

The Influence Of Public Administration On Resource Allocation For Higher Education In The Brazilian Amazon.

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Abstract

This paper analyzes the relationship between higher education, sustainable development and public policy in the Amazon. Introduces the concept of social relevance of higher education and discusses how this concept calls for a redefinition of the role of the university in general, and especially in the Amazon. The paper concludes by presenting examples of the UNESCO Chair in South-South Cooperation for Sustainable Development and the Incubator of Public Policies as new initiatives of social relevance of the university in the Amazon.

Keywords: *Amazon. Sustainable development. Social relevance. Higher education. Public policy.*

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Following the United Nations World Conference on Environment and Development in Rio de Janeiro in June 1992 (Rio 92), which popularized the concept of sustainable development, numerous initiatives have arisen globally to elaborate on it: master's programs, doctoral degrees, research institutions, diverse projects, conferences, seminars, colloquia, meetings, and, of course, literature. Moreover, green parties have gained prominence, environmental NGOs have expanded, ecological consciousness has heightened, and governmental entities, such as Ministries and State Secretariats for Sustainable Development, have been established; in summary, the term has permeated various human endeavors with diverse interpretations and objectives.

Beginning with the definition of sustainable development articulated in Our Common Future as development that satisfies present needs without jeopardizing future generations' capacity to fulfill their own needs, Ignacy Sachs (1) contends that to provide substance to this concept, sustainable development must be characterized as socially inclusive, environmentally sustainable, and economically viable over time. The problem is to identify models that satisfy all three characteristics concurrently; achieving one condition must not compromise the other two. Sachs (11) posits that one might envision economic growth characterized by a relatively equitable distribution of its benefits, yet achieved through the exploitative utilization of natural resources, which progressively depletes their availability and reproductive capacity, thereby jeopardizing the survival of future generations; this scenario exemplifies certain economic booms in the prosperous post-war era within industrialized nations. Conversely, economic expansion may be environmentally sustainable yet socially inequitable or ethically objectionable. In essence, it must focus on the essential stewardship of nature,

guaranteeing the regeneration of natural resources; nonetheless, its advantages are disproportionately allocated to a minority, exacerbating social disparities and enriching major corporations. This represents the peril of a green economy devoid of social inclusion. Alternatively, the unsustainable model we inhabit, which fosters significant economic development, depletes natural resources, and perpetuates social exclusion. Consequently, the quest for an alternative to this model gives rise to the concept of sustainable development. A development process is sought that fosters the well-being of all, grounded in ethical principles of justice and solidarity; ecological responsibilities towards current and future generations; and economically efficient mechanisms that reflect society's collective understanding of rational natural resource utilization, rather than solely prioritizing Profit maximization.

In a comparable manner, the United Nations Conference on Environment and Development in Rio de Janeiro in 1992 advanced the foundational concept of sustainable development, which fostered novel perspectives on nature and human interactions with one another and the environment. Likewise, the UNESCO World Conference on Higher Education (WCHE) in Paris in 1998 established the equally foundational concept of the social relevance of higher education.

The significance of higher education must be evaluated according to the alignment between societal expectations of institutions and the actions of those institutions. This necessitates ethical standards, political neutrality, critical thinking, and improved alignment with societal issues and the labor market, grounding long-term strategies in social objectives and needs, while respecting cultures and safeguarding the environment (2).

This notion, related to sustainable development, has engendered global research, discussions, and forums at all levels and from numerous perspectives, all of which concur that it has necessitated a redefinition of the role of higher education in society. Consequently, for higher education to influence sustainable development, it must be pertinent, signifying quality education that is accessible, accountable, and dedicated to societal welfare, thereby aligning with the sustainability of life and the dignity of humanity on Earth. Significant transformations are required across multiple domains, including content, methodologies, administration, resource distribution, and collaborative frameworks.

