Bioeconomy Development in Brazil: Contributions and Challenges of National Policies

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Embrapa

Ministry of Agriculture, Livestock and Food Supply

BRAZILIAN GOVERNMENT
BRASIL

Bioeconomy in Brazil

A reality with great potential for expansion, but.....

Biofertilizer

natura
bem estar bem

BIO
FARMACOS.COM.BR

BR PETROBRAS

Embrapa testa

bioinseticida contra o mosquito da dengue

Outline of Comments

- ✓ **Policies for vegetal biomass production**
- ✓ **Investment in agricultural research**
- ✓ **Eco-intensification policies (Low-carbon Agriculture Plan)**
- ✓ **Biosafety regulation**
- ✓ **Biofuel policies: pros and cons**
- ✓ **Inova Agro: partnership for agro-industrial innova**
- ✓ **Concluding remarks**

Policies for Vegetal Biomass Production

- ✓ **Rural credit - medium and large producers (US$ 68 billion – cropping year 2013/14)**
- ✓ **PRONAF: National Family Farm Program**
- ✓ **Marketing and income support: PGPM, Food Procurement Program (PAA)**
- ✓ **Risk minimization policies: PROAGRO, Rural Insurance Premium Subvention Program**
- ✓ **Support to sustained environment quality: Agro-ecolo ABC Program; Forest Code**
- ✓ **Special programs:**
  - **Proinfra; Moderfrota; Produsa; PROPFLORA**

Policies for Vegetal Biomass Production Challenges

- ✓ Substantial investment in storage facilities, transport infrastructure and port logistics
- ✓ Adopt a definite solution to the rural credit indebtedness faced by farmers
- ✓ Expand the domestic output of potassium and phosphate for fertilizer production
- ✓ Find a solution to 3.8 million farms with monthly income below two minimum wages (73% of total number of farms, 2006)

Investment in Agricultural Research

17 State Research Networks
OEPAS

CONSEPA
Conselho Nacional dos Sistemas Estaduais de Pesquisa Agropecuária

70 Agricultural Universities

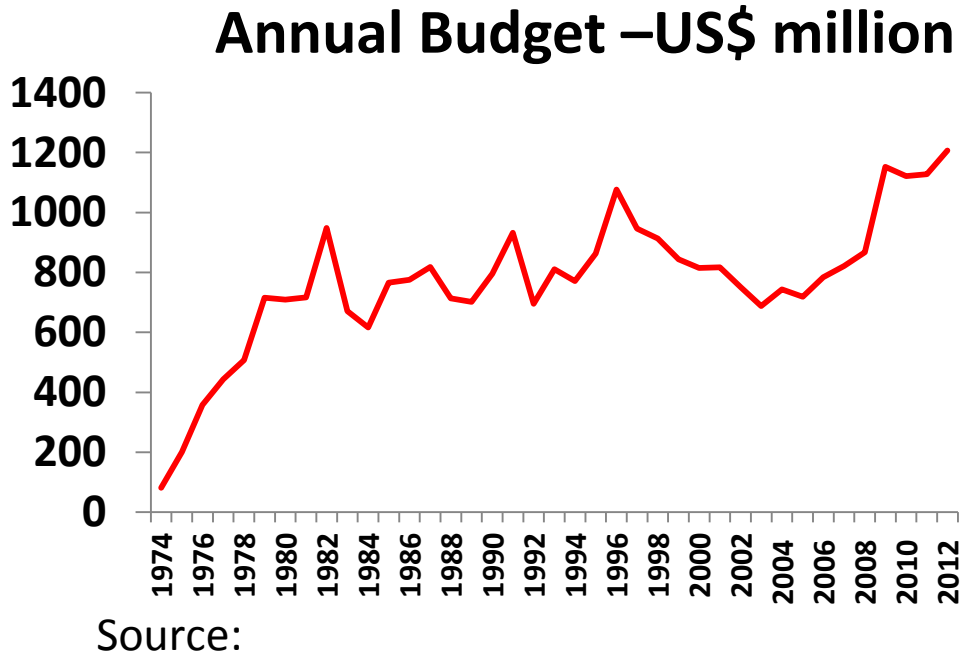
The Brazilian Agricultural Research Corporation
47 Embrapa Centers

