

UNCTAD Public Symposium 2010  
10 - 11 May, 2010

"Responding to Global Crises: New Development Paths"

## Inputs received

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### Responding to the Global Crises: Analysis of the Carbon Market in Brazil

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#### Abstract

This paper goals to analyze the Carbon Market in Brazil and its implications in economy and environment. First, it was discussed the origin of this market in the Kyoto Protocol and the formation of its policies and, later, an analysis was made of its application in developing countries through the Clean Development Mechanism and the financial aspect of the BM&FBOVESPA. It is also studied the relation between the types of Brazilian's CDM projects and the global trend for investments in the sustainable energy sector. It was highlighted the implementation of CDM concepts through a case study. Thus, there was the participation of various national ministries and the UN with the role of managing and regulating all these activities, besides the participation of NGOs and encouraging companies and by joining forces to meet the goals set in the Kyoto Protocol. Furthermore, the creation of the Carbon Market represents the beginning of joint actions and practices for sustainable development.

**Key-words:** Carbon Market; Clean Development Mechanism, Sustainable Development.

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## **INTRODUCTION**

Humanity has seen environmental disasters becoming more frequent, which are consequences of reckless human activities. Before the twentieth century there was no initiative for environmental conservation, which caused the climate changes as currently known. The first environmental mobilizations were just to mitigate the perceived effects, however it is known that this type of action does not reverse or preserve environmental integrity. Thereafter the understanding about this issue has changed and the matter became to be discussed internationally and a consensus was reached that preventive measures should be adopted to mitigate the effects of global warming and other environmental problems. Thereunto, conventions and conferences were performed to unite the countries on that goal, where this exchange of ideas provided a new way to treat the development, making it sustainable.

Thereafter it was created the Kyoto Protocol, which governs the role of socio-environmental members, marking the beginning of the effective and joint actions by distributing the responsibilities and goals according to the characteristic of each country. According to the Protocol, Annex I countries would have the goals to cut emissions of greenhouse gases and could count on the support for development projects in developing countries that do not have reduction targets.

The Clean Development Mechanism is the main tool for mitigation actions and it was created to develop emission reduction projects which generate carbon credits to be traded. It is featured in this study, the legal and operational framework for all phases of a project within this framework, since the first changes in the culture of the company until the negotiation of credits earned in the international market.

Since this trend it is a new form of international trade, we approach the concept on carbon credits and projects of the Clean Development Mechanism and it trade at the Brazilian Securities, Commodities and Futures Exchange. In addition, a case study for the best view of everything that was discussed, noting exactly where the pieces fit together and influence the day-to-day business of the enterprises that have already taken an initiative for the environmental issue.

For the development of this paper we used the deductive method and the inductive method. Collection techniques of documentary and bibliographic data enabled the preparation of this paper which also included data collection via the Internet.

### **1. GENERAL ABOUT THE INSTITUTION OF CARBON CREDITS**

The creation of the carbon market, the landmark for sustainable development joint actions, which seemed to be intangible, became closer to reality for all countries that were interested in sustainable development and were able to create a mitigation project, breaking down barriers to international cooperation and raising awareness for the preservation of the environment. The initiative of the financial market was what really galvanized the community to take action on issues of climate, besides it is multidisciplinary, because it is the result of joint efforts of various sectors of the economy.

The biggest contradiction to the marketing mechanism of carbon credits is based on the grounds that this system favors more the market than the environment, because it becomes economically viable to reduce emissions of GHGS and the companies implement the projects for receiving a financial return and are not becoming aware about the environmental impact of its activity. Others also defend the idea that this mechanism will be selling the right to pollute, arguing that the buyer may emit GHG credits and still meet the reduction target set under the Kyoto Protocol. However, it is worth noting that every country has a maximum quota of CERS to buy to meet the targets.

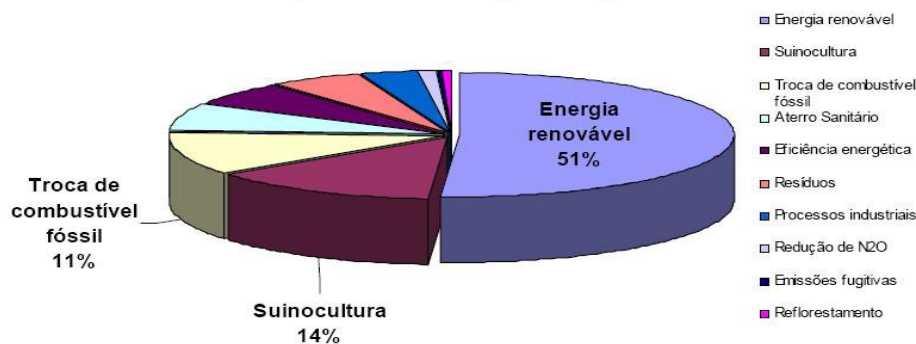
### **2. CARBON CREDITS TRADE IN THE BRAZILIAN MARKET**

For non-annex I countries the option to participate in the carbon market and to conduct mitigation projects is the CDM. In Brazil, the implementation of CDM projects was well structured

and managed by several ministries and the ecological potential of the country. That made the country being the third in number of projects in the world.

