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BIOFUELS AND PUBLIC POLICIES

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"The global public policies are waving to the fact that we need to triple the production of modern bioenergy until 2030". This statement was made by Glaucia Souza Mendes, a researcher at the Instituto de Química da Universidade de São Paulo (USP), Coordinator of the special program of FAPESP, Research in Bioenergy (Bioen), and responsible for compiling the report called Proceeding Fast on Biofuels and Sustainability Assessment, presented at the opening of the second edition of the Brazilian Bioenergy Science and Technology Conference (BBest), held between 20 and October 24, 2014in Campos do Jordão (SP).

This perspective, instantly finds support at the current stage of technological and scientific development which allows the production of bioenergy can be done on a large scale in the world. But, for that to happen as a matter of fact, there is a need for the adoption of public policies that meet the entire chain of production of renewable energies, including since the question of land use and the efficiency of biomass conversion technologies in energy, environmental, economic and social challenges, and even artifice of "protection" of the market involved.

In Brazil the large-scale bioenergy production relies on two biofuels: ethanol from sugar cane, and biodiesel made from vegetable oils. The first came after the oil crisis, in 1973, that in five months did the oil price increase 300%. From that period, recurrently in Brazil, rising prices of a barrel of oil in the international market, passed

the flag public policies linked to the creation of programs that target the use of alternative energies.

This crisis led the Government to create the Proálcool (National Alcohol Program) to replace in large scale oil-derived fuels for ethanol. The Brazil, in the early 1980s, developed the world's largest program of alcohol use in motor vehicles of walk, by encouraging the production and use of vehicles powered exclusively with this fuel. The success of the program followed by the end of the 1990s. With the settlement of the offer, and the consequent drop in prices of a barrel of oil, the program presented strong retraction, due to affordable price of gasoline.

After 2003, with the introduction of flex-fuel vehicles consumers might opt for the alternative use of the two fuels, according to the advantage of its value at the time. The consequences of the alarm about global warming have influenced the fall of consumption of fossil fuels, and biofuels are a moment of strong consumption. The ethanol industry has invested heavily in the expansion of supply via introduction of new technologies, logistics and production process.

In 2005, the sugar cane gave new energy contribution to the country, this time with the generation of electricity surplus bagasse produced through the first new energy auction. Today electricity produced with bagasse supplies more than 2% of consumption in the country.

In the environmental aspect, in 2007 was signed for the State of São Paulo the agro-environmental protocol that anticipates the end of the sugar cane straw burning. Since that date, the State ceased to burn 5.53 million hectares and released to the atmosphere more than 20.6 million tones of pollutants, according to the State Government. FAPESP launches Bioenergy Research (Bioen), in 2008, that for the sugarcane meant support for second-generation ethanol production – from the cane straw. And in 2010, the United States classify sugar-cane ethanol as biofuel advanced, and the Brazil creates the National Laboratory of Bioethanol Science and Technology (CTBE, acronym in Portuguese), in Campinas (SP).

In the context of research aimed at producing ethanol six companies are betting on new technological alternatives to increase the productivity of sugarcane. The research involves the following fields: resistance to certain pests; eliminate the need of farmed areas and dispense with the use of heavy machinery in harvesting, preserving the soil; search of cultivars for areas with low productivity; second-generation ethanol production; new varieties of sugarcane adapted to mechanized harvesting and with

high germination in less favorable environments to planting; obtaining of transgenic varieties; development of enzymes capable of breaking down the lignin present in the cells of the pulp bagasse for ethanol production of second generation.

2011/2012 harvest there was a startling break in the supply of raw material, due to environmental causes (lack of rain). With the increase in the price of the raw material, the indebted industrial, not renewed the sugarcane fields and opted for sugar production, with most attractive prices, in addition to the price of gasoline have been frozen, in a misguided policy of Petrobras, to contain inflation, since rising prices of oil derivatives have a strong impact on inflation and depend on approval from its Board of Directorsthe federal Government, its majority shareholder, opted for maintaining frozen prices. This behavior has changed the relationship between the price of gasoline and ethanol, to the detriment of the latter.

This unfavorable policy investments in new industrial plants for ethanol production, contributed to the closure of hundreds of biofuels production plants, generating a huge crisis in the sector. Plus, anything contributed to the reduction of greenhouse gas emissions from the burning of gasoline.

Compared with the second-generation ethanol two companies began production on a commercial scale, in São Paulo and Alagoas, in 2014. The unit of Alagoas have initial capacity produce 82 million liters of ethanol per year and should operate fully from 2015. The St. Paul plant has the capacity to process 100 tons of biomass from sugarcane per day with these initiatives to increase ethanol production without having to increase the area of planting sugar cane.

In 2002, the Brazilian Government, still pressured by alarmism about global warming, forest fires and deforestation in the Amazon region, proposed the accelerated reduction of carbon dioxide emission indexes and other greenhouse gases. In the midst of this attitude was launched the national programme for the production and use of Biodiesel. Initially centered on the vegetable oil soybean production surplus (Glicine max), ten years after the Brazil occupied the position of second largest biodiesel producer in the world.

In order to incorporate this policy a large contingent of small producers, the Government encouraged the production of mamona oil (*Ricinus cumis*) and pinhão manso (*Jatropha cucas*), both without success, due to lack of technology allowing good productivity and quality requirements complied with industry specific.

In 2010, the federal Government launched the national program for production of palm oil. Embrapa has drafted the agroecological zoning Oil Palm (Dendê) in Amazonia and established the foundations for its cultivation. The ideal conditions for the cultivation of oil palm (*Elaeis guineenses*) were centered in the Amazonian biome. In this region were detected 70 million hectares suitable for their production. However, it would be only allowed planting in areas already cleared, outside the areas of official reserves and indigenous areas. This area was reduced to 32 million acres. Only in the State of Pará, the largest producer, and where the greatest experience of major producers, there is an availability of 3.12 million hectares that meet the characteristics of the program.

After the launch of the program, the companies have joined (Vale, Petrobras, ADM, GALP, among others). In addition to these, the major local producers expanded their plantations and began a strong interaction program with small producers. In the three years of program had been planted 130 thousand hectares of a culture that requires high volume of initial resources and immediate need for industrial processing.

The recent setbacks in the amount of barrel of oil prices in the international market which, in October 2014, was quoted at $ 110.00 and plummeted to current $ 56.00 strongly affected the stock prices of palm oil and biodiesel. Problems related with unwieldiness in environmental licensing, regularization of land and labor problems, has discouraged and slowed the momentum of investment in recent months.

The fiscal adjustment plans and realigning policies on fuel prices should give new breath to the biofuels agribusiness with a resumption of the activities of this important agro-industrial segment. These facts may corroborate the statements made by researcher Glaucia Souza Mendes, and their research at the Instituto de Química da Universidade de São Paulo (USP).

With the adjustments in the current Government's economic policy, it is hoped, the resumption of activities related to the follow-up of biofuels and, possibly, new public policies will be presented to stimulate the sector. The growth of the Brazilian economy and the protection of the environment in the reduction of greenhouse gases are thankful.