

Brazil-China Entrepreneurship Meeting

Opportunities for Investments on Innovation in Brazil

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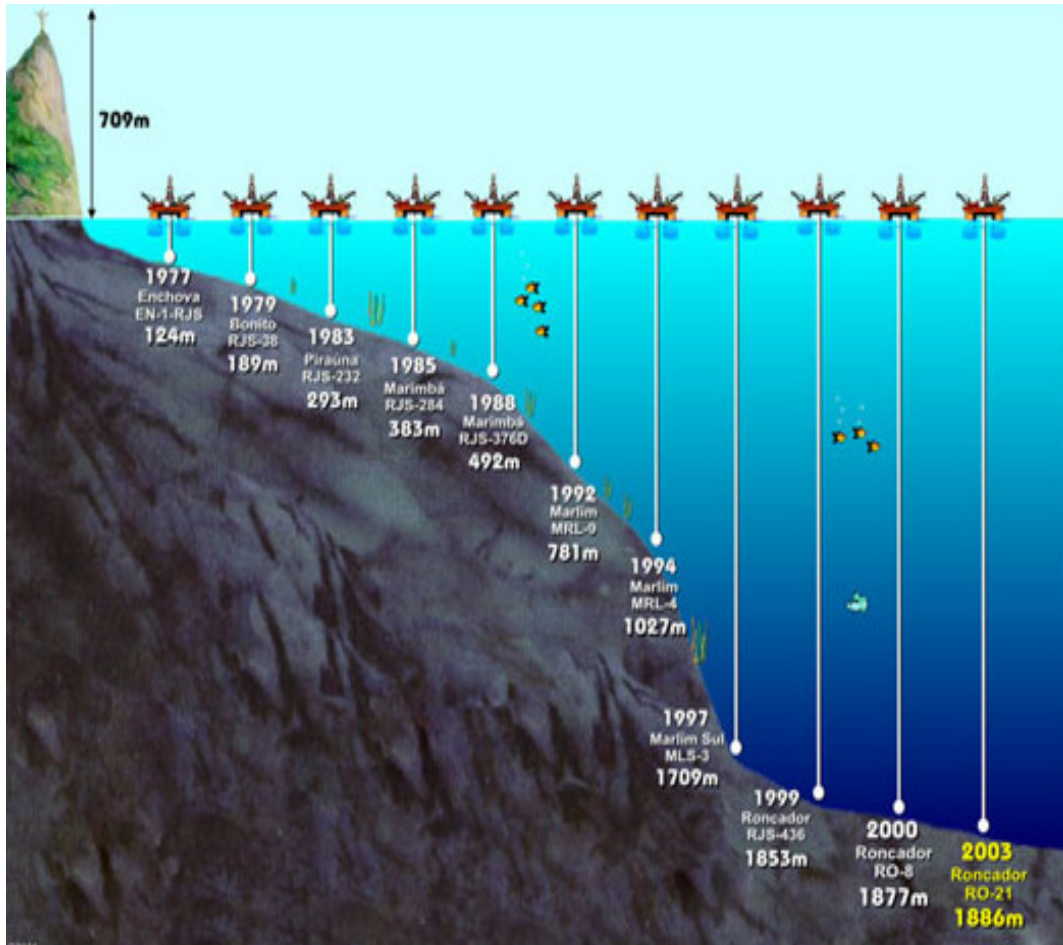