Private Sector

Brazil has also an active and growing private sector, which supplies technologies and technical assistance mainly in farm inputs and food processing

Embrapa – Institutional Profile

- Established in 1**973**
- **9,801** employees
- **2,428** researchers
- **2,039** PhD researchers
- **47** Research Centers and Services
- International Cooperation: Americas,Europe, Asia and Africa



Investment in Agricultural Research Challenges

- ✓ Strengthen the State Research Network and Agricultural Universities through greater allocation of financial and human resources
- ✓ Improve the coordination and collaboration between Embrapa, OEPAS and Agricultural Universities
- ✓ Establish institutional mechanisms/units aimed at anticipating agricultural innovation challenges and opportunities
- ✓ Broaden institutional understanding of impacts of innovation process in multiple dimensions (economic, social, environmental, cultural)

Eco-intensification Policies
Low-carbon Agriculture Plan

National Policy on Climate Change

- ✓ reduce Brazil's greenhouse gas emissions between 36 and 39 percent below 2020 levels

Plan ABC - Objectives

- ✓ Organize and plan activities to promote the adoption of sustainable production technologies.

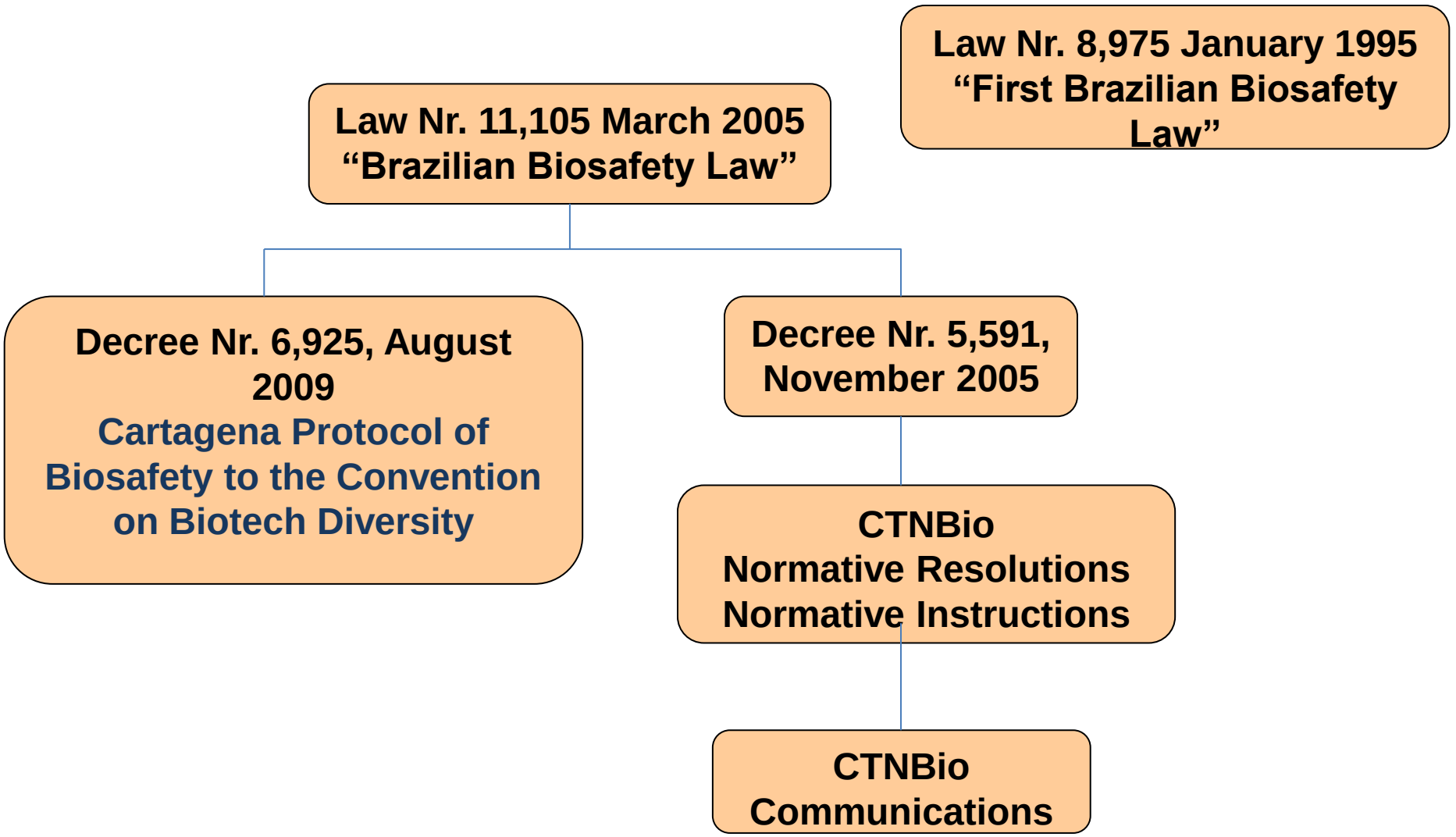
Plan goals 2010-2020

- ✓ Integrated crop-livestock-forest systems: ⬆ 4 million ha
- ✓ Pastures recovery: ⬆ 15 million ha
