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## **Conservation Units, Tourism, and Environmental Impacts in the Bragantina Region, São Paulo, Brazil**

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### **Conservation units, tourism, and environmental impacts**

In the last decades, diverse environmental problems have attracted attention, research, and study from scientists, politicians, and even from the general population. Solutions have been proposed, and actions and programs implemented worldwide, all aimed toward mitigating or resolving the impacts on the environment. Among these studies, we can highlight those that led to the formulation and diffusion of the sustainability concept, which comprises biological, socioeconomical, ethical, and philosophical aspects (CMMAD 1988; Redclift and Woodgate 2000).

Initiatives that make possible the sustainable uses of natural resources are thus of extreme relevance. These programs are particularly vital in regions exposed to rapid deterioration or in areas with resources that are valuable, not only for economic uses, but for the survival of other species.

Currently, there is a global concern about the quality, quantity, and availability of natural resources and their conservation. This concern has led to the formulation of numerous public policies. Among these policies, we can point out the creation of conservation units (Brasil 2000).

In Brazil, conservation units were created with the intent not only to minimize the environmental impact of disordered occupation of areas with unique natural and cultural characteristics, but to raise public awareness of the importance of preservation and conservation (Secretaria de Meio Ambiente 2000).

Among the several types of conservation units created in Brazil, we can highlight the environmental protection area (EPA). According to the Brazilian system of conservation units, an “EPA is usually a large area, with some degree of human occupation and presenting abiotic, biotic, esthetic or cultural attributes, which are particularly important for the quality of life and the welfare of the human population. The basic objective of an EPA is to protect the biologic diversity, to discipline the human occupation process and to assure the sustainable use of resources” (Brasil 2001:17).

So, in an environmental protection area, there exists both legal control of and restrictions on the development of potentially degrading economic activities. However, the continuation of productive activities may result in land use conflicts if the several social actors involved do not cooperate in achieving novel economic practices (Wells and Brandon 1992; Hoeffel and Viana 1996).

Among the potentially sustainable economic activities proposed for conservation units are those related to tourism. According to Honey (1999; 2002) and Fennell (2001), tourism in conservation units may help develop environmental awareness, provide direct financial benefits to conservation projects and the local communities, and promote regional culture. However, tourism may also result in deep environmental impacts and has often been the mechanism by which preserved natural strongholds are being transformed into merchandise.

According to Rodrigues (1996), the appropriation of nature for tourism and subjugating it to “market” service would hinder social and environmental sustainability. Environmental and sociocultural degradation resulting from tourism is not different from that caused by agricultural and industrial activities. The model is always the same: the unsustainable use of resources until they are depleted and then relocation to other areas, which are in turn exploited. Similar ideas are pointed out by Krippendorf (2000), Honey (1999), and Fennell (2001) when analyzing the environmental impacts of tourism.

Ferreira et al. (2001), when analyzing social conflicts in protected areas in Brazil, pinpoint, among several other issues, the socioenvironmental impacts caused by some tourism-related activities, land speculation, and agrarian conflicts, as well as changes in work patterns and work relationships, and in local culture.

Other authors (Honey 1999, 2002; Fennell 2001) believe in the sustainability of tourism despite its potential for environmental degradation, as long as some basic principles are observed, such as knowledge of and respect for the environment, the active participation of local populations in the planning as well as the implementation of tourism activities, and the dissemination of conservation practices through environmental education programs.

### **Environmental protection areas, hydrologic resources, and sustainability**

In the state of São Paulo, Brazil, the need to preserve regionally important hydrologic resources determined the creation of the environmental protection areas of Piracicaba and Juqueri-Mirim Rivers Basins (EPA Piracicaba) and the Cantareira System (EPA Cantareira), among other conservation units (Secretaria de Meio Ambiente 2000).

These conservation units occupy a large part of the municipal areas within the Bragançina Region, located north of the metropolis of São Paulo. The Cantareira System supplies water to an extensive area of the metropolitan regions of São Paulo (60%) and Campinas (85%), the largest urban and industrial centers of the country, which are in constant conflict for water use. The Cantareira System includes four reservoirs—Jaguary/Jacaréí, Cachoeira, Atibainha, and Juqueri—constructed in the 1970s. They divert two-thirds of the region’s hydrological resources with the objective of consolidating the industrialization processes of the metropolitan region of São Paulo.

