

SECTORIAL REPORT

Industrial Division

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The BNDES' support for the sugarcane-based energy industry in 2014: agricultural innovation moves ahead

Introduction

Amidst the crisis that has dragged on for more than five years, the sugarcane-based energy industry is looking for alternatives to recover competitiveness. Among the options, innovation stands out thanks to its wide array of possibilities with great potential. Examples are technologies to produce cellulosic ethanol (E2G), which can increase productivity gains by more than 40%, and the new varieties of transgenic sugarcane and energy-cane, which can triple current average agricultural productivity.

To accelerate technological development in the industry, the BNDES will prioritize innovation projects, especially after the successful experience in the Innovation Support Plan for the Sugar-Ethanol and Sugar-Chemical Industry (PAISS).

The success of PAISS brought about the launch of another version of this plan, but now focused on agricultural technologies, such as varieties of transgenic sugarcane and energy-cane, as well as new planting and harvesting machinery. Results of this plan and other sectorial programs are detailed in this report.

Disbursements

Chart 1 shows the BNDES' disbursements to the sugarcane-based energy industry since 2010. A drop between 2010 and 2012 is due not only to postponed investments which had been planned in the industry, but also to the maturity of existing projects in the Bank's portfolio, as addressed in the previous editions of this report.

The year of 2013 marked a recovery in disbursements, which bounced back to 2010 levels. In fact, growth of 67% in disbursements compared to performance in 2012 was a direct reflection of the success from sectorial programs, such as the BNDES' Support Program for the Ethanol Storage (BNDES PASS), the Support Program to renew and implement new sugarcane fields (BNDES Prorenova), as well as the BNDES' Investment Maintenance Program (BNDES PSI), and projects awarded within the scope of PAISS.

In 2014, the performance of aforementioned projects continued high. Disbursements remained the same from 2013, reaching R\$ 6.8 billion.

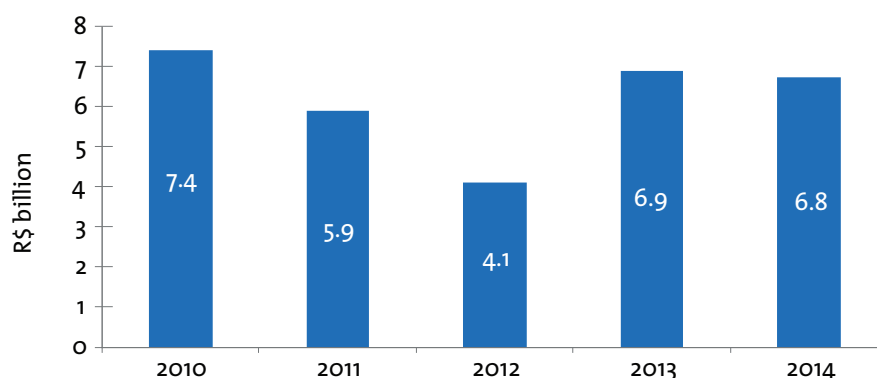
Despite this recovery, the perspective for 2015 is to reduce disbursements, which are expected to remain at approximately R\$ 5 billion. This forecast considers that there will be a decrease in companies seeking resources to renew and expand sugarcane fields, since, in the last two

years, planting (renewing and expanding) sugarcane was considered satisfactory.

The launch and preliminary results of the Agricultural PAISS

Launched in 2014 through a partnership with Finep – Innovation and Research, the Agricultural PAISS seeks to foster both development and pioneering production of agricultural technologies to adapt industrial systems, since they are inserted in sugarcane production sectors and/or other compatible energy segments, either complementary or in synch with the sugarcane agricultural and industrial system. The aim of the Agricultural PAISS is to accelerate the development of new technologies that will boost the agricultural efficiency of the sugarcane-based energy industry and, therefore, provide higher productivity gains in the medium to long term.

Chart 1. Disbursements to the sugarcane-based energy industry



Source: BNDES.

