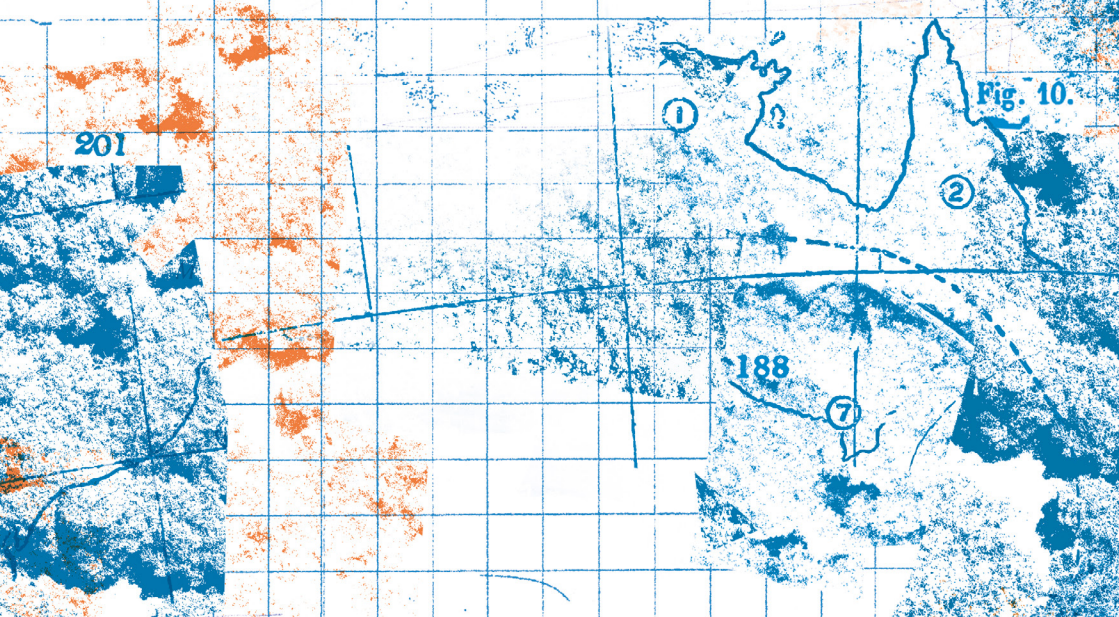


The sustainable solutions coming from the tropics

INSTITUTO FÓRUM DO FUTURO



Will there be climate, food, and peace if tropical peoples lack access to science, quality of life, and social and technological inclusion?

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Author's name Various authors

Organization Fernando Barros

Revision Pedro Vianna

Traslation Ana Albi-Netto, Themer Bastos de Oliveira

Graphic Design and Layout Nathalia Olsen, Ana Paula Araújo Salimon

Cover Saint Darius Graphics

Collaboration Manoela Silveira Crispim dos Santos

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Fórum do Futuro

Brasília, Distrito Federal

Phone: + 61 999850206

Email: contato@institutoforumdofuturo.com

www.forumdofuturo.org

SUSTAINABLE SOLUTIONS COMING FROM THE TROPICS

Will there be Climate, Food and Peace without Tropical
Peoples' access to Science, Quality of Life and
Social and Technological Inclusion?

Around the Centers there are aggregated actions of S&T, entrepreneurship and market, education, environment and culture, involving researchers, *stakeholders*, local organizations and communities. Initially, we start from qualified demands from local actors and *stakeholders* that are internalized in an academic view to define development actions. The projects are selected based on minimum criteria such as: geographical, economic, environmental and cultural representativeness in the biome; existence of science and technology institutes (ICTs) in the territory, organizations and political and civil society representation with actions related to the purpose of the project; existence of local actors with interest in its implementation; existence of themes or products aligned with the guidelines and scope of the biomes project; multiplicative potential and for scaling and replicability of economic activity; potential for change from extractive activity to bioeconomy based on science and technology; feasibility analysis of implementation and conduction; potential for economic, social and environmental impact within the scope of the basic principles of sustainability, with emphasis on income generation and forest preservation. Following this methodology, after several studies and meetings, some projects were prospected and they are at an initial phase, with exchange of general information and technical complementation for later evaluation of this intermediate stage of the project flow and then submission to the Board of the Forum. The Forum articulated and coordinated the implementation of a project on regenerative agriculture in the region of Rio Verde, in the state of Goiás, and in the SINOP Center, which is under implementation.