The Bragançina Region represents a singular example of environmental problems. It

contains headsprings and water-capture zones of regional importance and, despite its proximity to the metropolitan region of São Paulo, it still preserves significant remnants of the Atlantic Forest. Other relevant aspects are the presence of an historical–architectural patrimony inherited from the colonial period of Brazil and from the “Coffee Cycle” (second half of the 19th century), as well as attributes of a traditional rustic culture still extant among the regional populations.

These characteristics, allied to its natural beauty, have made the region a target for several real estate ventures, consolidating and increasing the land occupation process and disordered tourist use. Furthermore, ease of access to this region, through important regional highways, is provoking industrial and urban expansion and tourism development, thus increasing socioenvironmental and regional cultural impacts. This reality has required the elaboration and implementation of studies, projects, and action plans to enable sustainable management of natural resources (Vargas 1997; Hogan et al. 1997; Secretaria de Meio Ambiente 1998).

Among these actions we emphasize a sustainable development program based on *Agenda 21 (Schedule 21)* carried out by the Environmental Department of the State of São Paulo, named *Entre Serras e Águas* (“Among Sierras and Water”), meant to minimize social and environmental impacts and point out economic practices appropriate to the conservation of regional natural resources (Secretaria de Meio Ambiente 1998). Nevertheless, the program did not achieve its intended objectives, due to the absence of effective participation of the regional population and because of a lack of defined policies that resulted in the lack of enforcement of the environmental protection areas.

At the same time, we notice that there are many differing approaches for the development of Bragantina Region. Most municipal governments do not recognize the importance of environmental issues and predominantly adopt a developmental approach that considers the industrialization process as the way out of regional economic problems.

Since the municipal governments do not evaluate this ensemble of problems from a systemic viewpoint, they are not able to correctly evaluate the multitude of impacts resultant from this approach. For some municipal governments, regional environmental characteristics are an economic barrier preventing the implementation of several productive activities and requiring special care to minimize several impacts.

Over the last few years, the increasing restrictions and monitoring of the activities affecting natural resources have become significant in areas regarded as strategic, such as the Piracicaba River Basin and the Cantareira System. Nevertheless, these environmental regulations were not accompanied by local environmental educational programs, thus generating several conflicts.

When restricting economic activities, the environmental control system does not provide the rural population with environmentally sound feasible alternatives. This divergence of objectives gives no options to local communities; they persist in their traditional activities or in activities resulting in increased profits but causing significant environmental impacts, such as reforestation with eucalyptus, or the sale of their properties to real estate companies, with the consequent subdivision of land into small parcels (Secretaria de Meio Ambiente 1998).

It is therefore necessary to intervene with environmental planning proposals incorporating the concept of hydrographic basins, a historical evaluation of the regional ensemble of problems, environmental education programs, and a knowledge of the diverse conceptions of land use. These proposals would allow for concrete changes in the way natural resources can be used as well as in the elaboration of environmentally sound models.

The present situation demands the implementation of sustainable activities, including promoting tourism and education, utilizing the environmental/cultural patrimony of the region, as well as informing and educating local communities about the fragility and characteristics of the Bragantina Region, thus aiding in the recuperation and maintenance of the environmental quality, and of its past and its history.

### **Environmental education and participatory management in the Bragantina Region**

The creation of conservation units has historically resulted in several conflicts between the need for preservation and conservation of natural resources and the economic activities usually practiced by the local population. Another aspect to be considered is that, although one of the guidelines of the Brazilian system of conservation units is the guarantee of an effective participation of a local populace in the creation, implementation, and management of the conservation units, this involvement does not always take place.

This is an extremely relevant fact in an environmental protection area where, as Cabral and Souza (2002) point out, the social aspect is a predominant issue, due to the fact that, within an EPA, the owner—whether public or private—is granted the economic use of the property, together with the responsibility for the maintenance of the quality of the environment.

