

## **Sustainability Science at the Amazon Region: the need of advanced studies towards the sustainability implementation**

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The Amazon region has been traditionally characterized by having one of the largest areas of tropical forest in the world with significant reserves of biodiversity. The region is often perceived as a space to be preserved for the survival of the planet, however, concerning the public policies from the 1990s, some Brazilian strategies have been oriented toward implementing a process of regional occupation and development based on the improvement of road and river transport infrastructure as well as regional economic development. The adoption of such strategies would be effective in increasing the internal connection as well as trade related capacities for market access involving key local value chains. Additionally, a strong trend of urbanization has been observed, especially regarding the structure of population that currently has approximately 70 % of its 20 million inhabitants living in urban areas (Becker 2007). Thus, a number of socio-environmental, land and territorial conflicts have been established in the region, due mainly to the new geopolitics of Amazon that brings together social groups interested in different types of outcomes: the conservation of natural resources and the exploitation of the potential offered by the agricultural and mineral production. This scenario, together with the high rates of deforestation observed in recent years, has led federal and state governments to give a new direction to public policies. Despite the conflicts of interests, new strategies have tried to overcome the contradiction between economic and conservation policies to promote development with social and environmental sustainability.

With regard to all these aspects, it is necessary to find out ways to conciliate sustainable use of natural resources with well-being of local population, by reducing the rural and urban poverty and overcoming the conflicts between the demand for land and the territorial occupation model. A key step to actually realize such goals is to recognize the set of complex situations and different users in the Amazon. Basically, the analysis must take into account the extension of its territory, the multiple inter-relationships between biotic and abiotic components, the trajectory of land use and the diversity of existing landscapes and ecosystems. There are also inter and intra-regional differences, besides the lack of multi-scalar and multidisciplinary analysis designed to support the local decision making towards more sustainable policies. It has become clear that integrated policies for sustainability need to be based on local knowledge and practices to implement appropriate solutions to a number of environmental problems in the region. Therefore, with respect to capacity building in the field of science and technology for sustainability, the Pará State University, a public university located at Amazon region, has proposed the MSc programme in Environment and Sustainability which is intended to conduct high level outcomes research with innovative and interdisciplinary approaches oriented to analyze and evaluate scenarios related with the human-nature interactions. Such initiative would require collaboration between local scholars and worldwide institutes and universities in terms of information and expertise exchange as well as infrastructure support to promote knowledge creation by exploiting the existing interactions between the productive sectors, the government and the society.

The first main objective of the proposed programme is developing integrated approaches assuming different magnitudes of scales (of time, space, and function), multiple balances (dynamics) and multiple actors (individuals, government, economic sectors), according to the field of the sustainability science advocated by Martens (2006). By dealing with a wide

range of multidisciplinary fields of research, the MSc programme would focus on the design of mechanisms and solutions to ensure sustainability at the local and regional levels. Such approach is especially important to promote integrated management of areas where interactions and impacts occur at various levels and on different time-scale. Indeed, a large number of local problems could be used as research subjects and converted into sustainable solutions coupled with the development of strategies for local institutions and communities.

Therefore, an important contribution that could be made by the German-Brazilian Joint Working Group on Science for Sustainability would be to support this initiative and envisage further joint steps in a later stage. Types of support could include identifying research funding and scholarships opportunities to assist researchers and students, investments for infrastructure and access to data, information and research materials.

## **References**

*Becker, B. K.* (2005): Amazônia: nova geografia, nova política regional e nova escala de ação, in: M. Coy and G. Kohlhepp (Eds.), *Amazônia sustentável: Desenvolvimento sustentável entre políticas públicas, estratégias inovadoras e experiências locais*: Editora Garamond, 23-44.

*Martens, P.* (2006): Sustainability: science or fiction?, in: *Sustainability: Science, Practice, & Policy* 2(1):36–41; online: <http://ejournal.nbii.org/archives/vol2iss1/communityessay.martens.html> (accessed: 25 Jun 2009).

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