Brief historical notes regarding S,T&I in Brazil

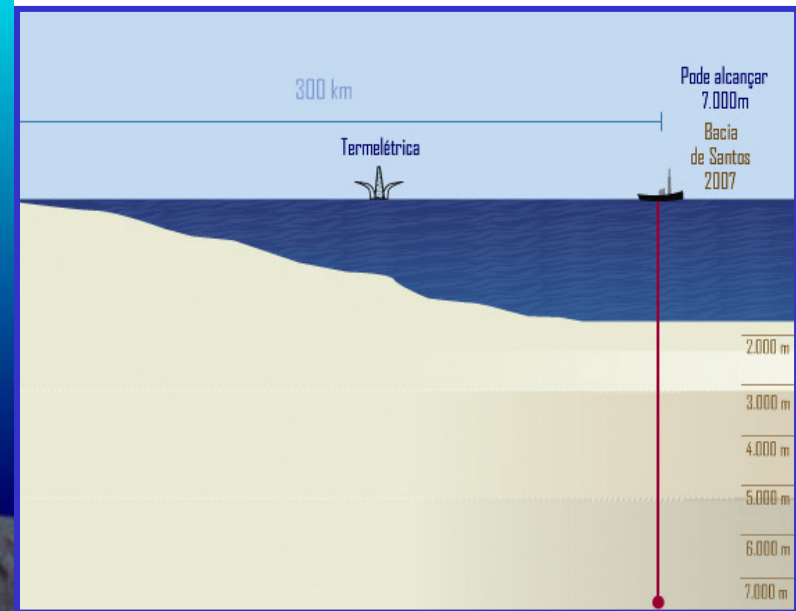
- Until World War II Brazil had a very small number of scientists and little institutional base for research
- Industry was very incipient, mostly in traditional sectors, and controlled by transnational companies.
- National Research Council (CNPq) and CAPES created in 1951
- Graduate programs and full-time faculty positions **established only in the 1960s**

Despite the short history, there are important examples of economic results of S,T&I

Cases of success in S,T&I



2007- Tupi – 7000 m



World leader in deep sea drilling for oil and gas production

Cases of success in S,T&I