The purpose of higher education must be redefined: Its primary objective should be the establishment of a new, non-violent, and non-exploitative society that can drive the essential transformations toward a new development model. Consequently, the university, while upholding the quality and universality of knowledge, must engage actively and assume a pivotal role in delineating and advancing national and regional initiatives grounded in universal human values and aligned with its own requirements. The university must take the initiative in establishing measures to eradicate social exclusion and its related issues, while fostering happiness, peace, justice, and social fairness. Consequently, the quality of higher education must not be confined solely to the generation of exemplary research and instruction; it must also, fundamentally, possess social relevance in addition to fulfilling these two criteria.

One should inquire about the advancements made in higher education in Latin America, namely in the Amazon, since the UNESCO Conference on Higher Education in 1998. Field experts assert that the balance is small and that the Conference's impact is insufficient to realize the intended transformations.

Universities and research institutions in Latin America, whether independently, collaboratively, or through networks, are gradually exploring innovative methods to enhance access and social inclusion, as well as to render academic endeavors and scientific output more socially pertinent. At least thirteen university networks function in Latin America and the Caribbean, including national associations and topic groupings (3). These networks are gradually enhancing scientific competence and promoting regional cooperation. International research teams are currently engaged in solving issues like water management, environmental change, deforestation, tropical illnesses, and regional development. Student and faculty exchanges, foreign activities, publications, and missions occur often.

Nonetheless, despite these endeavors, the generation of knowledge and the education of scientists in Latin America remain undeniably inadequate to address the region's sustainable development challenges. Data from the UNESCO Institute for Higher Education in Latin America and the Caribbean (4) indicate that: a) The region is home to approximately 14 million higher education students, with 60% concentrated in three of the 33 countries: Brazil, Mexico, and Argentina; however, it also has 37 million illiterate individuals. b) Only four countries—Argentina, Panama, Chile, and Cuba—have over 45% of their 20-24 year old population enrolled in higher education, whereas most developed nations exceed 55%, and ten countries in the region, including Brazil, have less than 30%. c) Brazil produces around 11,000 PhDs annually, yet still has 15 million illiterate individuals. d) The region contributes 3.7% to global scientific output, with 83% concentrated in Brazil, Argentina, and Mexico; these three nations also represent 80% of the region's patent applications. Mexico, with 107,400, and Brazil, with 139,000, collectively account for over 75% of the region's postgraduate students, who constitute only 2.8% and 6.3% of the total higher education student population in each country, respectively. Among the 2,188 doctoral programs in the region, Brazil holds 48%, Mexico 19%, and Argentina 13%. Thirteen universities in the region offer doctoral programs, with 52 in Brazil and 80 in Mexico (3).

In the Amazon, despite its ecological abundance and global significance, the constraints are much more pronounced. The Brazilian Amazon is the most underserved region in the nation regarding investments in Science and Technology and researcher training programs, a situation that also applies to other national Amazon regions. In 2008, the Northern Region of Brazil accounted for merely 4% of the 66,785 doctorate-holding scientists in the nation, as reported by CNPq (5). Furthermore, CAPES (6) indicated that in 2009, this region represented only 4% of the 4,099 postgraduate programs (master's and doctorate) nationwide and 3% of the students enrolled in postgraduate studies, despite exhibiting the most significant growth in postgraduate courses compared to other regions during the last triennial evaluation, at 35.3%.

The Director of the National Institute for Amazonian Research (INPA), Adalberto Val, stated that although the Northern Region comprises over 10% of the nation's population and contributes approximately 8% to the national GDP, hardly 2% of research investments are allocated to this region. In the 1990s, Val asserts, the Amazon became a "totem" of environmentalism, leading to the implementation of several scientific projects, cooperative agreements, and research missions. Over 200 international research missions were conducted in the Amazon throughout that decade. Despite these endeavors, scant knowledge persists in the region; over two-thirds of the scientific output concerning the Amazon is produced and retained in other nations, with 70% of this output lacking Brazilian authorship (4). "If sovereignty signifies the regulation of information regarding one's living environment, we possess control over merely 30% of the Amazon," says Val (4). These figures pertain to the publication of articles in indexed journals. A distinct body of knowledge, rooted in the memory and ancient customs of indigenous peoples, mixed-race individuals, and other regional communities, remains unacknowledged by science and is threatened with extinction. Likewise, other scientific works disseminated in books, journals, and other mediums with restricted circulation are similarly obscure and underutilized.