Although the ecological potential of the country allows the developing of all types of CDM projects, what can be noticed is a high concentration of emission reduction projects and avoided emissions based on generation of energy for industrial processes. There is a lack of projects promoting the ransom of carbon, which would bring greater benefit to the environment. Bellow, there is a graphic about the kinds of Brazilian approved projects.

Figure 01 – Distribution of the Brazilians Projects by a Sector Scope



Source: MCT, 2009

According to that picture the renewable energy is the most common kind of project. The second one is the swine and the third, is the exchange of fossil fuel. Furthermore, that data follows the global trend in investing in wind energy, solar energy, biofuels and biomass. According to UNEP 2009, these are the leader sectors in sustainable energy, accounting 86% of the new investments all over the globe.

Despite the crisis of 2008, which had decreased the demand for energy, Brazil has been investing in such new projects to improve its energy capacity. The national communication about this subject is still under development, since the information is not yet widespread to the population. Due to that, the initiatives are focused on large companies in general. For the Brazilians the BM&FBOVESPA, Securities, Commodities and Futures Exchange, represents the connection between the negotiating parties in the global carbon market. Acting in the negotiation and prospecting the credits.

CER's Trade in the BM&FBOVESPA is held in electronic environment by means of auctions in a fast, secure and transparent way. Nowadays, the negotiations are at sight, however there are projects for negotiations for projects which are still at the process of generation of the certification phases, as means of financing them. (BM&FBOVESPA, 2009).

The system for trading carbon credits from the BM&F provides direct access to the following participants: brokers associated with BM&F, negotiators from the market for CERs and European Permissions market carbon funds, multilateral financing and government entities (BM&F, 2009). Thus the BM&F becomes a very effective tool in marketing and trading of CER and future.

### 3. CASE STUDY

All material used for this study was taken from the website of the Ministry of Science and Technology from Brazil (MCT), which provides all forms of project design document and validation report issued by the Designated Operational Entity.

The project implemented by the company AMBEV (American Beverage Company) comes from the burning of solid biomass in the process of steam generation for beer manufacture in place of fuel oil at its subsidiary in Agudos - SP and Teresina - PI. The project goal is to reduce CO2 emissions by the introduction of renewable fuel in the energy matrix, replacing oil fuel. (MCT, 2009)

The project activities contributed to regional integration and linkages with other sectors. In the case of Teresina the use of labor from poor families in the collection of babaçu coconut peel was the socioeconomic activity more inclusive. In Agudos there was the creation a complex supply chain in the collection and processing of biomass (MCT, 2009).

Thus, the practice of using waste that previously had no value at all creates an economic activity in neighboring areas fostering the logistics industry and collecting of such material, and awaking the habit of waste recovery.

The main contributions to the sustainable development of this project were: local environmental sustainability, due to removal of excess biomass discarded incorrectly before, development of working conditions and net generation of employment, income distribution as a result of new jobs, training and technological development, regional integration and linkages with other sectors and socio-environmental awareness.

Below, there is the currently status of this project.

Table 01: General data – AMBEV’s CDM Project

	Subsidiary Agudos	Subsidiary Teresina
Beginning of the activities	01/22/2005	11/28/2004
Project’s Expected Operational Life Cycle	30 years	
Opening for the Crediting Period	11/01/2007	
Endurance for the Crediting Period	10 years	
Operacional Licence	Issued by CETESB in 11/01/2005	Issued by SEMAR in 2005
Project’s Approval	08/23/2007	
Rejected Register	10/24/2008	

Source: MCT, 2009

Finally, in this case study, it is remarkable the smart choice of AMBEV in seeking partners for the new process to obtain steam and involvement of local society in the social and economic development, converging toward the goals of the Kyoto Protocol for CDM projects. One suggestion would be to promote research at universities in the region to obtain biomass and other sustainable process improvements.

## CONCLUSION

Environmental management is a trend in businesses, which explains the success in the growth of CDM projects, and even with the current financial crisis the carbon market is booming. Another factor that favors the development of projects is the emerging economy coupled with the ecologic potential, this becomes evident when analyzing the number of projects in China, India and Brazil. Furthermore, this market allows the entrepreneurs to seek for alternative means to achieve competitiveness, efficiency and another source of income without harming the environment and contributing to the commuty.

The case study showed a clear influence of the UN in the carbon market, for without their approval, the project does not proceed. Another point to emphasize is the regional involvement in the development of a project, highlighting their sustainable characteristics.

The market for carbon credits is the translation into practical actions of all that was once only discussed in global scope, besides being the unification of efforts for sustainability.

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