Embraer has become one of the largest aircraft manufacturers in the world by focusing on specific market segments with high growth potential in commercial, defense, and executive aviation



Cases of success in S,T&I

Bioethanol from sugar cane for vehicle fuel

- First experiments date back to 1925
- Proálcool (1975): bioethanol blended in gasoline (25%)
- Flex-fuel engines (petrol, bioethanol or mix) introduced in 2003
- 90% of the new cars manufactured today
- Total bioethanol today equals the amount of gasoline

1925



1975



2003



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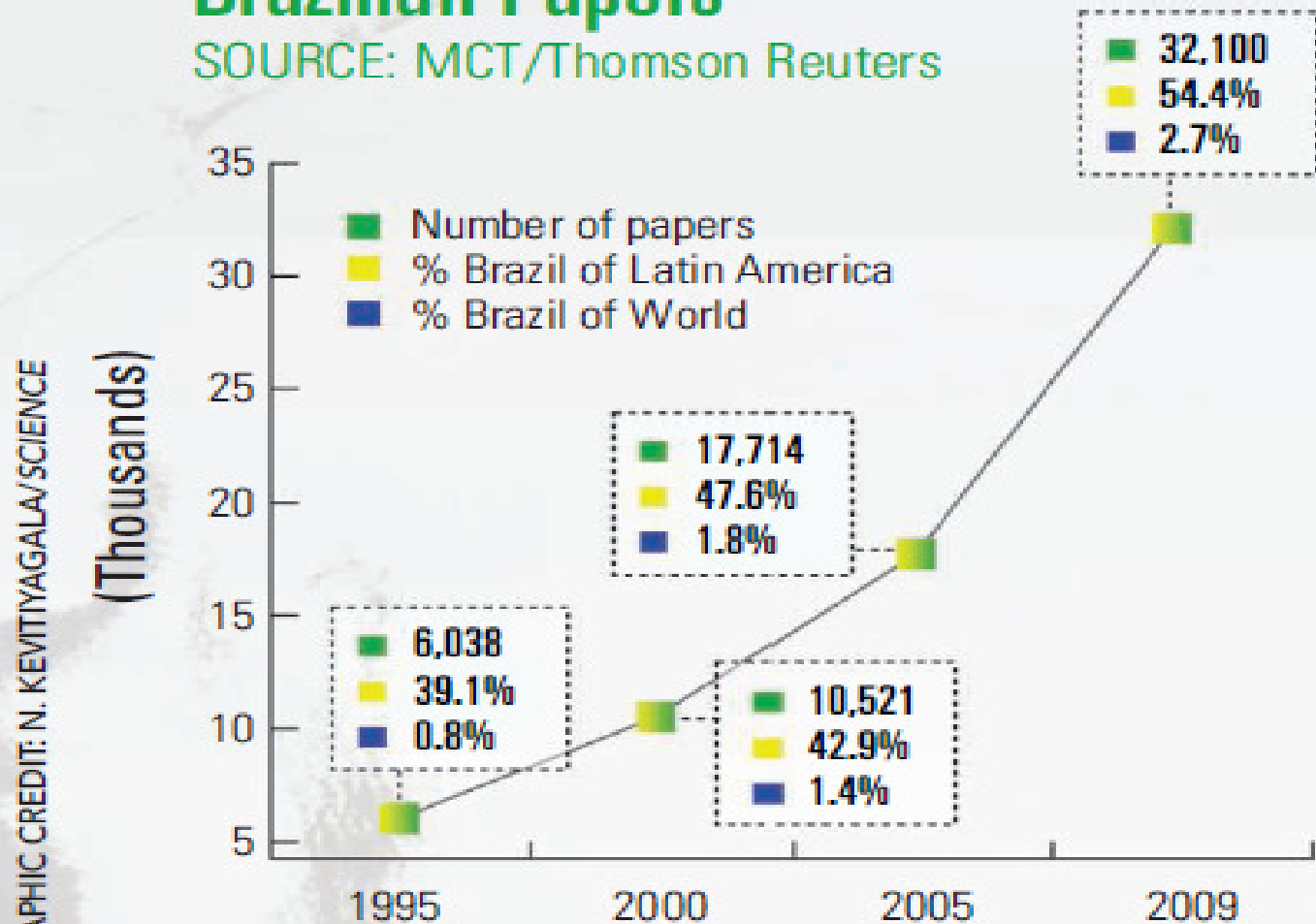
Social-Economic Policies are paying off