- ✓ Nitrogen biological fixation: ⬆ 5.5 million ha
- ✓ No-till farming: ⬆ 8 million ha
- ✓ Planting of commercial forests: ⬆ 3 million ha

Low-carbon Agriculture Program
Challenges

- ✓ Enhance technical capacity of extension workers and bank staff on the agricultural practices, technologies and production systems recommended by the program
- ✓ Design and implement a communication strategy to promote the Plan and its technologies among farmers
- ✓ Expand the financial and human resources available at MAPA to execute the Plan and coordinate/manage its activities
- ✓ Develop guidelines for the application of the promoted agricultural practices, technologies and production systems in different regions of the country

Brazilian Biosafety Legislation
Genetically Modified Organisms



Brazil´s President

Minister and Chief to the President

National Biosafety Council (CNBS)

National Biosafety Technical Commission (CTNBio)

CNBS composed by Ministers of State

Chief of Staff to the President
Science & Technology
Agrarian Development
Agriculture,
Justice
Health
Environment
Industry & Commerce
Foreign Affairs
Defense
Fisheries & Aquiculture

National Biosafety Technical Commission (CTNBio)

Twelve public acknowledged specialists in Science & Technology

3 Specialists in human health
3 Specialists in animal health
3 Specialists in plant sciences
3 Specialists in environment

