BIOMES – LADISLAU DOWBOR - PRESENTATION

Gone are the times when it was glorious to “break new ground” and exploit nature. Today, we have broken so much ground that nature cries for protection. Modern technologies allow us to extract natural resources and even to destroy them in massive scales. No planet can support 7 billion inhabitants and such obsessive consumerism. Every year, we add another 80 million to the world population. At the current pace and with the current production methods, we are the only ones who are ultimately unprotected.

Brazil is experiencing an unusual situation: as a country of abundant natural resources, it has grown accustomed to using them as if they were inexhaustible. It is now time to promote intelligent, sustainable policies. The same technologies that facilitate destruction can be inverted to promote development that is not predatory.

The volume we are presenting summarizes the situation of a wide range of biomes in Brazil. With all its immensity, this country is impressively diverse. By outlining key types of natural configurations, we provide an overview of its massive potential, serious risks, irresponsible activities, and, ultimately, alternatives that are under construction.

We also included statements of top researchers Helena Sobral, Sueli Furlan, Renato Tagnin and Ignacy Sachs. The initiative is from the *Núcleo de Estudos do Futuro* (NEF), the centre for future studies of the Pontifical Catholic University (PUC) of São Paulo, and furthers a similar work we conducted in the past with the same publisher on alternative energy for Brazil.

First, some comments on the views presented in this book. The first text, by Sueli Furlan, is about the Amazonian biome. The region practically covers half of the country and is the largest tropical rainforest in the world. It naturally requires a special form of exploitation given its unique characteristics. However, to this day we have limited ourselves to an extractivist vision, with forest extraction, forest fires, soybean plantations and extensive cattle raising on a fragile soil, combining interests that have generated the “Arc of Fire” and that only advance by compromising their own future. Sueli suggests a more balanced vision of social, environmental and economical aspects. The Amazon is not only nature, it is people, and the right course has been defined by the Sistema Agroflorestal (SAF), an agricultural and forestry system, by non-timber extractivism and by forest management. The new equilibrium, however, demands a much greater institutional density and strong regulatory presence of the State in the biome, where there is still an abundance of destructive illegal activities.

In the following three texts, Helena Sobral presents the Pantanal, the Cerrado, or Brazilian savannah, and the Caatinga, or dry shrubland, in a cross-section from East to West, as “savannah biomes”, unique in relief, type of soil and lesser or greater proximity with the ocean. The Pantanal is the largest floodplain in the world and marks the transition between the Amazonian and savannah system. With its characteristic water cycle, it generated an impressive variety of aquatic plants and animals, migratory birds and fauna that lives alongside the extensive livestock grazing. Fishing represents an important but threatened richness. In this region, agriculture and large-scale cattle raising lead to erosive processes, aggradation of rivers, and pollution due to use of agrochemicals and deforestation. Here, the challenge is also to overcome the dichotomy, preserve or utilize, and evolve to balance usage forms that ensure long-term sustainability.

The Cerrado, in the centre of Brazil, given its characteristics, feeds the large hydrographical basins for the North, East and South. These same characteristics facilitated a mechanized monoculture that is dependent on chemical inputs and agrochemicals. With only 20% of preserved biome, it is considered one of the richest and most endangered regions in the world. Deforestation occurs both due to agriculture and cattle raising, and charcoal production for the steel industry. Conservation units represent a mere 1.8% of the Cerrado. To rethink sustainability of this biome of such economical importance is the order of the day.

The Caatinga, from the original Tupi-Guarani word meaning “white forest”, defines the characteristically twisted, pale vegetation that clings to frequently sticky soil. Lots of sun, drought, heat and intermittent rivers. It is further weakened by deforestation and overgrazing of cattle and goats. There are several initiatives in the region, from the São Francisco River transposition project, with all its challenges and potential, to a wide range of initiatives of sustainable water management, multiplication of rainwater capture cisterns, and others. This biome is dominated by the issue of water.

The Atlantic Forest is another vast biome, with around 1.3 million square kilometres, that is suffering from profound degradation which has reduced it to 8.5% of its original area. Remnants are considered highly vulnerable and important for biodiversity. Thus, all efforts are significant, with hundreds of conservation units that are generating conflicts with communities interested in its exploitation. Here we must also look at future policies that are capable of conciliating development and preservation.

The southern fields and pampas have always been exploited for cattle raising due to their configuration and presence of native pastures. Degradation of these areas is caused by extensive farming and forestry (eucalyptus) in around 50% of the biome. As in the other cases mentioned above, the problem is not use, but the misuse of these areas. Whereas fire in other biomes is destructive, here is becomes part of the pasture renovation process. The fields, according to Sueli Furlan, “reveal particularities in vegetation dynamics that should be considered in the correct management for its protection”.

The seventh biome is water. In the words of Renato Tagnin, “the water that connects all these environments is a fundamental indicator of our relationship with the medium”. All biomes are integrated by the hydrological system, and the Brazilian system is especially rich and diversified, both in the Amazon and in the Pantanal, in the large rivers, in the immensity of the coastline, in the difficulties of the Sertão. The intensity of forest evaporation, the water storage capacity of roots in the Caatinga, the type of biodiversity in the Pantanal, the “water tank” that represents the Cerrado, the richness of the Atlantic Forest, the reproduction of marine life that relies on sediments carried by the rivers, everything depends on this integrating cycle.

In the last text of this book, Ignacy Sachs provides a wider vision. The biomes do not perfectly adjust to our geographical and administrative divisions. The main biomes of the planet face common challenges and cross borders. In this small spatial airship that, in terms of sustainability, faces a wide range of common problems, we must create cooperation systems for every biome. It is a whole new outlook on international relations – less international and more inter-biome; a renewed perspective to preserve this tiny planet.

The overall vision that is highlighted here is that, between the extreme prohibitions and anything-goes approach of irresponsible extraction and contamination of our biomes, we still have a giant leap to take; a technological leap in the sense of the intelligent use of resources, ethical in the sense of thinking of the future and the next generation, and financial in the sense of transitioning to production methods that, in addition to profitability, consider sustainability. In the analysed biomes, we observed that alternative solutions already exist; the challenge is to generalize them.