The inadequate regional scientific capacity in the Brazilian Amazon and other national Amazon areas, despite recent efforts to enhance it, underscores the lack of national higher education, science, and technology initiatives that adequately address the developmental challenges posed by the Amazon for both countries and the global community, particularly for the region itself. There is a pressing need for projects that can reinvent the Amazon and establish a transformative, high-quality university that prioritizes regional interests; specifically, a genuinely Amazonian and pertinent institution, whose primary focus is to explore "not how Science can exploit the Amazon, but how scientific knowledge can be generated in and utilized by the region" (5).

Paradoxically, the Amazon region has some of the lowest human development indices globally, and there is an agreement that without a solid science and technology infrastructure tailored to the region's demands, this contradiction of abundance and poverty cannot be rectified. Professor Bertha Becker (6) asserts that a genuine "scientific revolution" is essential to accomplish this, utilizing the most sophisticated instruments, exceptional expertise, and groundbreaking discoveries of modern science, in conjunction with historically accumulated local knowledge.

Two instances of innovative initiatives aimed at enhancing the social relevance of the Amazonian university merit mention: The UNESCO Chair (11) in South-South Cooperation for Sustainable Development and the Amazon Public Policy Incubator are initiatives located within the Center for Advanced Amazonian Studies at the Federal University of Pará.(7)

The UNESCO Chairs Programme (11) was initiated in 1992, designed as 'think tanks' and 'bridge builders' that connect academia, civil society, local communities, research, and policymaking. It aims to enhance North-South, South-South, and North-South-South collaboration, establish centers of excellence and innovation at regional and sub-regional levels, and invigorate networks and partnerships.6. The UNESCO Chair (11) in South-South Cooperation for Sustainable Development, established in 2006, seeks to generate scientific knowledge to enhance South-South cooperation for sustainable development by executing a comprehensive array of activities and partnerships focused on higher education, research, and documentation, particularly concerning issues such as population and environment in the Amazon and the Biosphere Reserves Program.

Since 2010, the Sustainable Rural Development and Biodiversity Conservation in the Amazon Biosphere Reserves Project has been established through this Chair. The UNESCO Biosphere Reserves Program is a highly promising project aimed at successfully integrating ecosystem preservation with the enhancement of community well-being in designated regions. Biosphere Reserves (BRs) were instituted under UNESCO's Man and the Biosphere Programme (MAB) in 1976 and are characterized as:

Sites designated by nations and acknowledged under UNESCO's Man and the Biosphere Programme (MAB) to advance sustainable development through the initiatives of local communities and robust scientific understanding. Biosphere Reserves serve as optimal locations for reconciling the preservation of biological and cultural diversity with economic and social development, facilitated by partnerships between humanity and nature. They provide a platform to test and showcase innovative sustainable development strategies at both local and international levels (9)7.

This concept posits that Biosphere Reserves (BRs) serve as venues for implementing and studying

sustainable development initiatives in designated regions, which may encompass various protected areas within the same BR. It emphasizes the integration of management strategies involving diverse stakeholders, including local communities, the private sector, governmental entities, NGOs, and the scientific community. The Biosphere Reserve Program presently encompasses a global network of 598 reserves situated in 117 nations across all continents, representing a diverse array of terrestrial and marine habitats, including mountain summits, forests, deserts, islands, oceanic depths, and coastal regions.

The expertise of BRs over more than three decades serves as a vital resource for the execution of sustainable development initiatives in critically significant regions, such as the Amazon.

The initiative "Sustainable Rural Development and Biodiversity Conservation in Amazon Biosphere Reserves" encompasses 12 RB9s situated entirely or partially inside this area, across Bolivia, Peru, Ecuador, Colombia, Venezuela, and Brazil. This project, situated within the Madrid Action Plan of 2008 (8) for Biosphere Reserves and the mission of the UNESCO Chair (11) in South-South Cooperation for Sustainable Development, targets the populations of the Amazon RBs. Its objective is to enhance their quality of life and biodiversity conservation by implementing actions that bolster their capabilities in rural development activities, thereby adding value to their products while preserving biodiversity. The study will enable us to comprehend the potential and constraints of the RBs in the Amazon as instruments for enhancing the integration of environmental and developmental activities conducted by local people. The project will facilitate the establishment of a georeferenced database for the 12 participating reserves, identify optimal practices for rural development and biodiversity conservation implemented in each reserve, and execute 24 experimental projects focused on sustainable rural development and biodiversity conservation within these reserves.

