



SEMINÁRIO INTERNACIONAL

Science, Technology and Innovation for Conservation and Sustainable Use of Natural Resources in the Brazilian Amazon

Mauricio Antonio Lopes, PhD
Brazilian Agricultural Research Corporation - Embrapa

The Amazon is an unparalleled space. Endowed with valuable natural capital and cultural wealth, the Brazilian Amazon houses a significant portion of the planet's biodiversity, water resources, minerals, and environmental services. The Amazon biodiversity is one of the richest in the world, and is a matter of great interest. Two thirds of the world biodiversity is found in tropical areas, being 37% of it located in tropical America. A good portion of such diversity is found in the Amazon, which houses about 60,000 species of plants, of which 30,000 are higher plants, with more than 2,500 tree species. The Amazonian forests, wetlands and savannas have at least 10 000 plant species that are active carriers of medical, cosmetic and biological control agent. At least 300 species of edible fruits are found in the region. Also, the Amazon has 2.5 million species of arthropods (insects, spiders, centipedes, etc.), 2000 species of fish and 300 mammals. The Amazon basin is also the biggest reserve of fresh water in the world, thus representing an enormous potential for the region and the country. The quality of the water, as well as the biodiversity associated with it, is of utmost importance for the region and for the country. Other areas of great importance, which have been receiving growing attention, are the forestry resources, the study of the ecological sub-systems and of the impacts of the global climatic changes, as well as the promotion of sustainable agriculture in the region.

Due to its enormous natural potential, the Brazilian Amazon achieved the highest level of relative demographic growth in recent decades. This places great pressure on its rich natural resources, but also creates new possibilities for promotion of a new strategy of development for the region, centered in more creative and sustainable processes. In fact many consider that Brazil is moving fast along this path. Brazil has been increasingly recognized as a 'natural knowledge-economy' or a country with the innovation system in large part built upon its natural and environmental resources, endowments and assets. Even though many still consider knowledge economies and natural resource economies as being at two ends of a continuum of economic development, Brazil is bound to break this logic, as more and more Brazilians recognize that scientific and technological capability is not in opposition to natural resources and endowments, but integrally linked to them.

Today, there is no doubt that the development model to be pursued in the Brazilian Amazon must be innovative and unique. The Amazonian natural heritage and the environmental services it provides must be seen as the basis for a revolution in the frontier of science, as well

as unique opportunity to build harmony between regional development and environmental conservation. Also, Brazilian scientists understand that the challenge of transforming the natural capital of the Amazon in economic and social gains in an environmentally sustainable manner is not trivial. And this is so because there is no finished or tested model to be followed, since no tropical country has, up to now, followed a path of development based in diversified and sustainable use of natural resources. It seems that development in the Amazon must increasingly align to the logic of “Green Growth”, which is the label for a strong policy development strategy promoted by UNDP and currently in development in many parts of the world. It emphasizes environmentally sustainable economic progress based in low-carbon processes. This strategy is a reaction against trends linked to unsustainable patterns of production and consumption, such as the growth of pollution and resource-intensive industry, the intensification of unsustainable agricultural production, urbanization and incorporation of new consumption patterns, and an increasing demand for raw materials, energy and water. Also, concerns related to global climate change and the raising pressures to decrease fossil fuel use and greenhouse gas emissions are major driving forces behind “Green Growth” policy development and implementation.

Science, Technology and Innovation (S,T&I) are essential instruments in the realization of this vision, enabling sustainable development in an space so diverse, complex and rich as the Amazon. Critical mass and scientific capacity are important and the large investments in research and education, made in recent years, is providing the Brazilian scientists with the conditions to support effective innovation strategies for the Amazon. Also, the country is contributing substantially to international policy dialogue, formulation and implementation, while forging its own path for developing the Amazon. A strong Sustainable Amazon Plan (PAS) was designed to enhance conservation and sustainable use of resources, to create jobs, generate economic growth and reduce social inequalities for the more than 23 million people living in the Amazon. Today, several mechanisms are in place, promoting sustainable development schemes and improving infrastructure to integrate the region into the broader economy. Strategies of financial incentives for environmental performance, training and capacity building and improved governance in the region are receiving great attention. Although many complex challenges are still to be faced, much has been already done to define the basis for a new paradigm for the development of the Brazilian Amazon.