INSTITUTE OF APPLIED RESEARCH IN SUSTAINABLE ECONOMIC DEVELOPMENT – IPADES

BIOTA: KNOWLEDGE, CONSERVATION AND SUSTAINABLE USE

Francisco Barbosa

Associate President – IPADES

All that we found so far is very little compared to what is hidden in the vast treasury of nature

Antoine Van Leeuwenhock

Biota means the set of organisms (animals, plants and microorganisms) exist in a particular region (Enciclopédia, 1995; Botkin & Keller, 2011). One of the largest discoveries of ecology is that ecosystems are often considerable resilience; can be severely disturbed and still return to something like its original condition over a certain period. This predictable process of recovery after disturbance was named. He became the primary element of ecological theory (Raven & Zedler, 2011). This is the extraordinary ability of nature to maintain the incredible variety of life on Earth, for at least 3.5 billion years. Biota can be primary or secondary. Primary is the one that did not suffer disruption; is one that has undergone secondary disturbance, but may be recovered or to establish sustainable use in your environment.

Evidence of organisms of the past and study of ancient cultures suggest that the current form of our species, *Homo sapiens sapiens*, has lived on the Earth for about 200,000 years less than the blink of an eye compared to the 3.5 billion years of life on Earth. However, human interference with their ecological footprint the amount of biologically productive soil and water needed to supply a population with renewable resources that it uses, and to absorb or eliminate the waste from the use of such resources-increasing scale has modified the biota that support populations.

Up to about 12,000 years behind our species was **huntress** and **gatherer**, since three major cultural changes occurred. The first was the **Agricultural Revolution** when man began to grow plants and raise animals for food, clothing and other purposes. The second, the **Industrial Revolution** started in the second half of the 18th century which began large-

scale production of goods, and at the same time it advances in medicine, which allowed an increasing number of people live longer and better. Finally, **Globalization-Information Revolution** started in the second half of the 20th century, when we develop new technologies for quick access to information and the use of more resources on a global scale.

These cultural changes provided more energy new technologies with which alter and control the planet to meet our growing needs and desires. Also allowed the expansion of the human population, with greater longevity and the need to increase food production. In addition, each of these changes resulted in increased use of natural resources, pollution and environmental degradation, increasing our ecological footprint. In the 21st century we reached the fourth great cultural change, a **Sustainability Revolution**.

The sustainability revolution begins with the knowledge of biota that supplies us with natural resources and environmental services, so that we can reduce our ecological footprint. In Brazil we have example of this search. The Research Support Foundation of the State of São Paulo (FAPESP) launched in 1999 the Research Program in Characterization, Conservation, Restoration and Sustainable Use of Biodiversity in the State of São Paulo (Biota FAPESP), whose goal is to discover, map, analyze the biodiversity in the State of São Paulo, including flora, fauna and microorganisms, but also assess the possibilities of sustainable exploitation of plants and/or animals with economic potential, and subsidize the improvement of public policies on conservation of forest remnants.

Have already been finalized 145 research projects and 77 are in progress. The program also publishes a magazine, Biota Neotrópica, with online access. This year the program has launched the cycle of conferences "Commitment to the Improvement of the Teaching of Biodiversity in Brazil". Is a contribution to improving the quality of scientific and environmental education in Brazil. Are eight lectures, that will take care of the major biomes of Brazil: pampa, pantanal, cerrado, caatinga, Atlantic forest, Amazon, marine and coastal environments and biodiversity in urban and rural man-made environments.

Primary tropical forests are among the most species-rich ecosystems of the planet. That is why it is important to keep the primary forest fragments still extant, since these are most promising for the future forest expansion. Natural regeneration will happen more quickly and will have a higher composition of primary species in areas adjacent to primary forests and in regions where the flora and fauna are protected from harvest and hunting (Chazdon *et al*., 2009).

But, the secondary forests deserve attention as to their knowledge and sustainable use. Its importance has been growing not only by increasing its length, but also by the recognition of the environmental services they provide to humans and the environment (Brown & Lugo, 1990; Chazdon *et al*., 2009; Guarigata & Ostentag, 2001; Lugo, 2009).

In addition to absorb large amounts of atmospheric carbon fixing it as biomass during the growth of vegetation, plays key role in conservation of habitats harboring great diversity of fauna and flora (Barlow *et al*., 2007).

On a regional scale, secondary forests comprise arrays permeable connecting remaining forest fragments, easing the edge effects on these environments (Marsh *et al*., 1999) and allowing the offset and the survival of fauna (Barlow *et al*., 2007). In addition, protect the soil from erosion, leaching degradation, contributing to the regulation of hydrological cycles and water quality in watersheds (Klemick, 2011).

The increasing importance of secondary forests worldwide alert for the urgent need to understand the underlying social and biophysical factors that affect his regeneration after the abandonment of farming practices and natural disturbances.

Thus it is urgent to invest more in the protection and management of remnants of secondary forests, by smaller and more degraded they are, to ensure the persistence of biodiversity and to improve the provision of environmental services, increasingly demanded by society.

Primary or secondary forests both are biota and should be studied and preserved their respective uses in a sustainable way. To this end, it is important that the Brazilian States like Sao Paulo to give importance to this issue. It is no longer possible for society to use this natural capital of predatory way because it offer to the population, in addition to the features whose use boosts the economy, environmental services. The later are of vital importance for life on Earth.

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