

## **Legislation as a practical instrument in sustainability**

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The aim of this paper is, after doing a reflection about the concept, to bring a brief overview of Brazilian law that after the 1980s, employ in their content terms like sustainability and sustainable development, in order to reassert the role of these laws in the construction of cities in consonance with sustainable principles.

In this sense, much is still discussed about overcrowded cities, which caused serious environmental problems as a result of the occupation of inappropriate areas, destruction of ecologically valuable resources and environmental pollution. The processes of massive immigration from the countryside to metropolises eventually externalize social and environmental costs in the form of saturation of air pollution levels, water, noise and visual. The urban environment, according to Mota (2011), consists of the "natural system" and the "anthropic system" and changes made by man in the environment are always made quickly and intensely and does not allow it to have a normal recovery of nature, whose processes occur more slowly. The search for the "relative balance" in the ecosystem, according to the author, is the biggest challenge; how to achieve sustainable development of cities in a way that achieves balance between human intervention and conservation of natural resources.

Although Engels (1845) had already pointed out the factors of environmental degradation that existed in the nineteenth century working class neighborhoods<sup>1</sup>, it was only in the twentieth century, when the "environmental crisis" hit the interests of the bourgeoisie that this speech has gained relevance in the media, in academia and public opinion (Coutinho, 2004). It is in this context of environmental degradation and reflection on the finitude of natural resources, evidenced by the book "The Limits to

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<sup>1</sup> Source in the book published in 1845: "A situação da classe trabalhadora na Inglaterra".

Growth"<sup>2</sup>, which emerges the concept of sustainable development in the way we consider today, whose precursor ideas were from Gifford Pinchot<sup>3</sup>.

However, the legal rules governing the states and seek to maintain a "healthy" social contract, not always contribute to the "relative balance" of the ecosystem. In this sense, Coutinho (2004) criticizes the role of law as an instrument of market relations and evokes this as the main legal instrument governing the performance of the real estate market and construction, among other spheres.

This article will bring a brief overview of the Brazilian law, the way they absorbed the concept of sustainability and how they aim to contribute to the development of sustainable urban areas. This work is the result of discipline Methodology and Research Practice in the Post Graduate Program in Architecture and Urbanism at the Federal Fluminense University.

Regarding the methodology; After bibliographic review on the concept of sustainability and an overview of the Brazilian legislation related to the planning of cities and buildings, it was held a survey whose universe are the dwellers and people who were passing by the neighborhoods of Santa Rosa and Icaraí. Those districts belong to Region Bay Beaches<sup>4</sup>, one of the five administrative regions of the city of Niteroi, a city-state of Rio de Janeiro. This area was chosen because it is a surface where building sector acted with great relevance in recent years. Another of site selection factor was that, amid the process of construction of multi-family buildings in the region, there was the implementation of greywater and rainwater reuse laws, which were applied directly to some projects in the region. The delimitation of the case study covering two districts was given either by proximity, just like the lack of physical boundaries that delimit them clearly, since the territory and its forms of occupation are quite similar.

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<sup>2</sup> Report conducted by MIT (Instituto Tecnológico de Massachussets), with the leadership of Dennis Meadows and by order of The Club of Rome.

<sup>3</sup> "Gifford Pinchot, forestry engineer trained in Germany, created the resource conservation movement, proclaimed its rational use. (...) Believed that conservation should be based on three principles: the use of natural resources by the present generation; the waste prevention; and the use of natural resources to benefit the majority of citizens" (DIEGUES, 2001, p. 18 – Author's translation).

<sup>4</sup> English translation of the expression: 'Região Praias da Baía'.

A quantitative and quasi-experimental survey attended by non-probabilistic sample was carried out and forms were applied in the districts of Icaraí and Santa Rosa, totaling 100 forms with 17 questions, applied at various days and times, following the percentual of Rio de Janeiro state population divided by age and gender groups<sup>5</sup>. Data were entered and processed by SPSS software 20. The sample size and the conference with the normal curve made possible the statistical inference for some variables studied, hence allowing to consider, in some issues to be identified later, the people who were passing by the neighborhoods as the universe of Santa Rosa and Icaraí regions. In sequence, as contextualization tool and enlightenment, we applied two semi-structured qualitative interviews.



**Figure 01.** Map with the delimitation of administrative regions of Niterói city and limits of the neighborhoods. (Source: Prefeitura Municipal de Niterói – Secretaria Municipal de Urbanismo e Mobilidade. [http://urbanismo.niteroi.rj.gov.br/wp-content/uploads/2014/09/SMU\\_MapaBairros\\_2014.pdf](http://urbanismo.niteroi.rj.gov.br/wp-content/uploads/2014/09/SMU_MapaBairros_2014.pdf) Acesso em: 22/06/2015)

<sup>5</sup> Source: IBGE (Brazilian Institute of Geography and Statistics).



**Figure 02.** Map with the delimitation of the area where the forms were applied. (Source: Sefl mede with Google Earth images).

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