Brazilian Science: Riding a Gusher

A fast-growing economy and oil discoveries are propelling Brazil's research to new heights. But scientific leaders must overcome a weak education system and a low-impact track record

Brazilian Papers

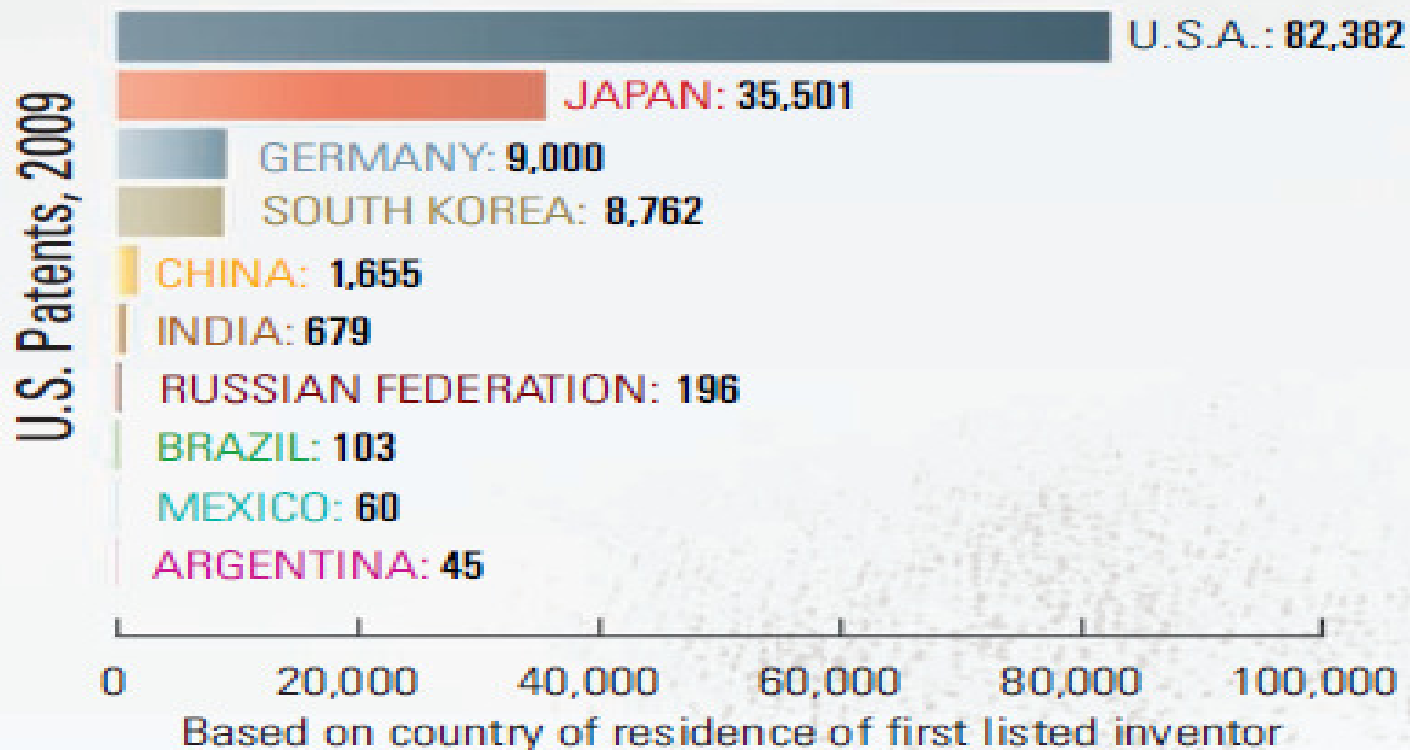
SOURCE: MCT/Thomson Reuters



2009 figure elevated due to increase in number of indexed journals

U.S. Patents for Selected Countries

SOURCE: USPTO



Difficulties of Brazilian S,T&I system

HOWEVER, S,T&I have not been decisive engines for the development of Brazil. Some reasons:

- Lack of R&D and innovation culture in industry
- Lack of continuity in S&T policies and funding
- No cross talk between industrial and S,T&I policies
