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Stakeholder involvement in uranium facilities – Lessons learned, Brazil

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BRAZIL

5 regions:

- North

- Northeast

- Central West

- Southeast

- South

Source: Matos, J. -Eletronuclear

BRAZIL

Area: 8,514,215 km² (5th of the world)

Population: 197,755,800

made up of many racial and ethnic groups (Indigenous, Portuguese settlers, African slaves and, since the 19th century, immigrants).

Portuguese is spoken by all the population and Brazil is the only Portuguese speaking nation in the Americas.

Source: Matos, J. -Eletronuclear

BRAZIL

Largest Cities

Fortaleza = 2,500

Salvador = 2,900

Brasília = 2,800

Belo Horizonte = 2,500

São Paulo = 11,900

Rio de Janeiro = 6,500

Population: 200 million

The fifth most populous country in the world
but with a low population density = 22 inh/km²

Map of South America showing climate zones. The legend on the left lists the following climate types and their corresponding colors:

- tropical climate (Af) - Dark Blue
- monsoon climate (Am) - Medium Blue
- tropical savanna climate (Aw) - Light Blue
- hot desert climate (BWh) - Orange
- semi-arid climate (BSH) - Yellow
- oceanic climate/temperate climate (Cfb) - Green
- subtropical climate (Cfa) - Light Green
- temperate oceanic climate (Cfb) - Dark Green
- subtropical climate (Cwa) - Yellow-Green
- subtropical climate/temperate climate (Cfb) - Dark Green



STAKEHOLDER EXPECTATIONS AND PRESSURES

DEFINITION OF STAKEHOLDER

There are several definitions of 'stakeholder' in the literature. It can be proposed that stakeholders in the context of uranium sites (new, legacies or environmental remediation) are actors with a specific interest (formally articulated or not) in the uranium facility or activity (*).



DIFFERENT TYPES OF STAKEHOLDERS

(1) Implementers of the uranium facility or activity

Site/facility owners, funding entities, operations staff, managers

(2) Regulators

Regulators, institutions, local authorities

(3) Those cooperating or directly influencing the uranium site

Local communities, trade unions, waste managers, local enterprises, international parties, contractors, nuclear industry, non-nuclear industry, non-governmental organizations

(4) Those affected or indirectly influencing the uranium site

General public, politicians, neighboring countries, tribal nations, researchers and scientists, teachers and students, tourists, archaeologists, historians, museums, archives, media, health workers, pressure groups, religious groups

STAKEHOLDER EXPECTATIONS AND PRESSURES

It is widely agreed that the general public is one of the most important groups of stakeholders, and includes the great majority of laypeople.

- ✓ Public concerns can be one of the major driving forces behind decisions and are often independent of the results from any scientific assessments conducted to identify contamination and ensuing risks or hazards at a site.
- ✓ Public concern may be expressed in a number of ways. Individuals may be part of:
 - large and well-organized organizations - e.g. local, national or international non-governmental organizations – NGOs-, or
 - loosely knit groups of local individuals who are concerned about the potential impacts of a specific site in their immediate area.

STAKEHOLDER EXPECTATIONS AND PRESSURES

✓ Public:

- is often most concerned in instances in which the site poses a direct or indirect threat to their lives or property;
- may become concerned if the risks associated with a given site are not openly disclosed. It may be the case that the public's perception of the risk is greater than the actual risk.

Regardless of the type of public concern, regulators, operators and politicians are **well advised** to ensure that the concerns raised are addressed in a manner that is both **open and transparent**.

As with other aspects of daily life, when people feel that they have been dealt with in a fair and open manner, a level of trust is built between the parties.

When trust is broken, it is extremely difficult to repair

STAKEHOLDER EXPECTATIONS AND PRESSURES IN BRAZIL

In Brazil, there is a wide range of development conditions among the country regions and **Local, regional, national and/or international** stakeholders influence differently the planning, implementation and remediation of uranium sites

Less developed areas

- ✓ People living in the vicinity of uranium sites, mayors, city inhabitants, religious groups, local media - more likely to be interested in corporate, sustainable development of their regions

Negative Aspects - Problems in acceptance of local products by the neighborhood and also political to some extent, local level of risk perception;

Positive Aspects - expectations that reflect the local environmental and social impact (employment, improvement in the local infrastructure, tax return, etc.).