As a final result of the plan, 35 business plans from 29 different companies were approved, totaling R\$ 1.9 billion. This value is almost 30% higher than the original budget of R\$ 1.48 billion.

Among the five specific lines in the Agricultural PAISS, that with the highest number of selected plans was line 3, which comprises integrated systems for managing, planning and controlling production. The 12 plans selected in this line totaled R\$ 485 million, which is the highest approved volume of resources in all the Agricultural PAISS lines.

Five business plans were selected in line 2, related to machinery and equipment for planting and harvesting sugarcane. They totaled R\$ 482 million.

Line 5 is aimed at helping adapt industrial systems to the energy sectors that are compatible with the sugarcane agricultural and industrial ethanol system. Six business plans were selected within this line, totaling R\$ 444 million.

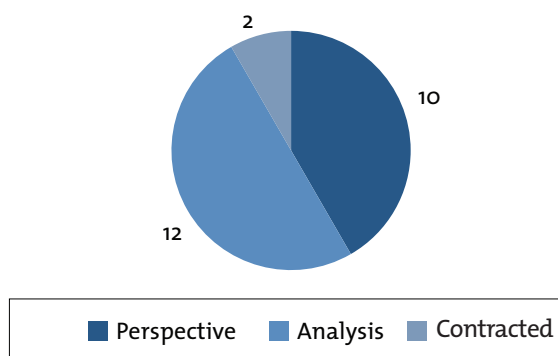
Line 1 deals with new varieties of sugarcane and other compatible energy crops. Six business plans were selected, totaling R\$ 298 million.

Line 4 focuses on more agile and efficient techniques to propagate seedlings and biotechnological devices for sugarcane plantations. There were six business plans selected, totaling R\$ 159 million.

Once the final selection step in the Agricultural PAISS was taken, projects deriving from the business plans were allocated to the BNDES or Finep. Charts 2 and 3, respectively, present the number of and amount for projects according to their operating status in the BNDES.

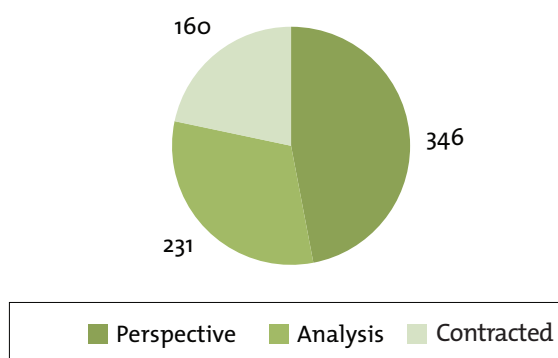
Throughout 2015, expectations are for a significant portion of such projects to be approved and awarded, generating consistent productivity and competitiveness gains for Brazil's sugarcane-based energy sector.

Chart 2. Number of projects in the Agricultural PAISS allocated to the BNDES according to their operating status



Source: BNDES.

Chart 3. Amounts for projects in the Agricultural PAISS allocated to the BNDES according to their operating status (in R\$ million)



Source: BNDES.

For example, productivity in Brazil's sugarcane plantation, in 2007 reached the milestone of 11,200 kg in Total Recoverable Sugar per hectare (ATR/ha), almost 130% above the same level in 1975, at the very beginning of the National Ethanol Program (Proálcool), which represented productivity gains of nearly 3% p.a. However, agricultural performance in the last few years has shown a different path, with consecutive years of falling productivity, having increased less than 1% per annum over the last decade.

The potential for an increase in agricultural productivity is huge. If projects

in the Agricultural PAISS, together, enable a reduction of 10% in agricultural costs, almost R\$ 5 billion per harvest would be saved, considering harvests of approximately 650 million tons.

Similar to the agricultural potential, the potential for new industrial technologies is also impressive. Considering that cellulosic ethanol can boost industrial productivity by 45%, additional revenue generated by second-generation ethanol could reach R\$ 13.5 billion per harvest, should the current levels of first generation ethanol (approximately 27 billion liters) be maintained.

Created by the Biofuels Department

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