

The knowledge production in ecology and biodiversity conservation in Brazil

A produção de conhecimento em ecologia e conservação da biodiversidade no Brasil

Rejan R Guedes-Bruni^{1,*}

1. Pesquisadora Titular do Jardim Botânico do Rio de Janeiro- JBRJ. Rua Pacheco Leão 915. CEP 2460 – 030, Rio de Janeiro, RJ.

*Autor para correspondência: rbruni@jbrj.gov.br

Brazil is known as a mega-diverse country, with an estimative of 44,000 up to 50,000 native plant species, what means that near 9.5% of total plant species of the world may be comprised in Brazilian territory. When only the Atlantic Rain Forest domain is considered, the occurrence of near 20.000 plant species is estimated, among what 8,000 are endemic.

A total territory extension of 8,514,877 km² makes Brazil the major country in neotropical region, which the largest continuous forest, the Amazon Forest, and two internationally recognized hotspots areas – the Atlantic Rain Forest and the Cerrado, are also included in Brazilian political limits. These characteristics are worldwide attractive for the process of public management of natural resources, and their associated biological patrimony.

The deforestation in the Amazon Forest Domain, and the expansion of the agricultural frontiers of soy and of sugarcane, which is ascending because of the demands of ethanol production as a biofuel are some of the environmental events have not only taken an important place in the agenda of communication media system, but have been also in highlights in the Brazilian political government

Concerning the scientific production on biological and environmental problems, it had been consolidated from the 1980's on. The training of human resources on environmental sciences, principally in Brazilian South and South-eastern regions had produced scientific knowledge on biological resources, but still insufficient concerning the demands of challenge of conciliation of biodiversity conservation and the needs of economical development.

Ecological researches on Brazilian forests began on 1945, at South-eastern mountains of the Rio de Janeiro state, at Serra dos Órgãos, Teresópolis city, at an Atlantic Rain Forest. Some other investigations, on the same perspective, were undergone on Southern and North-eastern Brasil, and some others of a naturalist approach about fauna and flora.

The researches on the ecological knowledge of the Atlantic Rain Forest were not driven merely by the knowledge, but because of the epidemics of yellow fever (yellow jack, black vomit, American plague) that happened at the Brazilian huge urban centres in the 1940s decade, and which prophylactic interventions needed information not only about its transmitting agent, but also about the sites of its occurrence. After that intense production time, a long scientific silence had gone that was justified not only by the changing interest to the Amazon Forest, as well as by dissolution of the team of researchers that worked at those areas.

Only from the 1980s on the Atlantic Rain Forest came back to the focus of ecologist interest. The study undergone in a Seasonal Forest, at São Paulo state, brought back the importance of researches on forest along the areas under oceanic influence, as well as the importance of the inventory methodology applied. The implementation of The Research lines Program on Botany by the Brazilian Council for Scientific Development – CNPq – was another important fact. This research program had focused the attention of universities and research institutes to the study of the Atlantic Rain Forest that was considered as priority area by CNPq for arising biological data at medium term. From that time on, the scientific production reached different areas and allowed an income of information that was employed to the conservation of this Brazilian biome.

Concerning the scientific production of the biodiversity related areas – ecology, environment, botany, and zoology – when they are compared to other countries, Brazil is ranked at the 20th position in bibliographic citations. When the annual publications paper profile is considered, from 1990 on, we conclude that the amount of papers published grew more than 20 times. The publication in international journal is still insipient, because in many cases the papers are classified as of local interest, and the Brazilian journals are far from the sufficiency to publish those manuscripts.

In the core of the knowledge construction there are some fundamental problems to be solved, such as sampling, replication, validation, accuracy, and representation. The knowledge that has been produced until now was made on a disciplinary way. Thus, it has been fragmentary in its origin, kept apart by the disciplines boundaries. Since it was conceived and constructed in this way it trends to evaluate only one of the variables of the complex and integrated scenery, but also a kind of academic battle of forces might not be discarded.

In fact, we cannot explain why some areas were chosen as priorities instead of any other, on a tautological process, since what was considered a priority was the one that had more available data arisen. It does not mean that there was a fallacious selection, but that decision was strongly affected by the team of researcher that were best politically articulated. However, in the context of the state of art in biodiversity studies, what are evidences?

We face an alarming abyss between the knowledge production about the Atlantic Rain Forest and the proposing of public policies for the sustainable development. While in the 1980s the environmentalism in Brazil brought the word sustainability to the core of the discussions, the scientific community started a new researching age that became consistent at the end of the 1990s. After the Summit Rio92, politicians made an appropriation of environmentalist speech, using initially the expression sustainable development, and nowadays sustained development, with no evidence to do it, no matter which conceptual basis that could be adopted.

The abyss between the speech of the scientist and de decision makers was also huge. Jailed by their working routines, and immersed in the disciplinary universe, scientists were conditioned to communicate only with their colleagues. The decision makers, by themselves, with their completely full schedules, and a short time for dialogue, expect that environmental problems could be rapidly solved on a coincident way to their own expectations of solutions. Maybe this situation, limited to the responsibility of the conservation biology in Brazil, illustrates what the sociologist Edgard Morin says: *the modern pathology of the mind is the hypersimplification that does not allow to see the real complexity.*