STAKEHOLDER EXPECTATIONS AND PRESSURES IN BRAZIL

Highly developed area

- ✓ People living in the vicinity of uranium sites - **Negatively Affected**
e.g. - Depressed property values or difficult to sell
- ✓ State Governments, Local Authorities, Non-governmental Organizations (NGOs)
Central Government

Negative information through the national media, directly and indirectly influence in State and even in Country elections, high level of risk perception, mistrust of authorities, etc.

National and international actors usually are strongly interested in indicators contributing to politics, national economy, sustainability and environmental performance indicators.

In Brazil, social, cultural and political situations are very diverse among regions within the country as it is among different countries

CAETITÉ URANIUM MINE

Currently, a new uranium recovery facility is operating in Caetité, in the country's Northeast – a less developed, very dry and sparsely populated area (~53.000 hab.)



CAETITÉ URANIUM MINE CASE



- ✓ Occurrence of several denouncements by NGO's and local population motivated by ideological and political interests;
- ✓ Acceptance by the Federal and Regional Public Prosecutor of the denunciation;
- ✓ Publication of the denunciation in the regional media and rarely national.

Consequences of the denunciations:

- ✓ Stigmatization of the people that live close to the uranium facility;
- ✓ Psychological impact on the local community;
- ✓ Problems in acceptance of local products by neighbor communities, causing economical impacts;
- ✓ Court proceedings.

Denouncements

Ciclo do perigo

IMPACTOS DA PRODUÇÃO DE COMBUSTÍVEL NUCLEAR NO BRASIL

Denúncia: CONTAMINAÇÃO DA ÁGUA POR URÂNIO EM CAETITÉ, BAHIA

Cycle of the danger

IMPACT OF THE PRODUCTION OF NUCLEAR FUEL IN BRAZIL

Denounce: Contamination of the water by Uranium in Caetité, Bahia



greenpeace.org.br

GREENPEACE



Minério radioativo também é detectado em dentes humanos

Um dos principais de contaminação, o urânio, está presente em dentes humanos. Segundo o relatório, a análise de dentes de crianças de Juazeiro, Bahia, revelou a presença de urânio em níveis superiores aos encontrados em dentes de crianças de outras regiões do Brasil.

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Radioactive ore is also found in human teeth

"According to the researcher, the population of Caetité is subject to radiological risks much higher than other populations from other areas in Brazil and in the World, and those circumstances can take to serious problems of health as the cancer occurrence".



Uranium contaminates water in rural town of Caetité

Urânio contamina água em povoado rural de Caetité

Enxurradas em novembro de água tem sabor peculiar. A população de Caetité enfrenta para beber água potável. A situação é preocupante para a população local. O estudo foi feito em laboratório da Universidade de Caetité, na Bahia. Enxurradas em novembro de água tem sabor peculiar. A população de Caetité enfrenta para beber água potável. A situação é preocupante para a população local. O estudo foi feito em laboratório da Universidade de Caetité, na Bahia.



Caso de anomalia gera apreensão
Case of anomaly generates apprehension

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A história da pequena Tauana Chagas Silva, 4 anos e nove meses de idade, comove e ao mesmo tempo amedronta os cerca de 300 habitantes da Vila de Juazeiro, zona rural de Maniçoba, distrito de Caetité, a 757 km de Salvador. Tauana nasceu sem o braço esquerdo e tem este lado do corpo atrofiado. Apesar de nenhum diagnóstico médico ter apontado a causa, família e moradores do lugar temem que a anomalia congênita esteja associada a uma suposta contaminação do lençol freático pela província uranífera Caetité / Lagoa Real.

da, nada, nada. Pior do que conviver com a in-

The history of small Tauana, 4 years and 9 months of age, it touches and at the same time it scares about 300 inhabitants of the Villa of Juazeiro...

Tauana was born without the left arm and she has this side of the atrophic body. The family and residents of the place fear that the congenital anomaly is associated to a supposed contamination of the water table by the Caetité/Lagoa Real Uraniferous province.

neto nasceu desse jeito", protesta o avô paterno, José Domingues.

O padre Osvaldino Alves Barbosa, que celebra missas na igreja vinda ao chafariz, traduz o sentimento da comunidade. Ele fala que os moradores ora ficam em silêncio, ora indiferen-

nasce com pescoço virado para trás, gado morre misteriosamente e já vi até bezerro nascer aleijado", afirma ele. "Eu mesmo fiquei doente por causa da água. E dormência nas pernas, nos braços, no corpo inteiro, além de dor de cabeça e pressão alta".