- Deficient formation of innovation professionals

***Without Science there is no Innovation;
Science alone is not guarantee for Innovation***

Agribusiness: Embrapa and other institutions established the bridge between S,T&I and the productive sector;

We never had nothing similar in the industrial sector;

From science to business or how to promote innovation?

A graphic on the left side of the slide features three intertwined, curved, cylindrical shapes in shades of yellow-green, dark green, and light green. The background is a teal color with white, abstract, swirling lines.

SIBRATEC

Brazilian System of Technology

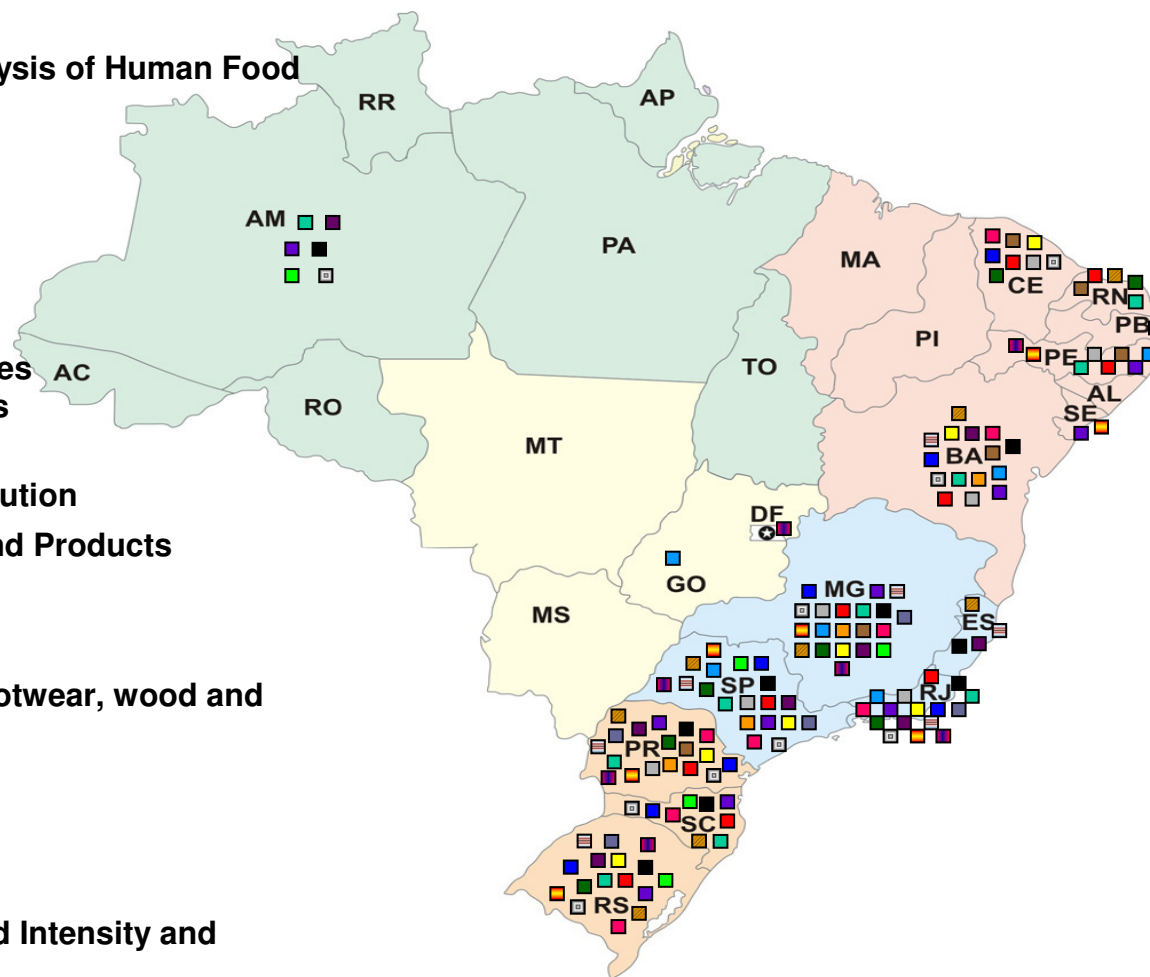
**Science and Technology for
Brazilian Enterprises**