One representative of each ministry

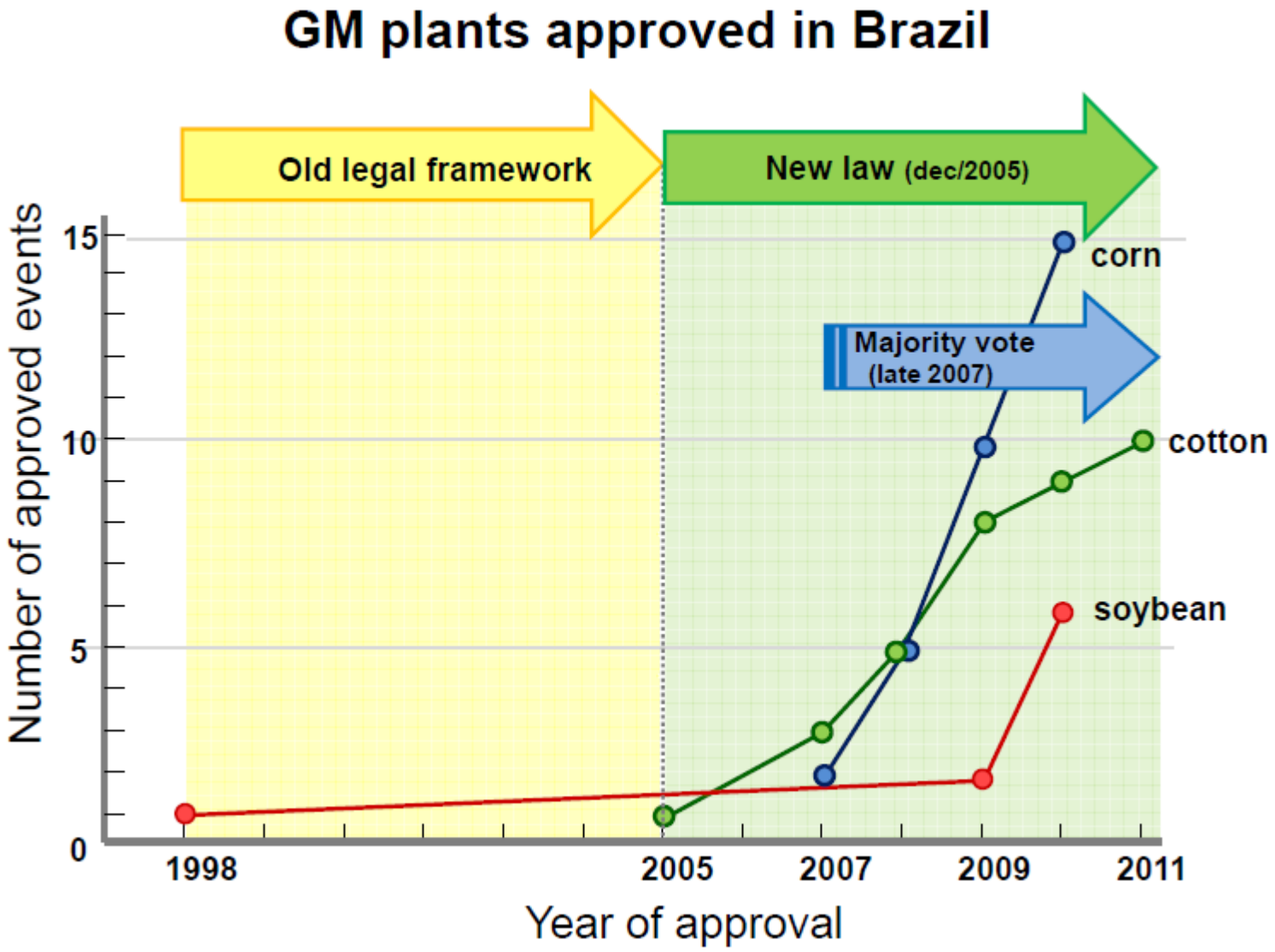
Science and Technology (MCT)
Agrarian Development (MDA)
Agriculture (MAPA)
Health (MS)
Environment (MMA)
Industry and Commerce (MDIC)
Foreign Affairs (MRE)
Defense (MD)
Fisheries and Aquiculture (MPA)

CTNBio is Composed of 54 members = 27 full + 27 substitutes

All members must have Ph.D. degree

One specialist in (indicated by Ministries)

Consumer´s right (M. justice)
Health (MS)
Environment (MMA)
Biotechnology (MAPA)
Family agriculture (MDA)
Worker´s health (M. Labour)



Cotton 9, Soybean 5, Edible bean 1, Vaccine 14, Maize 19

Labeling Law

Decree Nr. 4,680 (April 2003)
Threshold of 1% (species and modification)

Bio-safety Regulation
Challenges

- ✓ Review the prohibition against the use of the technology “Genetic use Restriction Technologies (GURTs). They are important biotechnological tool for the control of genic flux of transgenic plants which can be used as bio-fabrics