... groundwater contamination of the Juazeiro Community

Some Issues

- ✓ Up to now, the environmental monitoring programme conducted by the operator does not show any significant increase in the environmental dose;
- ✓ the Regulatory Authorities (Nuclear - CNEN and Environmental - IBAMA) inform to the media that the Environmental Impact Assessment of the installation demonstrates adequate safety, environmental and human health protection.
- ✓ There is a considerable diversity in the level of technical understanding of local stakeholders, demonstrating needs for training and capacity building, in order to enable the stakeholders to enter into any meaningful dialogue.
- ✓ Difficulties in establishing good communication channels
- ✓ Strong negative opinion of the population is influenced by the mayor and the local church

CHEMICAL PROCESSING OF MONAZITE – CITY OF SÃO PAULO - 2 different units
Brazil's Largest City - Population 19,000,000 inhabitants



Monazite Chemical processing – Remediated (1998)

1st Unit - Began operating in the mid-1940s



Today



Nowadays, the remediation carried out is rarely subject to questions

Monazite Chemical processing – 2nd UNIT - Site under remediation



USIN (2nd Unit) – São Paulo

- ✓ Occurrence of several denouncements by NGO's and population motivated by political interests;
- ✓ Acceptance by the Federal and Regional Public Prosecutors of the Denunciations;
- ✓ Publication of the denunciation in regional and national medias;

Consequences of the denunciations:

- ✓ Negative impact on the national media regarding the nuclear industry;
- ✓ Psychological impact on the surrounding residential condominiums;
- ✓ Depressed property values or difficulties to sell;
- ✓ Court proceedings.

Some Issues

- Environmental monitoring programme conducted by the operator does not show any radiological environmental impact;
- Strong negative population opinion influenced by the megachurch;
- Frequent negative national information through the media.

THE URANIUM SITES IN BRAZIL

GENERAL PERCEPTION

- ✓ The opposition to the nuclear sector encourages an upfront rejection of any activity;
- ✓ In general, governmental institutions are perceived as unreliable;
- ✓ Improvement of communication needed;
- ✓ Prosecution risks - if the community is not allowed to participate in the process, it will seek access through the courts (legal rights);
- ✓ A License does not mean the universal acceptance by the Community (obtaining the license involves not only technical measures, but societal impacts);
- ✓ Frequent question: Who is the responsible for what ?

SOCIAL ACTIVITIES AND STAKEHOLDER INVOLVEMENT IN BRAZIL

- ✓ Participation in Public Hearings – Environmental Licensing (IBAMA);
- ✓ Presentations about environmental education to employees, visitors and students in the main cities;
- ✓ Education and Culture – support of educational and cultural programmes;
- ✓ Citizenship – support of social programs (poor children and rural zones);
- ✓ Infrastructure – e.g. conservation of vicinal roads, access to water – development of programs involving the drilling and conservation of wells and water distribution (mainly in dry regions);
- ✓ Publication of local bulletins: Caetité, Poços de Caldas and Santa Quitéria regions;
- ✓ Participation in Public Environmental Events.

LESSONS LEARNED

- ✓ Concern for health, safety and the environment has grown fast during the past decades. However, uranium projects have been subjected to a level of scrutiny that goes far beyond what can be justified by their potential hazard.
- ✓ Action of stakeholders provides a valuable focus on aspects that need to be addressed by operators and regulators.
- ✓ Public perception of radiation risks has shown that scientific arguments are not enough against social and political matters.
- ✓ Social media can be used effectively to disseminate information in coordination between different actors (e.g., regulators, government).
- ✓ Media has an important role as an observer of the uranium industry. In the case of an event which could attract public attention to the uranium mining sector, journalists are likely to communicate the situation to the society.
- ✓ Information can immediately cross national borders and can be broadcast in international media – **Global negative impact!**

FINAL REMARKS

Each uranium project is technically, environmentally and socioeconomically unique, just because each context is unique too.

A comprehensive communication and education strategy should be provided with sufficient understanding of the issues with the purpose to include them as part of the decision-making process.

A continuous dialogue with all stakeholders is indispensable, based on clarity, objectivity and transparency.

Regardless of the type of public concern, regulators, operators and politicians are well advised to ensure that the concerns raised are addressed in a manner that must be both open and transparent.

As with other aspects of daily life, when people feel that they have been dealt with in a fair and open manner, a level of trust is built between the parties.

Where trust is broken, it is extremely difficult to repair.

Keep communicating!!!

Thank you for your attention!