In this regard, we present several studies in progress that aim to characterize the social and environmental reality of the Piracicaba and Cantareira Environmental Protection Areas and the current situation of the Cantareira System and its hydrologic resources, as well as propose appropriate measures of intervention.

Vargas (1997), Hogan and Carmo (2001), and Fadini and Carvalho (2004), in their essays about the sustainability of regional hydrologic resources, emphasize the need for an integrated management involving government and users and present participatory planning proposals, which deal with the land occupation processes and the urbanization of the Piracicaba and Cantareira Environmental Protection Areas.

The environmental history of the Bragantina Region has contributed to the development of environmental education practices with university students, students from rural schools, tourists, and local community members that use examples of regional impacts as pedagogical material for reflection about environmental issues. These practices make it possible to propose solutions to detected problems, suggest environmentally sound economic alternatives that involve local communities, and rescue the cultural and natural characteristics of the region (Lima et al. 2003).

Participatory environmental education programs aimed at the regional populations made possible the training of environmental agents and the diffusion of a conservationist conscience. The data obtained from these programs indicate that environmental education may perform an important role in the implementation of environmental protection areas

(Hoeffel et al. 2004a).

According to Vasconcellos (2002), environmental education is included in the objectives of all management categories of Brazilian conservation units. This requirement implies that protected natural areas shall be planned and managed in a way that involves the local population, and stimulates behavioral changes. The author also emphasizes the need to transform the current relationship between human beings and nature by creating a “new culture.”

Studies developed by Hoeffel et al. (2004b; 2004c) and Fadini and Carvalho (2004) on the environmental perception of the various social actors in the Piracicaba and Cantareira Environmental Protection Areas, involving themes such as regional environmental impacts and participatory management, have been offering technical and scientific support to planning and environmental education works.

These studies show that there is a limited perception of the environment among members of several social groups. The environment and environmental education are both perceived as something separate from the daily lives of the interviewees and addressed only peripherally or partially. Interviewees in general do not perceive environmental degradation as a regional problem, and only when specifically asked do they discuss disparate environmental issues.

Once more, the local populace’s lack of involvement and knowledge of the environmental characteristics of the region becomes evident. There is no regional participatory mechanism or plan that could suggest preventive measures via individual contributions that local communities could make towards solutions to socioenvironmental problems. This lack of knowledge and participation in the management of the Piracicaba and Cantareira Environmental Protection Areas is reflected in the lack of conservation of natural resources, generating serious socioenvironmental problems.

This scenario reinforces the approach of Cabral and Souza (2002), which emphasizes the need for a comprehensive regional debate about the objectives, characteristics, and specifics of conservation units, promoting major participation not only from the public sector, but from the local population as well, in the management of socioenvironmental and political conflicts towards the effective implementation of a environmental protection area. This involvement will take place only through the creation of environmental education projects directed toward all community members, and by stimulating equal participation in the decision-making process by providing a comprehensive knowledge of cultural and natural aspects of regional issues.

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## **References**

Brasil [Government of Brazil]. 2000. *Lei no. 9.985/2000 de 18 de julho de 2000 que institui o Sistema Nacional de Unidades de Conservação*. Brasília: Imprensa Oficial.