- This component intends to support the infrastructure for calibration, tests, analyses and conformity assessment services, as well as standardization and technical regulation activities, to meet enterprises needs, associated to complying to technical requirements for market access.
- Networks are formed by laboratories and organizations that are accredited or have a laboratory quality management system implemented.

Technological Services

20 thematic networks

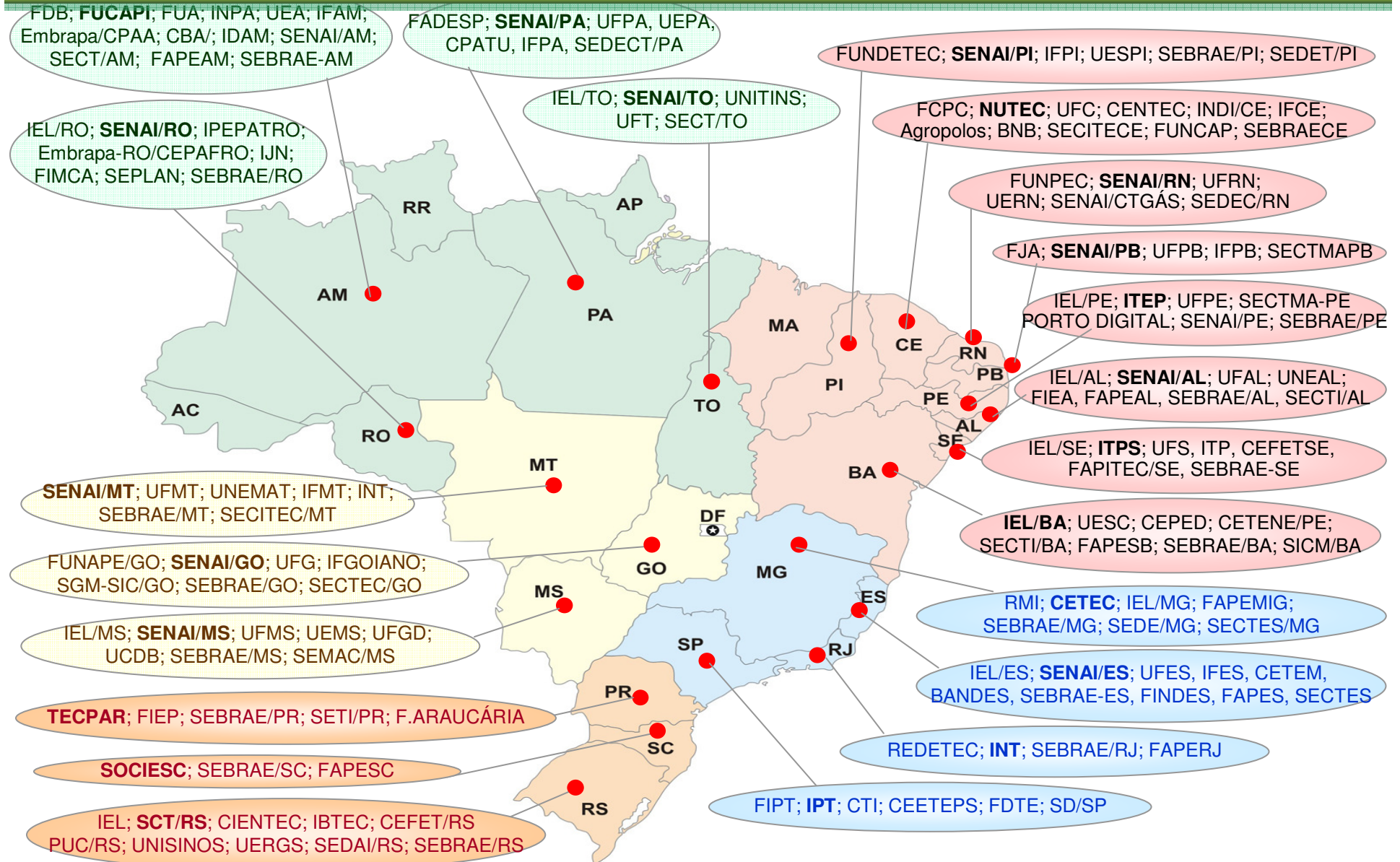
- Health Products
- Pharmaceutical Ingredients, Drugs and Cosmetics
- Blood and Blood Products
- Physical-Chemical and Microbiological Analysis of Human Food
- Biotechnology
- Sanitation and Water Supply
- Radiation Protection and Dosimetry
- Personal Protective Equipment
- Electronic products and devices
- Information and Communication Technologies as applied to new media: Digital TV, Wireless Communication, Internet
- Power Generation, Transmission and Distribution
- Defense and Public Security Components and Products
- Biofuels
- Mechanical Manufacturing Products
- Traditional Products: textiles, leather and footwear, wood and furniture
- Building Installations and Public Lighting
- Environmental Monitoring
- Processed Plastics
- Gravity, Magnetic Orientation, Magnetic Field Intensity and Electromagnetic Compatibility
- Chemical Residues and Contaminants in Food



- This component provides access of small and medium enterprises to the State Networks of Technology Extension aiming at **solving gaps** in technology management, projects, development, production and commercialization of goods and services.
- This arrangement is constituted by **institutions specialized in technology extension**.
- **The sectors serviced** by the Networks are chosen by the State, aiming at the reinforcement of local productive systems.

