

Agro-Energy Expansion and its Impact on Brazilian Natural Ecosystems

Workshop – Outcomes and Recommendations (Summary)

Context

Brazil is one of the countries with the highest potential for production of fuels made from biomass. With high world oil prices and international pressure for the reduction of the greenhouse gas emissions, there is accelerating momentum for greatly expanding sugarcane and oil plantations for more ethanol and biodiesel production for both the internal and export markets.

The Brazilian territory totals 850 million hectares, from which agriculture uses roughly 7%, half with soybean and corn. The area presently occupied by sugarcane plantations is equivalent to 0.6% of the territory. Annual or temporary crops cover 48 million hectares, and another 15 million hectares with permanent crops. A cattle population of 200 million head occupies an area of 220 million hectares (0.9 animals per hectare). Due to technological advances in the cattle production in the last two decades, it is estimated that 30 million hectares of pastures could migrate to crops with no harm for cattle meat production. Additionally, there is about 100 million hectares of arable lands to be explored.

For socioeconomic development to effectively integrate environmental preservation is a critical, albeit complex task. More and more, the development and implementation of strategies well suited to sustainable development will be based on the management of knowledge, with use of ongoing advances in technology of information and communication, including an intensive reliance on high-tech monitoring by satellite, most notably in the Amazon region, Cerrado and Pantanal highlands.

Brazil has the largest biological diversity in the World (Amazon Forest, Atlantic Forest, Caatinga and the Cerrado), with an estimated flora of 50,000 to 60,000 angiosperm species. Priorities of biodiversity conservation were defined mainly between 1995 and 2000 and

established within the National System of Units of Conservation. From the original area covered by the different ecosystems in Brazil, variable proportions remain, not always known due to the lack of precision of existing estimates.

Ecologically sensitive regions with high biodiversity may suffer negative impacts both due to production rate and to methods employed in the expansion of sugarcane for ethanol and oil plants for biodiesel. For instance, the gallery forests of the Cerrado, which is the habitat of half of the Brazilian endemic species and of a quarter of the threatened species, is among the most threatened by harmful impacts of soy expansion for biodiesel, as well as expansion of sugarcane production for ethanol.

The expansion of the agricultural production into these areas of ecologically complex ecosystems may result in irreversible damage and should be object of concern.

A recent example of the negative impact of the plantation expansion in Brazil, which can pose a new threat to pristine areas of the ecosystems, was the increase of deforestation of the Amazonian rainforest for soybean plantations in 2001-2002. The deforestation rate was 23,260 km², well above the 15,000 km² estimated a year before. In the period 2002-2003, this figure reached 23,750 km² and in the following period of 2003-2004, an area of 26,130 km² was deforested,

considered the greatest in history. In just a five year period, more than 7.3 million hectares of Amazonian rainforest were cleared for soy expansion.

Depending on the origin of the biofuel – soybean, sugarcane, castor oil plant and oil palm – the dynamic of the process of biodiversity loss is different. Biofuel advocates in Brazil believe that biofuel plantations need not be a direct initiator of deforestation in rainforest areas, as new plantations can be, and are currently being placed where previously there were pastures.

The *Fundação Brasileira para o Desenvolvimento Sustentável* (FBDS) and Conservation International (CI) organized, with support of *Banco Nacional de Desenvolvimento Econômico e Social* (BNDES), UNICA and AGROPALMA, the Workshop “Agro-Energy Expansion and Impact on the Brazilian Natural Ecosystems” to discuss the main aspects of sustainability of bioenergy production in Brazil and its expansion, with emphasis on delineating actions to avoid adverse impacts on the biodiversity and water resources. The Workshop was held on March 26-27 of March, 2007 in Rio de Janeiro, Brazil.

Outcomes and Recommendations from the Workshop (Summary)

Social Inclusion and Income Generation. The production of biofuels should be looked as an opportunity – not to be lost by the Country – for social inclusion and increased income to rural workers. In this sense, the production model should be inclusive, democratic, and shared. The absence of a clear policy to support small farmers will put at risk the bioenergy revolution, which could be converted again in land and wealth concentration and would lead to a new episode of development with concentration and exclusion.

Food Security. The question of food supply should be carefully evaluated based on recent experiences such as the sharp increases in feedstock prices

used both for food and fuel production such as corn in the USA (due to ethanol production) and rapeseed in Europe (due to biodiesel production). The government should be alert to market movements, intervening, for instance, with stock regulation aiming at to keep prices stability.

Environmental and Economic Zoning. It is recommended as necessary and urgent to conduct a rigorous environment and economic zoning. This is necessary in order to avoid the possibility of crops, either of sugarcane or oil plants, being extended to areas of biodiversity preservation and of those essential to maintain the supply of environment services.

Protected Areas and Ecological Corridors. The effective and proved strategy to maintain the natural ecosystems and their biodiversity is by means of the implementation of efficient systems of protected areas. It is necessary to increase and consolidate the Brazilian system of Conservation Units to constrain threats to biodiversity. This indicates that efforts are necessary for construction of planned landscapes in the form of ecologic corridors to interconnect the areas of the National System of Conservation Units.

Priority Areas for Conservation and Agro Expansion. The priority areas for conservation are indicated by Presidential Decree Nr. 5.092 (dated May 21, 2004). By analyzing the extent of those priority areas one can see that is possible to conciliate the requirements of conservation with the need for economic development. There is no reason – ecological, social or economic – to support new conversions of natural ecosystems to agriculture and livestock farming.

Main Players in Biodiversity Protection. It is important that farmers, companies of agribusiness, government and local societies be involved in the planning of rational occupation of natural landscapes in favor of biodiversity maintenance. A plan for integrated and participative protection can favor conditions for keeping biodiversity in the

long term, mainly the one located in prioritized areas.

Certification. It is recommended that certification be adopted, as soon as possible, covering the entire chain of ethanol production. This should include soil and water resources conservation, use of defensives in quantities and established conditions, recycle of vinasse, areas without burning sugarcane straws at harvest, etc. A roundtable including all partners should be organized, as a first step. It is also believed that, pressure from consumers could help make this occur.

Dismissal of Sugarcane Straw Burning. It is recommended to end as soon as possible the practice of burning the sugarcane straws at harvests. A number of drawbacks to this practice could be listed, including the intense air pollution with particulate dispersion and fume risk, and affect to other economic activities (transmission lines and roads among others).

Environment Cost Appropriation. It is recommended to take into consideration

the environmental costs applied to the landscape in the appropriation of the production cost of biofuels. Points to be considered are the zero carbon emission, biodiversity, soil and hydro resources conservation, related to best practices.

Amazon and Degraded Areas. Means to stop deforestation are urgent. It is also important to discuss what could be done with the already degraded areas. Changes in legislation are necessary to favor the recovery of degraded areas as they still are ruled by the same conditions applied to forested areas.

Legislation and Enforcement. The Brazilian legislation is considered suitable to regulate agri-fuels production and to protect the natural ecosystems. However, mechanisms of enforcement will require permanent efforts for better means of control (both in terms of equipment and personnel). Better transparency in information about the actions of government agencies is still needed to permit civil society to monitor it.