



**BRAZIL AND LOW CARBON
AGRICULTURE
AGENDA FOR THE CANDIDATES FOR
PRESIDENCY**

Proposals for the plan of government of the candidates for the Presidency of the Republic of Brazil.

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1. Introduction

Climate change caused by human activities is real, irreversible and has already begun to occur in various regions of the world, including Brazil. Its main victims are the poor population from the tropical regions that will suffer more and more with extreme events such as droughts, floods and heat waves. The Northeast of Brazil, for example, experienced last year, its worst drought in 50 years; this year, the city of São Paulo is facing shortage of drinking water, with strong effect on the outskirts of the city.

Agriculture is one of the main victims of the change. Agricultural production - humanity's food security - tends to fall with climate change. In many regions, there will be less water availability or rainfall anomalies, an increase of pests in crops, as the heat favors the proliferation of insects and fungi and a decrease in productivity in crops such as soybeans, corn, wheat and rice. Extreme projections made by the IPCC, the Intergovernmental Panel on Climate Change, show reductions of up to 25% in productivity in the period of 2030-2049¹.

Brazil has a main role in current and future provisions of foods and other agricultural products for Brazilians and, also, for a growing world population. In addition to better using its water and environmental assets, the country needs to quickly incorporate agricultural technologies that reduce carbon emissions and generate renewable products in order to meet the challenges of climate change as well as to transform this production model in economic advantages in its insertion into the international market. This proposal aims to demonstrate that it is necessary for the next Government to have clear and objective policies for the sustainable development of agriculture.

2. Strategic importance of low carbon agriculture for the country

Today, agriculture is the sector that most contributes to greenhouse gas emissions in Brazil - it was directly responsible for 35% of emissions in 2010. At the same time, the expected consequences of global warming on production are alarming and threaten the country's potential as a producer and exporter of agricultural products.

A study by Embrapa (Brazilian Agricultural Research Corporation) and Unicamp, published in 2014, concludes that "temperature rises may cause a reduction of around 25% of areas suitable for grain crops in Brazil and may reach BRL 7 billion in grain crop losses by 2020, possibly reach BRL 20 billion in 2030 and profoundly change the geography of agricultural production in Brazil"².

Despite the fact that recent contribution of agriculture has surpassed that of other sectors of economy, it still shows lower rises in emissions than the industry and energy sectors. It is also, amongst the great sectors of economy, the one that has greatest potential to significantly reduce GHG emissions in a short period of time, projecting the country as a clean and sustainable agricultural power. The recovery of degraded pastures and five other technologies recommended by the research, that have already been adopted in Brazil, alone have the potential to mitigate emissions in agriculture by a third by 2020.

To increase the dissemination of these technologies, that additionally increase the productivity and income of producers, is, therefore, an unprecedented chance for the country. Brazil can, not only generate value in new markets of environmental services, but can also deal with the policies of importing countries against products linked to high carbon emissions, adding this differential to the value of its exports.

3. The National Policy on Climate Change

In 2009, Brazil was encouraged by the decrease of deforestation rates in the Amazon and pressured both internally and externally to make commitments to fight against global warming and therefore, took a bold step: it has voluntarily committed to reduce 36.1 % to 38.9% of its greenhouse gas emissions by 2020 compared to what it would emit if nothing were to be done.

The commitment was formally announced at the Copenhagen Climate Change Conference, in December of that year. For the first time, an emerging country had voluntarily adopted numerical goals for reducing emissions for its entire economy. But Brazil went further: it ratified these goals in Congress, in the form of Law n° 12,187/2009 that instituted the National Policy on Climate Change (PNMC).

In 2010, during the Cancun Climate Change Conference, the Government regulated the law, by means of the Decree n° 7,390/2010. This determined the establishment of mitigation plans (reduction in emissions) and adaptation of the industry, energy, land use, steel and agriculture sectors.

4. The ABC Plan

The Sectoral Plan of Mitigation and Adaptation to Climate Change in order to consolidate an Economy of Low Carbon Emissions in Agriculture (ABC Plan) was launched in December 2010. Due to its size and complexity, the ABC is the most ambitious plan to mitigate climate changes in agriculture in the world. It provides for the reduction of 134 million to 163 million tons of equivalent carbon dioxide (CO₂) by 2020, through the dissemination of six technologies (pasture recovery, biological nitrogen fixation, waste treatment, integrated crop-livestock and crop-livestock-forestry systems, no-till farming and afforestation). The recovery of pastures alone - the main goal of the plan - has the potential to reduce from 83 million to 104 million tons of equivalent CO₂, by recovering 15 million hectares of degraded pastures (of a national total of over 50 million hectares).

