

# **ENVIRONMENTAL MANAGEMENT AND POLICY FOR AGRICULTURE: THE SÃO PAULO STATE ETHANOL CASE**

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The debate about development and sustainability stood out throughout the second half of the twentieth century. The evidence on the interrelationships between environmental quality, social justice and economic viability, inaugurated the questions about the relationship of natural and anthropogenic systems, which had influence in several sectors and activities.

Brazilian agriculture is among them. Thirty years ago, the country aimed to ensure domestic supplies and food security. Currently, besides consolidating the supply, there was a significant scientific and technological progress, increased productivity and also the growth of agriculture and agribusiness national production, with the expansion of agroforestry activities and agro-energy, and, with increased exports.

And the sugar cane agriculture stands out in this context. As a renewable fuel, ethanol use of cane sugar reduces carbon emissions compared to fossil fuels, and thus has been the focus of international discussions about replacing fossil fuels. In this context, ethanol has been in the arena of sustainability discussions as no other agricultural product in Brazil.

Given the importance of this issue, and the interface with policy and environmental management, this article aims at presenting the initiatives on environmental policies in the State of Sao Paulo related to the sugar and energy sector, focusing on environmental impacts and the new management model in the sugar and energy industry.

The sugarcane industry has been seeking ways to respond to a series of demands regarding the reduction of social and environmental impacts of its production process. The industry is already considering the international market will create new non-tariff trade barriers over the next year that will focus on further social and environmental impacts.

The agro-industrial system of cane sugar has undergone profound changes in its institutional environment from the 1990s. In the late 1990s, there was complete deregulation of the industry throughout Brazil, specifically the sugarcane and sugar prices. With the end of government regulation and the beginning of the free market without subsidies, the prices of sugar and ethanol began to be defined as fluctuations

in supply and demand. In 1997, it was created the Sugarcane Industry Union (UNICA), which currently is the largest representative organization of the sugar and ethanol industry in Brazil.

In parallel with these agriculture model changes, the environmental system was getting consolidated, moving from comand control approach, to new environmental management instruments. Two of them will be focused in this paper.

There is the Green Ethanol Project (Projeto Etanol Verde), established by the São Paulo State Environment Secretariat, under the program "21 strategic environmental projects". As part of the Green Ethanol Project, in 2007, the Environmental Protocol was agreed in order to encourage adoption of actions aimed at strengthening sustainable development in sugar and energy sector activities. The document text includes technical directives to be attended by the signatories, as well as commitments of government support.

Aligned with the strategy of the Environmental Protocol, in the context of the Green Ethanol Project, the Environment Secretariat and the Secretariat of Agriculture and Supply developed the Agro-Environmental Zoning for Sugarcane sector industry, setting out the areas suitable for sugarcane cultivation, with the goal of planning landuse changes and guiding the licensing of sugar and alcohol industries.

These public policies designed for the sugar and energy sector have great potential to minimize environmental impacts. Green Ethanol Project, through the Agro-Environmental Zoning and Environmental Protocol, addresses environmental issues present in the core activities of the sugar and energy sector.

The Environmental Protocol is promoting a strong influence on the industry, and tha large membership and already reached positive results demonstrate the industry's interest in consolidating the agreement. The main contribution of the protocol is about the anticipation of the fires elimination - seven years for mechanized areas and fourteen years for areas with unsuitable slopes for the current machinery. The other issues included in the protocol are also of great relevance for environmental management on rural areas.

Agro-environmental zoning is a fundamental tool for environmental analysis and planning for agriculture activities. The zoning is able to support decisions about the required technical studies in each region according to their characteristics. Thus, issues such as vulnerability of aquifers and the low availability of surface water resources can be treated differently for each region.

The set of environmental impacts included in the two documents cover most of the major environmental impacts present in the production process of ethanol. However, there are issues relevant to sustainability that were not included, as the

implementation of legal reserves, according to the current Forest Code, the problems associated with large areas of monoculture and the use of transgenic species. The factors that led to this are diverse as the lack of consensus among diverse actors, difficulty in operationalizing the law and even the absence of pressure from society in advocating diffuse rights, mainly environmental.

This framework weakens somewhat the effectiveness of the two cited instruments. It is indispensable, therefore, to put in efforts of all stakeholders to advance the integrated assessment of these issues that ended up getting on the margins of these instruments.

It is also important to stress the protocol articulating role, as an agreement between government and industry, that was only possible due to the organization and representation of sectoral bodies, notably the ORPLANA and UNICA. This articulation and dialogue are the foundations for good management. The greater the diversity and representation of actors, enhances the construction of more durable strategies and aligned to the sustainability principles.

The new format for the sugar and energy sector management, as well as changes in public management in recent years has enabled the creation of a different form of management and public policy development. There is not only efforts on the command and control model commonly used by environmental agencies, that demand high spending review and create a relationship of tension between government and producer / agribusiness. This new format favours greater efficiency in meeting the legal requirements, and also by increasing dialogue between stakeholders, enhances a more pro-active behaviour in the sugar and energy sector.

Keywords: sustainability; assessment; instruments; policy

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