- . 2001. *Roteiro Metodológico para Gestão de Área de Proteção Ambiental, APA*. Brasília: MMA/IBAMA.
- Cabral, N., and M. Souza. 2002. *Área de Proteção Ambiental: planejamento e gestão*. São Carlos, Brazil: RIMA.
- CMMAD [Comissão Mundial sobre Meio Ambiente e Desenvolvimento]. 1988. *Nosso Futuro Comum*. Rio de Janeiro: Fundação Getúlio Vargas .
- Fadini, A., and P. Carvalho. 2004. Os usos das águas do moinho—Um estudo na Bacia Hidrográfica do Ribeirão do Moinho—Nazaré Paulista/SP. *II Encontro da ANPPAS*. Indaiatuba, Brazil: ANPPAS (CD-ROM).
- Fennel, D.A. 2001. *Ecotourism: An Introduction*. London: Routledge.
- Ferreira, L., et al. 2001. Conflitos sociais em áreas protegidas no Brasil: moradores, instituições e ONG's no Vale do Ribeira e Litoral Sul, SP. *Idéias* 8:2, 115–150.
- Hoeffel, J.L., and R.M. Vianna. 1996. Impactos de Barragens e Transformação Regional: considerações sobre a implantação dos reservatórios do Sistema Cantareira na Região Bragantina. *Gestão e Desenvolvimento* 1:1, 87–102.
- Hoeffel, J.L., et al. 2004a. Moinho D'Água: Rural communities and environment – environmental education activities in an environmentally protected area. In *International Perspectives in Environmental Education*. W. Leal Filho and M. Littledeyke, eds. Frankfurt: Peter Lang, 247–258.
- . 2004b. Concepções Sobre a Natureza e Sustentabilidade. Um Estudo sobre Percepção Ambiental na Bacia Hidrográfica do Rio Atibainha—Nazaré Paulista/SP. *II Encontro da ANPPAS*. Indaiatuba, Brazil: ANPPAS (CD-ROM).
- . 2004c. Concepções e percepções da natureza na área de Proteção Ambiental do Sistema Cantareira. *Anais do IV Congresso Brasileiro de Unidades de Conservação*. Curitiba, Brazil: Fundação O Boticário.
- Hogan, D., et al. 1997. *Qualidade ambiental e desenvolvimento regional nas Bacias dos Rios Piracicaba e Capivari*. Campinas, Brazil: Nepam/UNICAMP.
- Hogan, D., and L. Carmo. 2001. Distribuição espacial da população e sustentabilidade: alternativas de urbanização no Estado de São Paulo, Brasil. *Idéias*, 8:2, 151-190.
- Honey, M. 1999. *Ecotourism and Sustainable Development: Who Owns Paradise?* Washington, D.C.: Island Press.
- Honey, M. 2002. *Ecotourism and Certification*. Washington, D.C.: Island Press.
- Krippendorf, J. 2000. *Sociologia do Turismo*. São Paulo: Aleph.
- Lima, F.B., et al. 2003. Caminhos do Moinho—Processos históricos e Educação Ambiental – Um estudo no Bairro do Moinho, Nazaré Paulista—SP. *Anais da 55 Reunião Anual da SBPC*. Recife-PE: SBPC (CD-ROM).
- Redclift, M., and G. Woodgate. 2000. Sustainability and social construction. In *The International Handbook of Environmental Sociology*. M. Redclift and G. Woodgate, eds. Northampton: Edward Elgar, 71–82.
- Rodrigues, A. 1996. A produção e o consumo do espaço para o turismo e a problemática ambiental. In *Turismo, Paisagem e Cultura*. E. Yázigü, A. Carlos, and R. Cruz, eds. São Paulo: Hucitec.
- Secretaria de Meio Ambiente. 1998. *Entre Serras e Águas—Caderno de Subsídios no. 4*. São

- Paulo: Secretaria de Meio Ambiente.
- . 2000. *Atlas das Unidades de Conservação Ambiental do Estado de São Paulo*. São Paulo: Secretaria de Meio Ambiente.
- Vargas, M. 1997. Piracicaba, Capivari, Jundiá: Em busca da gestão sustentável da água em três sub-bacias do médio Tietê. In *Qualidade ambiental e desenvolvimento regional nas Bacias dos Rios Piracicaba e Capivari*. D. Hogan et al., eds. Campinas, Brazil: Nepam/UNICAMP.
- Vasconcelos, J. 2002. Educação ambiental e interpretação: o fortalecimento dos pilares das UC. *Anais do III Congresso Brasileiro de Unidades de Conservação*. Fortaleza, Brazil: RNPCN.
- Wells, M., and K. Brandon. 1992. *People and Parks*. Washington, D.C.: The World Bank.
- Woodgate, G., and M. Redclift. 1998. From a 'sociology of nature' to environmental sociology: beyond social construction. *Environmental Values* 7:1, 3–24.