- ✓ Adopt incentive measures to stimulate participation in the CTNBio

- ✓ Speed up the analysis process carried out by CTNBio

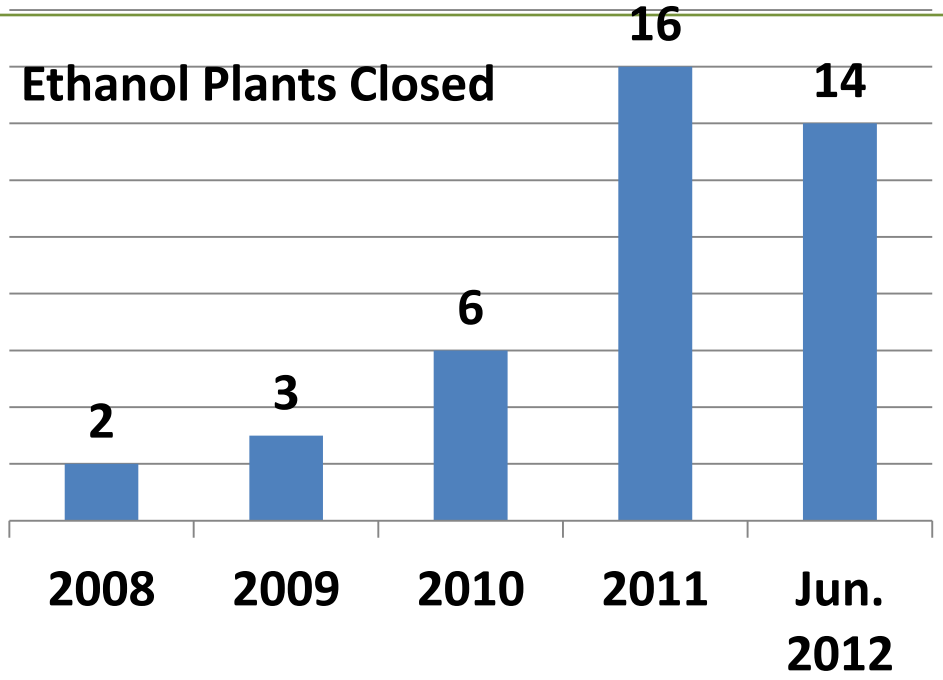
Biofuel Policies: Pros and Cons

Pros

- ✓ Proalcool Program
- ✓ Agricultural research investments
- ✓ Flex fuel technology

Cons

- ✓ Gasoline rationing
- ✓ Gasoline price control



Implications

- ✓ Gasoline price gap: 30% (5% ⇧ ⟶ 1% ⇧ inflation)
- ✓ Great losses to Petrobras: ~ US$19 billion since 2011
- ✓ Lay over of 45,000 workers
- ✓ Disincentive for sugarcane production

Partnership for agro-industrial innovation

Objective: promote and support innovation business plan

Thematic lines:

- input production : agrochemicals; fertilizers; drugs and vaccines for animals; plant and animal breeding
- products and processes of the food industry: functional foods, food additives, new packaging;
- agricultural machinery and equipment: traceability, new technologies in storage and logistics of agricultural products

Beneficiaries:

- Leading enterprises (net equity ≥ US$ 2 million)
- Partner enterprises
- Scientific and technological institutions

Partnership for agro-industrial innovation

Selection process:

- evaluation committee: representatives of BNDES and FINEP
- Six steps: includes workshop to establish partnerships

Business plan budget: minimum US$ 5 million

Total financial resources: available US$ 500 million; requested US$2.8 billion

Participating enterprises: 166 leading enterprises; 114 partner enterprises; 89 scientific and technological institutions

Embrapa: 68 proposals of technologies; 27 Embrapa Units

Concluding Remarks

- ✓ Bioeconomy in Brazil
  - A a reality under development
  - A process taking place without planning and strategic orientation to properly benefit from the country's resource endowments and capacities

- ✓ Establish a national strategy for bioeconomy development

- ✓ Further improve the policy framework

- ✓ Enhance the establishment of partnership among national and international research institutions, industries and entrepreneurs

Thank You

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