Technology Extension

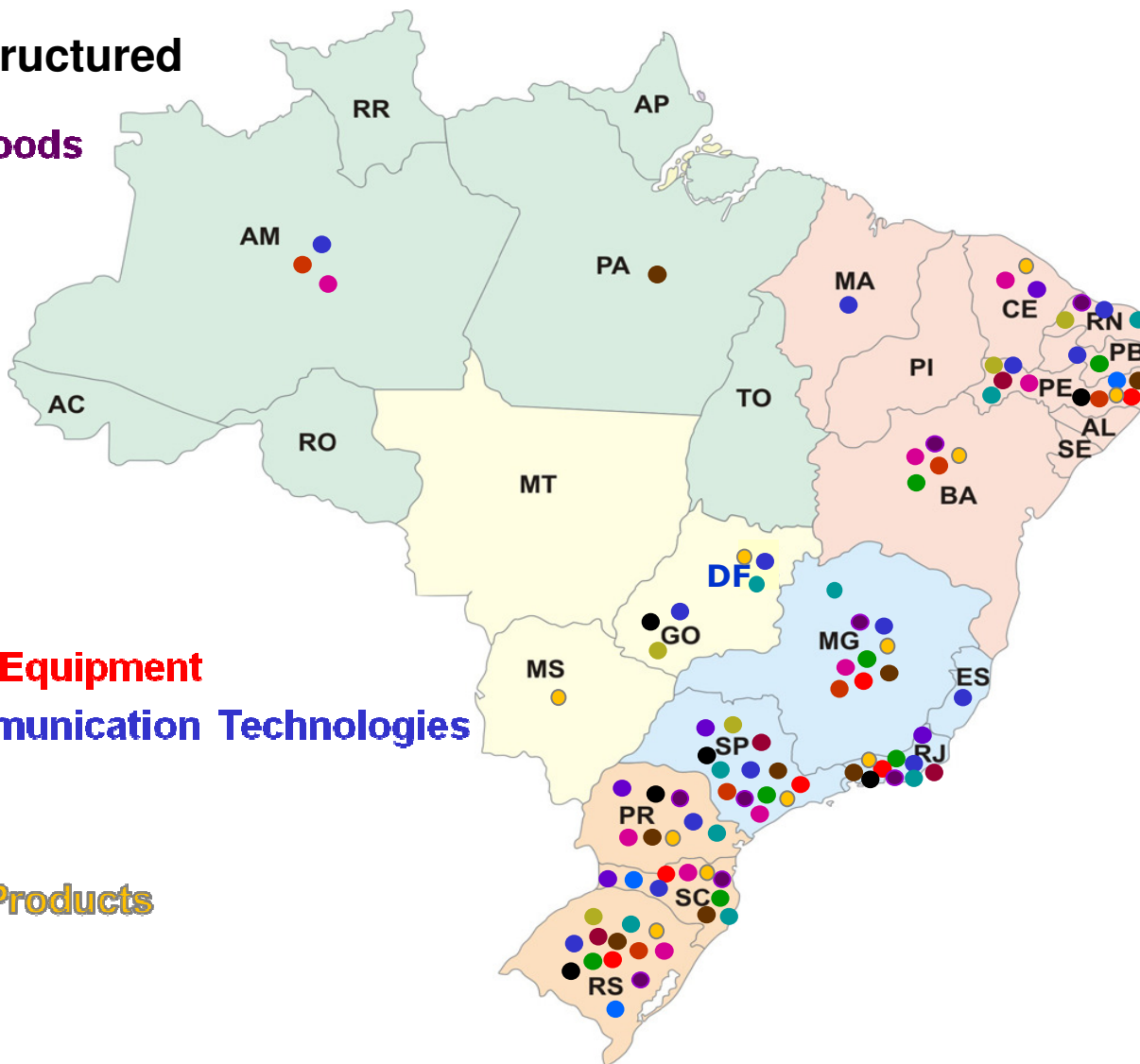
22 State Networks of Technology Extension



- This component aims at generating and transforming scientific and technological knowledge into products, processes and prototypes with commercial viability (radical or incremental innovation)
- Innovation Centers are composed by development units or groups that belong to technological research institutes, research centers or universities, with experience in interacting with companies.
- It is desirable that the participants institutions should have a **Intellectual Property Policy**.

14 SIBRATEC's Networks structured

- Manufacturing and Capital Goods
- Microelectronics
- Electronics for Products
- Wine Making and Viticulture
- Photovoltaic Solar Energy
- Plastic and Rubber
- Advanced Visualization
- Bioethanol
- Human Health Products
- Medical, Hospital and Dental Equipment
- Digital, Information and Communication Technologies
- Nanocosmetics
- Electric Vehicles
- Animal Health and Nutrition Products



TODAY:



Private Sector,
Enterprises,
Companies (local
and TNCs),
Productive Sector



Scientific and
Technological
Communities,
Research Centers,
Technological Institutes,
Universities



TOMORROW :

Sector,
prises,
anies,
ve Sector



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What we expect from the Chinese-Brazilian Collaboration

- Brazil is building a S,T&I system competitive on a world scale, although with a relative lack of R&D and Innovation culture in industry and enterprises in general;
- In many other fields associates with the relations between China and Brazil, we intend to establish a strategic partnership in science, technology and innovation;
- The areas for collaboration are many and varied. The number should be as large as we could afford an all efforts to enhance our capacity for deepening the strategic vision of our relations in S,T&I;
- Examples: Space Sciences, Nanotechnologies, TICs, Renewable Energies, Agriculture Technologies and Innovation Initiatives .

Many thanks for your attention

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