The Chair endorses the Environment, Population, and Development of the Amazon Project, initiated by researchers from the Center for Advanced Amazonian Studies, which comprises a network of scholars from all Amazonian nations focused on examining the interactions between population and environment in the Pan-Amazon region. The Chair's further activities encompass publications, the organization of symposia, seminars, and conferences pertinent to the advancement of the Humid Tropics, as well as engagement in international events. In 2009, a memorandum of cooperation was executed through the Chair between the Federal University of Pará (Brazil), the University of Kinshasa (Democratic Republic of Congo), and the National Commission of the Man and the Biosphere Programme (MAB) of Indonesia, aimed at enhancing South-South cooperation and fostering academic exchanges and collaborative initiatives pertaining to the sustainable management of the three largest tropical forest regions on the planet: the Amazon, the Congo Basin, and Southeast Asia, several of which are currently in progress.

Conversely, the Amazon Public Policy Incubator Project, established in 2009, addresses the social responsibility of the regional universities. Researchers from the region generate suggestions for sustainable development grounded in scientific research through the Research and Postgraduate Forum on Sustainable Development, making these proposals accessible to society and governments. The Research and Graduate Studies Forum on Sustainable Development in the Amazon consists of graduate programs established by universities in the Legal Amazon region, and seeks to "contribute to the formulation of public development policies aimed at the economic and social empowerment of the population residing in the Amazon, through the development of a prospective vision of the region, grounded in an increasing comprehension of regional issues, while consistently respecting the environment."

The Amazon Public Policy Incubator Project is an institutional framework facilitating collaboration among universities, research institutes, governments, and the productive sector of the Amazon. Its mission is to aid in the conception, formulation, monitoring, and evaluation of public policies aimed at sustainable development in the region, its states, and municipalities, leveraging scientific knowledge, traditional wisdom, and the informed involvement of regional stakeholders. The project aims to harmonize, integrate, and consolidate studies on the socioeconomic, political-institutional, and environmental phenomena of the Amazon at macro, meso, and micro-regional levels. Its objectives include contributing to the discourse on the economic, social, and environmental issues of the Amazon; systematizing information generated by research groups associated with the Forum for Research and Postgraduate Studies in Sustainable Development of the Amazon; monitoring and evaluating public policies in the Amazon, its states, and municipalities; formulating regional development policies and other public policies; generating and transferring modern public management methods and techniques; and producing and transferring social technologies to urban and rural communities marginalized from the formal labor market in the Amazon.

It is unequivocal that there are no straightforward solutions to effectuate the requisite adjustments in higher education within the Amazon. A robust science and technology system in the Amazon will facilitate equitable relationships with analogous institutions domestically and internationally, and the system's impact on regional development will be amplified by its social and scientific relevance (10). Implementing the requisite adjustments necessitates political, legal, institutional, and administrative measures, achievable solely through national transformation initiatives that prioritize the interests of the Amazon and its inhabitants.

It is imperative to acknowledge that knowledge has evolved into a potent instrument of control and a lucrative commodity. "Historically, economic power has facilitated access to knowledge; presently, knowledge has become the essential gateway to economic power." The essence and primary source of a people's authority and sovereignty in the contemporary era is the mastery of scientific knowledge" (5). In this regard, the Amazon, despite its abundant natural resources, remains significantly deficient in the crucial and potent asset of contemporary times: scientific knowledge that can judiciously harness its natural wealth for the advantage of the region and its inhabitants.

