Chapter 4
Cleaner Production in the Brazilian Sucroenergy Sector

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ABSTRACT

This chapter presents a discussion about the real role of companies as social and environmental agents, which is increasingly gaining momentum and timeliness. With industrial expansion and increasing pollution, it has become imperative that companies assume not only the role of producers of goods and services, but also those responsible for the implementation of environmental management systems and their instruments. The Cleaner Production is a process in the production process that helps in the environmental preservation, since it establishes the following order of priority for waste management: elimination - reduction - reuse - treatment - final disposal. In the sugar-energy sector, considered as one of the greatest precursors of environmental degradation by deforestation and burning, Cleaner Production is fundamental for the rational use of natural resources and for minimizing the environmental impacts caused by productive operations.

INTRODUCTION

The environment factor is increasingly being inserted into business strategies. The negative impacts caused by deforestation and pollution, mainly from agricultural and industrial production, are visible. The inclusion of environmental protection among the organization's strategic objectives extends substantially the whole concept of management.

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The environmental issue is increasingly becoming a mandatory issue on the agendas of the organizations' executives. The internationalization of business and environmental quality standards, along with changes in consumer behavior, require companies to take a responsible position on the impacts of their production processes (DONAIRE, 1999).

Due to the pressure of the clients, of the globalized and highly competitive market, the demands for environmental management processes in organizations grow, which is reaching even the micro and small companies that supply national and multinational corporations (SEIFFERT, 2011).

Cleaner Production is a preventive environmental strategy applied in production processes, products and services to minimize the impact on the environment. This production model has been developed by UNEP and the United Nations Industrial Development Organization (UNIDO) since the 1980s (BARBIERI, 2007).

In the sugar-energy sector Cleaner Production is considered as an environmental protection, with greater attention to strategies and practices focused on the rational use of natural resources and minimizing the environmental impacts caused by their productive operations.

After the bibliographic research on environmental management, cleaner production and the sugar-energy sector in Brazil, the following questions were raised:

- What are waste generated by the sugar-energy sector and its environmental impacts?
- What are the cleaner production practices adopted by the Brazilian sugar and ethanol industry?

This chapter presents an analysis of the environmental impacts caused by waste from the productive activities of the Brazilian sugar and ethanol industry and Cleaner Production in the sector. The survey of the plants installed in Brazil was carried out by means of a survey on the websites of the entities and bodies of the sector, such as UNICA - Union of the Sugarcane Industry, UDOP - Union of Producers of Bioenergy, CONAB - Companhia Nacional de Abastecimento, CETESB - Environmental Company of the State of São Paulo.

The collection of data and information was done through searches on the websites of the groups of companies in the sector and in their sustainability reports published on the internet.

BACKGROUND

Environmental Management

The new consumption demands generated by population growth pressure the increase in the production of goods and services, promoting changes and environmental impacts resulting from residues arising from economic activities and human consumption. On the other hand, climate change, a decrease in the ozone layer, loss of biodiversity, contamination of soil and air, show that the planet is no longer able to absorb human-generated pollution. This situation is compromising the future of the environment, humanity and all living beings, and may affect future generations.

The expansion of the collective consciousness, with respect to the environment and the complexity of the current social and environmental demands that the community passes on to the organizations, induces a new positioning on the part of the entrepreneurs and executives in face of such questions (TACHIZAWA, 2011)