that WE WILL NOT ALLOW THIS HISTORY TO BE REPEATED IN CEARÁ!

CONCLUSION

Bearing in mind: the water infeasibility of the uranium and phosphate mining in the Central Sertão do Ceará; the incompatibility of this activity with the caatinga biome and the conservation of semiarid ecosystems; the damages of the uranium mining to the municipalities of Poços de Caldas (MG) and Caetité (BA); the example demonstrated by the rupture of the Fundão Reject Dam (Mariana-MG); the irregularities of the Environmental Impact Study presented by INB and Galvani in relation to the Santa Quitéria Project; the need to contain the expansion of agribusiness and nuclear energy due to its socio-environmental impacts; the importance of producing healthy food - based on peasant and agroecological agriculture - and the importance of protecting the political, social, cultural, environmental and territorial rights protected by the Brazilian legal system and the international system of protection of human rights, **institutions and individuals who sign this letter request the IBAMA Board to reject the request**



for environmental licensing of the Santa Quitéria Project, with the consequent filing of the fact due to its environmental unfeasibility

To the concretion of human rights to life, to health, to water, to land, to territory, to decent work, to food and to environment; to broad and unrestricted access to quality information and to respect for society's right to participate in decision-making processes on entrepreneurship and economic activities that can directly impact their safety, well-being, health, environment and modes of life, **we say NO TO URANIUM AND PHOSPHATE MINING IN CEARÁ - BRAZIL!**

Fortaleza-Ceará, March 22, 2017.

INSTITUTIONAL SIGNATURES:

Articulação Antinuclear Brasileira;

Articulação Antinuclear do Ceará;

Associação Brasileira de Saúde Coletiva (Abrasco);

Associação Movimento Paulo Jackson - Ética, Justiça, Cidadania (BA);

Coletivo Flor de Urucum - Direitos Humanos, Comunicação e Justiça;

Comitê de Solidariedade com a América Latina (LAG - Noruega);

Fórum Ceará no Clima;

Instituto Negra do Ceará (INEGRA);

Instituto Terramar de Pesquisa e Assessoria à Pesca Artesanal (CE);

Movimento dos(as) Trabalhadores(as) Rurais Sem Terra (MST);

Movimento pela Soberania Popular na Mineração (MAM);

Núcleo Trabalho, Meio Ambiente e Saúde (Tramas) - UFC;

Rede Nacional de Advogadas e Advogados Populares (RENAP);

INDIVIDUAL SIGNATURES:

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