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## **Brazilian Nuclear Sector: an analysis of the sociocultural profile of women working in nuclear research and technological development institutions.**

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### **Introduction**

Throughout the years, women have been conquering their space in society. This conquest came amidst struggles since Colonial Brazil (1500-1822), at that time, women were "property" of their husbands and lived in a culture of repression to minorities, inequalities, and patriarchy. In this period, women's struggle was focused on the right to political life, education, the right to divorce, and free access to the labor market [5]. Since Colonial Brazil to the present day, there have been several significant struggles and conquests obtained by women, the main ones being the right to education for women, equal pay, women's insertion in public service, and women's participation in politics.

Science has always been seen as an activity performed by men. In the XVIII century, women's access to this activity were exceptions and it was mainly due to the family position they occupied: if they were wives or daughters of a man of science, they could dedicate themselves to the support work of science, such as taking care of collections, cleaning glassware, illustrating and/or translating experiments and texts [1]. The near absence of women in the history of science is considerable, because even in the first decades of the 20th century, science was culturally defined as a career unsuitable for women [2].

Currently, even having conquered space in science and technology, many women still have a greater preference in courses focused on the areas of health, education, and welfare. This preference can be explained by cultural aspects and the processes of gender socialization, which define what is "a boy thing" and "a girl thing" [3].

The greatest reference of pioneering women in the nuclear field is the bachelor's in physics and Mathematics from the Faculté des Sciences de la Sorbonne (University of Paris), Marie Skłodowska Curie, or just Marie Curie. Marie was responsible for the discovery of the chemical elements radium and polonium and the only woman to win two Nobel Prizes [4]. She was no exception regarding the difficulties faced at that time for being a woman and a scientist, but she is remembered as a reference of the female struggle for equal rights and represents the vanguard of professionals in the nuclear field [4].

For women, it is much more difficult to pursue a scientific career in a society that is patriarchal in character and in which the ease with which women can work in social institutions is an aspiration to be conquered [6].

The low access of women in scientific careers explained by Harding (1996) is divided into two forms, which are connected, the vertical and horizontal form. The horizontal or territorial form classifies and divides knowledge areas between male and female. The vertical or hierarchical form excludes women at the top of the academic career, also known as the "glass ceiling". In this way, the woman "sees" the top, but cannot reach it, a metaphor that demonstrates the invisibility in the evolution of women in the career [3].

This work has the objective of giving continuity to research that began to be developed at the Institute for Energy and Nuclear Research - IPEN, which carried out a survey of the profile of women who work at the institute. Some results of this research developed in IPEN, which investigated the sociocultural profile of women. Thus, the work aims to get to know the female researchers in the nuclear area in all the centers and institutes belonging to the National Nuclear Energy Commission (CNEN) that work with research and technological development, distributed throughout the national territory, and bring possible solutions to improve the policies aimed at women and their recognition.

## **Methodology**

This research will be conducted through the application of an online form through the Google Forms platform, with questions related to the role of women in the institution in which they are allocated. The selected themes are based on studies and data published by the international agency linked to this area (IAEA).

## **Results**

The preliminary results refer to a study already carried out, covering only women who make up the staff of a Brazilian nuclear institute. As a result of the questionnaire applied, relevant information was acquired to understand the profile of women and the role assigned to them in this institution.

Among the women who are part of the Institute, the majority identify as white, and no woman declared herself to be indigenous.

When asked about the lines of research in which women work, major parts are in the area of health or biotechnology.

The results in this new study are expected to be very similar.

## **Conclusions**

As the large amount of information acquired in this work was extremely important for a current discussion, we intend to disseminate this study to other CNEN research centers. Outlining the profile of women who work in research is important to know which guidelines should be adopted so that the demands of women researchers are met. And so, together with WiN Brasil, to develop cultures of gender inclusion and permanence of women in the nuclear sector.

## **References**

- [1] BOLZANI, V. da S. Women in Science: why are we still so few? *Science & Culture*, vol. 69, p. 56-59, 2017.
- [2] CHASSOT, A. *Is science masculine? yes, ma'am*. São Leopoldo: publisher Unisinos, 2017.
- [3] CORTES, M. R., *Women in Science: "Science is for women!"*, Federal University of Fluminense, Niterói, 2018.
- [4] CRUZ, C.F., *Women entrepreneurs in the nuclear area: a historical survey of the sector and the role of women in Brazil*, Federal University of Paraná, Curitiba, 2019.
- [5] *Feminist movement and history in Brazil*. available at: <https://www.politize.com.br/movimento-feminista/> e acessado 26/04/22 às 11:57.
- [6] TABAK, F. *Substantive studies on women and science in Brazil*. In: COSTA, A. A. A. 2002.