In order to execute the actions foreseen in the plan, the ABC Program was established. It consists of a set of lines of credit for rural producers to convert their productive systems into low carbon processes. The Program was launched in the 2010/2011 crop year and by April 2014, had provided financings in the accumulated value of BRL 7.4 billion, with lower interest rates. For the 2013/2014 crop year, the federal government provided funds of BRL 4.5 billion for the Program, representing 18% of total investment funds offered to the agricultural sector.

5. Proposals for the advancement of low carbon agriculture in Brazil

Most mitigation actions presented by the ABC Plan have already been adopted in Brazilian agriculture, although some are still very incipient and with very low adherence in the regions of agricultural frontier in the Midwest and in the North-Northeast. The great challenge for the federal government, in the 2015-2018 mandate, will be to accelerate the dissemination and adoption of these actions and technologies, in order to reach a scale that results in the targeted reductions of emissions.

For that to happen, it is necessary to concentrate efforts in the following areas:

a. Information: dissemination and training

The ABC Program represents a shift in the agricultural financing paradigm: instead of individual production items, the whole production system is financed. Therefore, the Program cannot be restricted to the funds, as its implementation demands a cultural change that can only be achieved through training and the dissemination of the technologies among producers. It is necessary to make them aware that, when adopting the ABC technologies, they will not only be preserving natural resources, but will also increase their productivity and, potentially, their income. Moreover, some technologies, such as the crop-livestock integration system, are still unfamiliar in the rural world and must be mastered by producers.

However, staff and budget constraints, mainly by the Ministry of Agriculture, have limited actions for the dissemination of the Program and training of producers and project developers: from 2011 to 2013, less than 20,000 rural producers and technicians were trained though the ABC Plan foresees the training of 19,940 technicians and 935,000 producers. Such limitation of resources makes no sense given the magnitude of resources that have been committed by the National Treasury with the Program's equalization of interest rates.³

The improvement of the plan will only be possible if there is more effort in disseminating the Program and the benefits of the recommended technologies among rural producers, including family farmers. It is essential to heavily invest in the training of rural credit operators, technicians and project developers. It is necessary for them to be able to recommend and provide support to producers regarding the ABC technologies, not only with the financing, but also throughout the process of implementation and consolidation of the project. In the case of degraded pastures, improvements in property management via technical support and adequate training is essential to assist producers in maintaining innovations and avoiding degradation and loss in crop production.

The newly established National Agency for Technical Assistance and Rural Extension (Anater) must take decisive role to accelerate this process. For such, it needs to be engaged with focus and explicit goals directed towards the dissemination of ABC agriculture, with remuneration consistent with the complexity and necessary period for technology transfer and monitoring of the implementation of the Plan methods.

It is also necessary to integrate the Agricultural Science educational institutions in the process of training and implementation of low carbon agriculture, including such

practices and technologies in the curriculum. Modern techniques of education and continuous training, (both in classroom and e-learning), as well as Postgraduate and specialization courses, should be considered and implemented to improve the training process.

b. Financing and interest rate equalization

The financings of the ABC Program have more requirements than traditional credit due to the logic of its production systems, as well as to its goals in reducing emissions. For the ABC Program to be competitive, its interest rate must be more attractive than other rural lines of credit to compensate for the additional requirements.

The requirements for financing also need to be carefully revised in order to reduce bureaucracy in the financing process. New proposals and solutions must be sought for regions in which land issues hinder the adoption of low carbon technologies, so that the Government properly prioritizes this agenda.

It is also necessary to ensure that the ABC Program only fosters technologies that reduce emissions of greenhouse gases. Activities that have not been scientifically proven to be capable of reducing emissions must not be part of the Program. In order to do so, the support of scientific research is essential to measure mitigation capacities of the technologies that are currently financed by the Program and of others with potential to contribute to the ABC Plan's goals.

In addition, the financing should include coverage of technical support costs, at least during the grace period. Similarly, there should be ways to reward producers who adopt such technologies regardless of the ABC Program, as a way to recognize and encourage their contribution to sustainable production and to reducing emissions. In this case, the regulation of payment for environmental services could be an alternative.

In the specific case of the recovery of degraded pastures, main sub-activity financed by the Program, it is necessary for this action to be complemented by programs that encourage the intensification of livestock in order to facilitate rational use of recovered pastures and, thereby, increase meat production per hectare/year⁴. Besides gains in beef cattle, there will also be land available for grain crops, bioenergy, afforestation and restitution of environmental liabilities.

The improvement of the cost-benefit ratio for society implies the need to prioritize the allocation of funds. It is necessary to trace actions and allocate funds to identify regions with high number of cattle and large areas of degraded pastures e, thus, increase efforts for the adoption of the ABC in these regions.