Leadership with a progressive mindset is essential across all domains, requiring both women and men dedicated to the principles of sustainable development to foster attitudes that dismantle obstacles and advance initiatives for the welfare of all, including present and future generations. The generation of knowledge focused on human well-being, which offers socially inclusive solutions, utilizes natural resources judiciously, and concurrently safeguards biological and cultural diversity, constitutes a challenge for all dedicated to the future of humanity and Planet Earth. Consequently, it is imperative to educate individuals to facilitate shifts in attitudes, so preventing environmental degradation and fostering the preservation of universal values, the establishment of a culture of peace, and the pursuit of equality and justice. An increased number of individuals with this capacity enhances the potential for political intervention to address these issues that have escalated to worrying proportions.

Science can achieve nothing by generating important, relevant, and dedicated information if the political decisions made are not appropriate. Mello (5) correctly asserts that, in the context of Brazil,

The primary challenge of Amazon's development is not technical; **it is political**. It necessitates a novel national initiative and the Brazilian State's facilitation of equitable possibilities for all citizens. In the absence of requisite scientific knowledge and the productive chains it informs, which create and enhance value – thus, without universities – natural resources fail to convert into tangible wealth; self-sustaining socio-economic development is unattainable; and human progress is hindered. In the absence of practical knowledge, stagnation is perpetuated. The region lacks any viable protection against biopiracy. Social inclusion is absent. Inter-regional inequities remain unmitigated.

Professor Bertha Becker articulated at the 2007 (6) annual meeting, which addressed the challenge of advancing regional development, that "it is not merely about pursuing new techniques for the Amazon region, but rather about a novel production model, grounded in information and knowledge, that influences the entire social and political structure" (4). The Forum for Research and Postgraduate Studies in Sustainable Development of the Amazon is being established in pursuit of this new approach.

References

- [1]. Sachs, Ignacy. *Desenvolvimento Includente, Sustentável, Sustentado*. Rio De Janeiro: Garamond Universitária – SEBRAE, 2004.
- [2]. UNESCO – Organización De Las Naciones Unidas Para La Educación, La Ciencia Y La Cultura. *Higher Education In The Twenty-First Century: Vision And Action – World Conference On Higher Education Final Report*. Paris: UNESCO, 1998.
- [3]. Gazzola, Ana Lúcia. *Cooperación Universitária: Internacionalización Solidária. Educación Superior Y Sociedad/Nueva Epoca*. Año 13, N. 2, 2008, P. 125-136.
- [4]. SBPC – Sociedade Para O Progresso Da Ciência. *Amazônia: Desafio Nacional*. Cadernos SBPC, 27, 2007. Disponível Em: [Http://Www.Sbpnet.Org.Br](http://www.sbpnet.org.br). Acesso Em: 25/03/2026.
- [5]. Mello, Alex Fiúza De. *Para Construir Uma Universidade Na Amazônia: Realidade E Utopia*. Belém: Universidade Federal Do Pará, 2007.
- [6]. Becker, Bertha K. *Ciência, Tecnologia E Informação Para Conhecimento E Uso Do Patrimônio Natural Da Amazônia. Parcerias Estratégicas*. N. 20, Junho De 2005, P. 621-651.
- [7]. Bernard, Deryck; Aragón, Luis E.; Clüsener-Godt, Miguel (Eds.) *Biosphere Reserves In The Amazon*. Belém: NAEA, 2007.
- [8]. Aragón, Luis E.; Clüsener-Godt, Miguel (Org). *Reservas Da Biosfera Na Amazônia II*. Belém: NAEA, 2008.
- [9]. UNESCO – Organización De Las Naciones Unidas Para La Educación, La Ciencia Y La Cultura. *Red Mundial De Reservas De Biosfera 2010: Sitios Para El Desarrollo Sostenible*. Paris: UNESCO, 2011.
- [10]. Brasil, Walterlina. *Pertinência Científica Das IFES Universitárias E Desenvolvimento Regional: Pressupostos, Razões E Alternativas Na Amazônia*. Belém: Universidade Federal Do Pará, 2003 (Tese De Doutorado).
- [11]. Sachs, Ignacy. *Ecodesenvolvimento: Crescer Sem Destruir*. São Paulo: Vertice, 1986.