***José Oswaldo Siqueira**

Agronomist, PhD., Professor Emeritus of UFLA,
Counselor of the Forum of the Future,
Member of the Brazilian Academy of Sciences and The
World Academy of Sciences of the Developing World,
Ex. Director of CNPq and Vale Technological Institute
jose.siqueira105@gmail.com

REAL AMAZON: A NEW TERRITORIAL, ECONOMIC, SOCIAL AND ENVIRONMENTAL PERSPECTIVE

Judson Ferreira Valentim*

For decades, the Brazilian Amazon has remained the focus of debates between local, national and international views. Some perceive the region as a demographic void to be occupied and integrated into the national development process. Others perceive it as the largest stock of natural capital, with a vital role in the hydrological cycles and climate regulation. Meanwhile, over the last five centuries, the region has remained mostly a storehouse of biodiversity of interest to the global economy.

Historically excluded from the forums of debate, the Brazilian Legal Amazon, with an area of five million square kilometers, faces an unsustainable paradox. It has a growing population, currently with almost 30 million inhabitants, with a large part, especially those who live in rural areas and have been the "Forest Guardians" for centuries, surviving with the lowest Human Development Indexes (HDI), living in conditions of poverty and extreme poverty and dependent on government income supplementation programs.

As a result of policies implemented over the last 70 years, 20% of the Amazon biome has been converted to agricultural use, mainly cultivated pastures and areas with secondary vegetation, and the other 80% were designated as Conservation Units for Sustainable Use and Full Protection, Indigenous Lands and a considerable part consisting of Union lands still without designation. Almost 50 million hectares of public lands remain undesignated and subject to illegal land grabbing and deforestation due to the ineffectiveness, inefficiency and low effectiveness of the governance of environmental policies.

Over the last fifty years, public and private investments in research and development have resulted in impressive gains in agriculture productivity, making Brazil a major global producer and supplier of food,

fibers and biofuels. This has been achieved with increasing use of low-carbon tropical agriculture technologies developed by the Brazilian Agricultural Research Corporation (Embrapa) and a wide range of public universities and state research institutions. As of August 2024, the areas converted to agricultural use in the nine states of the Legal Amazon generated a gross production value of 30 billion dollars, accounting for 14% of the national total. However, current productivity is only one third of its potential with the appropriate use of technologies already available, but currently inaccessible to most farmers.

At the same time, the extraction of forest products generates a farm gate value of 780 million dollars per year, although the global value of production chains related to the Amazon bioeconomy is worth 450 million dollars per year. This demonstrates that the region continues to be a storehouse of biodiversity assets, with much of the wealth being generated outside its area, with few benefits for reaching the "Forest Guardians".

The rural reality in the Legal Brazilian Amazon is the existence of more than 920 thousand agricultural establishments, 83% of which are characterized as family farms. In this social segment, which includes settlers, indigenous, extractive, and riverside communities, only 8% have access to technical assistance, 4% have tractors and 51% do not have access to good agricultural or forestry production practices.

The complexity of the Amazonian challenges towards inclusive sustainable development is a result of the environmental and socioeconomic diversity. Solutions require State policies and not government policies. These must be the result of dialogue processes, ensuring the leading role of the different social segments in the region in their formulation, execution, monitoring and evaluation of efficacy and effectiveness.

For the "Forest Guardians", the challenge is the implementation of effective development policies and promotion of technological and social innovations that enable and strengthen widespread adoption of bioeconomy of socio-biodiversity. In this context, the focus should be in adding value to forest products, in addition to promoting environmental and cultural tourism activities, as well as payment for environmental services as sustainable strategies for productive insertion and improving the well-being of traditional populations.

For the over 700 thousand family farmers in settlements, policies must focus on developing and promoting widespread adoption of technologies for the transition from slash-and-burn to agricultural pro-

duction systems without the use of fire and the recovery of degraded areas, in order to ensure food security and increase family income and well-being. In this context, technologies for agroforestry and silvopastoral systems, cultivation of perennial species such as coffee and fruit species, associated with the implementation of cooperative agro-industries to supply local, regional, national and international markets, are excellent options. These should be combined with the recovery of degraded areas as a strategy to increase family land and labor productivity, with a reduction in deforestation and fires.

Additionally, adequate credit policies and acceleration of the land regularization process, validation of the Rural Environmental Registry and resolution of environmental liabilities can contribute to accelerating technological innovation with the recovery of degraded pasture areas and increased livestock productivity in areas already open. This will allow the release of areas with potential for conversion to agriculture to meet the growing global demand for production of food, biofuels and fibers, in addition to allowing land for the resolution of environmental liabilities in the Legal Amazon.

Certainly, this scenario will only be possible if the Amazon and its population are perceived as a solution and not as a problem and are protagonists in the design and implementation of policies that, instead of punishments (the stick), prioritize mechanisms that encourage (the carrot) producers to adopt good agricultural and forestry production practices. Furthermore, it is vital that there is effectiveness in the governance of environmental policies to curb illegal acts committed predominantly by public land grabbers.

*Judson Ferreira Valentim
Agronomist, Ph.D.,
Researcher at Embrapa Acre.
E-mail: judson.valentim@embrapa.br