Regarding family farming, Pronaf, the main line of financing of this important segment of Brazilian agriculture, still does not have a specific line of credit for low carbon agriculture. Therefore, it is necessary to establish the Pronaf-ABC or reorganize and join the existing lines of the program capable of fomenting ABC practices.

Lastly, special attention must be given to the North region of Mato Grosso and to the Southeast and Southwest of Pará, where agricultural production will be greatly

encouraged and expanded with the establishment of the new export corridors via ports for ocean-going navigation located in Santarém and at the mouth of the Amazon River. In this case, financing for the recovery of degraded areas, as well as for ABC practices, will be an essential tool to extend areas suitable for agriculture that will be demanded by the expected expansion of grain production in those regions and to avoid future deforestation. It will also be important to hasten land regulation programs in these regions, which has been of the main obstacles in the access to rural credit.

c. Institutional Articulation

The ABC Plan governance chain commences with the Inter-ministerial Committee on Climate Change (CIM) and its Executive Group (GEx), then goes to the National Executive Committee of the ABC Plan and finally reaches the State Management Groups. The analysis of proposals, programs and actions of each institution leads to the conclusion that is necessary to improve articulation and integrated actions among the federal agencies involved in the process, as well as with state executive agencies⁵. Thus, the decision chain and responsibilities must be better defined, coordinated and implemented, the State Management Committees must have effective performance and Municipal Committees of the Program must be established. It is necessary to provide the Program's executive agencies with teams and budgets consistent with the importance and size of the ABC Plan and Program.

The Ministry of Agrarian Development should be more involved in the implementation of the ABC Plan in order to contemplate actions to stimulate to the adoption of low carbon practices in family farming.

It is equally important to improve the coordination of the ABC Plan with other public policies related to key activities of the Program, such as, the National Policy of Planted Forests, or with potentially synergistic goals, as policies to combat deforestation (PPCDAm and PPCerrado) and the Forest Code.

There is still unexplored potential to involve the private sector in disseminating the Plan, given the wide reach of production chains and input and technology industries that benefit from the expansion of the Program. To do so, the articulation of the Government with the collaborating potentials of the private sector must be improved.

It is also necessary to work to overcome land restrictions and environmental constraints that hinder the implementation and operation of the ABC Program in the North region, especially for those seeking environmental regulation. Land tenure regulation and the implementation of the Rural Environmental Registry (Cadastro Ambiental Rural - CAR) should be an ally to low carbon agriculture, and not an obstacle to its adoption. Articulation with potential collaborators of the private sector involved in the production chains of livestock and grains and with active NGOs in the region and the institutional reinforcement of the Program's executive agencies will definitely contribute to the region's necessary land and environmental regulations.

d. Plan Monitoring and Control

Despite having an ambitious policy to reduce emissions in agriculture for four years, Brazil still has no ways of verifying if the reductions have in fact occurred – the ABC Plan does not have a monitoring mechanism yet. Its implementation is urgent, so as to not derail the efforts made by the Government so far and discredit the Program in the national and international community.

Accurate measurements of reducing emissions depends on the development and implementation of complex methodologies and advanced technologies, but in their absence, macro indicators that provide simplified measurements can be developed. Such technologies can also contribute to the control and allocation of resources of the Plan and Program for regions and areas with greater emission reduction potential. The monitoring will also contribute to: a) assess what the benefits of the ABC Plan are compared to the cost of its implementation; and b) measure, validate and register reduced emissions and thus provide the certification and remuneration of this environmental service.

The ABC Plan monitoring of GHG emissions is under the responsibility of the Multi-Institutional Virtual Laboratory of Climate Change. It is also the Laboratory's responsibility to disaggregate data from the Rural Credit Operation Control System and Proagro (SICOR) of Banco Central (Central Bank) by sub-activities financed by the ABC Program, to increase transparency in credit allocation and allow the cost/benefit analysis of each financed activity. The Laboratory must be urgently activated and SICOR must be adjusted to make compulsory the inclusion of the amounts financed by the ABC according to each sub-activity, as well as the geo-referencing of the financed property. It is also necessary to assure resources for state and federal governments to track the results of the ABC.

As a dissemination and transparency strategy of the Program, a web portal should be created to provide information of interest to the Government, rural producers and other segments of civil society, including those related to the implementation and the results of the ABC Plan and Program. A national competences registry (technicians, producers, financial institutions etc.) should be included for reference and consulting. In parallel, a program for climate intelligence in agriculture must be established to indicate priority areas for the implementation of Government actions by analyzing vulnerabilities and risks of climate change.

e. Knowledge

In this transitional process into a new reality, the improvement of knowledge is essential in the quest for more appropriate solutions for mitigation of GHG emissions and adaptation of agriculture to climate change. The ABC Plan provides for the development of research, development and innovation projects (RD&I) in the areas of mitigation and adaptation, including improvements in the Plan technologies, including new methods and practices that are able to reduce emissions, mapping of priority areas, development of emission coefficients and indicators and the removal of GHG from different production systems, genetic improvements to increase efficiency and resilience, efficient use of soil and water resources, vulnerability identification and adaptation, among others.

Therefore, it is essential to assure that agricultural research has enough financial, human and material resources to implement the research agenda of the Plan. New RD&I agendas able to identify risks and opportunities for agriculture must be encouraged in order to decrease economic costs and avoid negative impacts in food supply and other products of interest to internal and external markets.

In this sense, there is a clear need to develop and include low carbon emission technologies that are more appropriate to the Amazon biome in the ABC Plan and Program, considering the typical products and agroforestry systems in the region, as well as financing and credit practices compatible with local specificities regarding land issues and environmental barriers. Another essential research agenda is conducting feasibility studies and the economic return of the adoption of low carbon practices in agriculture, in order to support technicians and extension workers and reduce uncertainty on the financial return of these technologies.

It is also crucial to perform diagnostics and generate knowledge on the producers' perception of the Plan's technologies and of the Program's lines of financing. This information is necessary to improve actions in training and dissemination, as well as promoting revisions and adjustments in the policies.

Finally, considering that the ABC Program financings present equalization of interest rates by the National Treasury, which brings costs to society, it is imperative to develop research to assess the impact of each sub-activity financed by the ABC Program in the mitigation of GHG and, thus, evaluate the cost/benefit ratio of each one and choose priorities.

6. Post 2020 Agenda

The National Plan for Carbon Mitigation and the ABC Plan form the Brazilian commitment to the climate agenda until 2020. It is the next Government's duty to define the country's participation in creating a post-2020 global climate regime at international forums of UN Climate Conventions. The strategic position that the country has taken by adopting the goals presented in the National Plan for Carbon Mitigation - PNMC - must be preserved, complied with, and complemented, by defining goals and actions of emission reductions to be undertaken after 2020. The continuity of the ABC Plan is an important element to the Brazilian long-term policy of mitigation and adaptation to climate change, although other sectors of economy must also take responsibility in contributing, equally, to this process. In addition, new strategies and actions to reduce emissions in Brazilian agribusiness should be pursued, including the regulation of payment for environmental services. For such, it is necessary to promote scientific research to discover new technologies and processes that can improve agricultural and sustainable activities. It is also important to encourage broad discussion with the sector and with society as a whole, to design and implement policies that stimulate the adoption of technologies and best practices in agriculture, and to create mechanisms of encouraging environmental services and their payments.

NOTES

1 - IPCC, Climate Change 2014: Impacts, Adaptation and Vulnerability. Summary for public policymakers, p. 17/18 - Sumário para formuladores de políticas públicas, p.17/18

2- ASSAD, E. D., PINTO, H. S., ZULLO JUNIOR, J., MARIN, F. R., PELLEGRINO, G. Q., EVANGELISTA, S. R., OTAVIAN, A. F. Aquecimento Global e a Nova Geografia da produção Agrícola no Brasil Brasília: British Embassy, 2008, v. 1, P. 82.

3 – The ABC Observatory Study estimated that the cost of equalization of interest rates of the ABC Program, in the 2011/12 and 2012/13 crop years, corresponded to approximately 47% of the amount financed by the Program. The study is available at: < http://gvces.com.br/arquivos/263/financiandoatransicao_planoabc.pdf >.

4 - One of the initiatives in this direction is the "Programa Intensifica Pecuária" - Program for Intensifying Livestock, in a study by the Secretariat of Strategic Affairs of the Presidency of the Republic (SAE/PR), that provides an attractive line of credit for producers and is related to intensifying the activity by adopting best management practices and increasing property yields.

5 - Low Carbon Agriculture: Who carries out the decisions? Analysis of the Governance of the ABC Plan. Available at: < <http://observatorioabc.com.br/index.php/cms/biblio/see/iddocumento/489> >.

ABOUT US

The following institutions sign this document: XX, YY, ZZ,..., and the ABC Observatory that coordinated its elaboration.

The ABC Observatory is an initiative coordinated by the Centro de Agronegócio da Fundação Getúlio Vargas - Agribusiness Center at Getúlio Vargas Foundation (GVAgro), in partnership with the Centro de Estudos em Sustentabilidade - Center of Sustainability Studies (GVces), to research, generate knowledge and information and promote debates and discussions about the ABC Plan and Program (<http://www.observatorioabc.com.br>).