



LIMS Workshop

ICRISAT – Patancheru

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Michel E. B. Yamagishi

michel@cnptia.embrapa.br

Applied Bioinformatics

Embrapa Agriculture Informatics



- What is EMBRAPA?
- EMBRAPA's Research Units
- Main Achievements
- EMBRAPA's Bioinformatics



EMBRAPA's Mission

To provide feasible solutions for the **rural sustainable development** of the Brazilian agribusiness by **generating, adapting and transferring** knowledge and technology that benefits the Brazilian Society.



General Information

- Agricultural research corporation subordinated to the Ministry of Agriculture, Livestock and Food Supply;
- More than 40 research units distributed throughout the country connected via satellite network;
- More than 2200 research scientists **working** on different areas, products and ecosystems, **connecting** agriculture, livestock farming, agroindustry and environment.



[Embrapa Acre](#)

[Embrapa Agricultural Instrumentation](#)

[Embrapa Agriculture Informatics](#)

[Embrapa Agrobiology](#)

[Embrapa Amapa](#)

[Embrapa Beef Cattle](#)

[Embrapa Cassava & Tropical Fruits](#)

[Embrapa Cattle-Southeast](#)

[Embrapa Cerrados](#)

[Embrapa Coastal Tablelands](#)

[Embrapa Coffee](#)

[Embrapa Cotton](#)

[Embrapa Eastern Amazon](#)

[Embrapa Environment](#)

[Embrapa Food Technology](#)

[Embrapa Forestry](#)

[Embrapa Genetic Resources & Biotechnology](#)

[Embrapa Goats](#)

[Embrapa Grape & Wine](#)

[Embrapa Maize & Sorghum](#)

[Embrapa Mid-North](#)

[Embrapa Rice & Beans](#)

[Embrapa Satellite Monitoring](#)

[Embrapa Soils](#)

[Embrapa Soybean](#)

[Embrapa Swine and Poultry](#)

[Embrapa Tropical Agroindustry](#)

[Embrapa Technological Information](#)

[Embrapa Technology Transfer](#)

[Embrapa Pantanal](#)

[Embrapa Rondonia](#)

[Embrapa Roraima](#)

[Embrapa South Animal Husbandry & Sheep](#)

[Embrapa Temperate Agriculture](#)

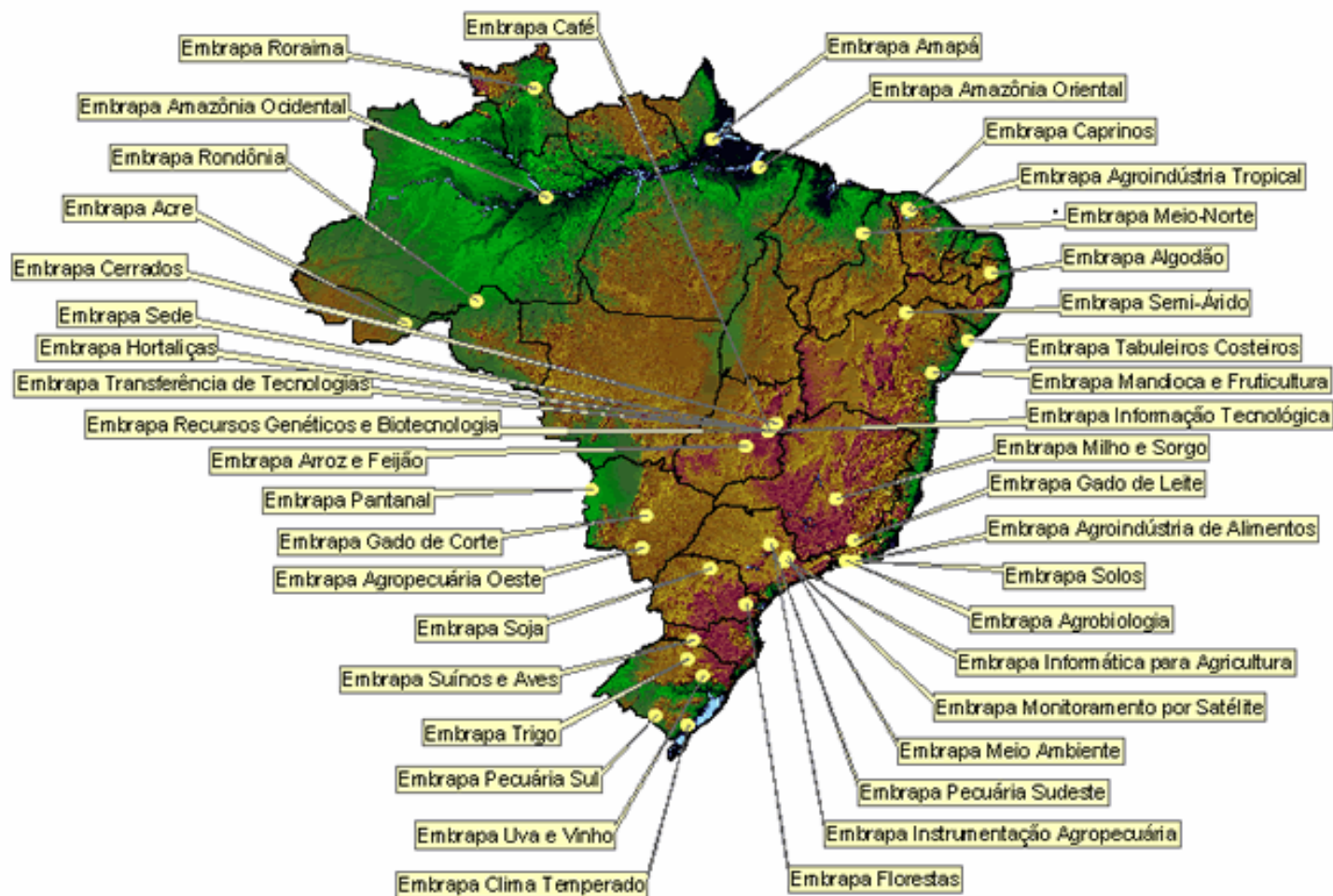
[Embrapa Tropical Semi-Arid](#)

[Embrapa Vegetables](#)

[Embrapa Western Amazonia](#)

[Embrapa Western Region Agriculture](#)

[Embrapa Wheat](#)





Main achievements

- Enabled Brazil to **increase its grain production** from 38 to more than 100 million tons from 1975 to 2002, with an increase of **only 15%** in the farmed area;
- Adaptation of **soybean** varieties to Cerrado and other regions: ↑ production in 50%;
- Pioneering genetic program → focused on tropical varieties → almost 30 varieties and hybrids (**first highly tolerant to acid soils BR201**);



Main achievements

- **2001: Vitoria** - the first **cow clone** produced in Latin America by technique of **cell nucleus transfer**;
- **2002: Lenda** - the first **cow clone** produced in Brazil by using the **adult parent cells** (from a parent cow from which the cells were extracted, and which was dead for few months already when the clone was performed);
- **2004: Vitoriosa** - the first **cow clone** produced from the **parent cow** which was **also clone**.



Protected Technologies

- Registration of **trademarks**: 156
- Registration of **computer programs**: 24
- **Patents** in Brazil : 119
- **Patents** abroad: 65
- **Cultivars** registered in Brazil: 195 (31 on examination)
- **Cultivars** registered abroad: 19



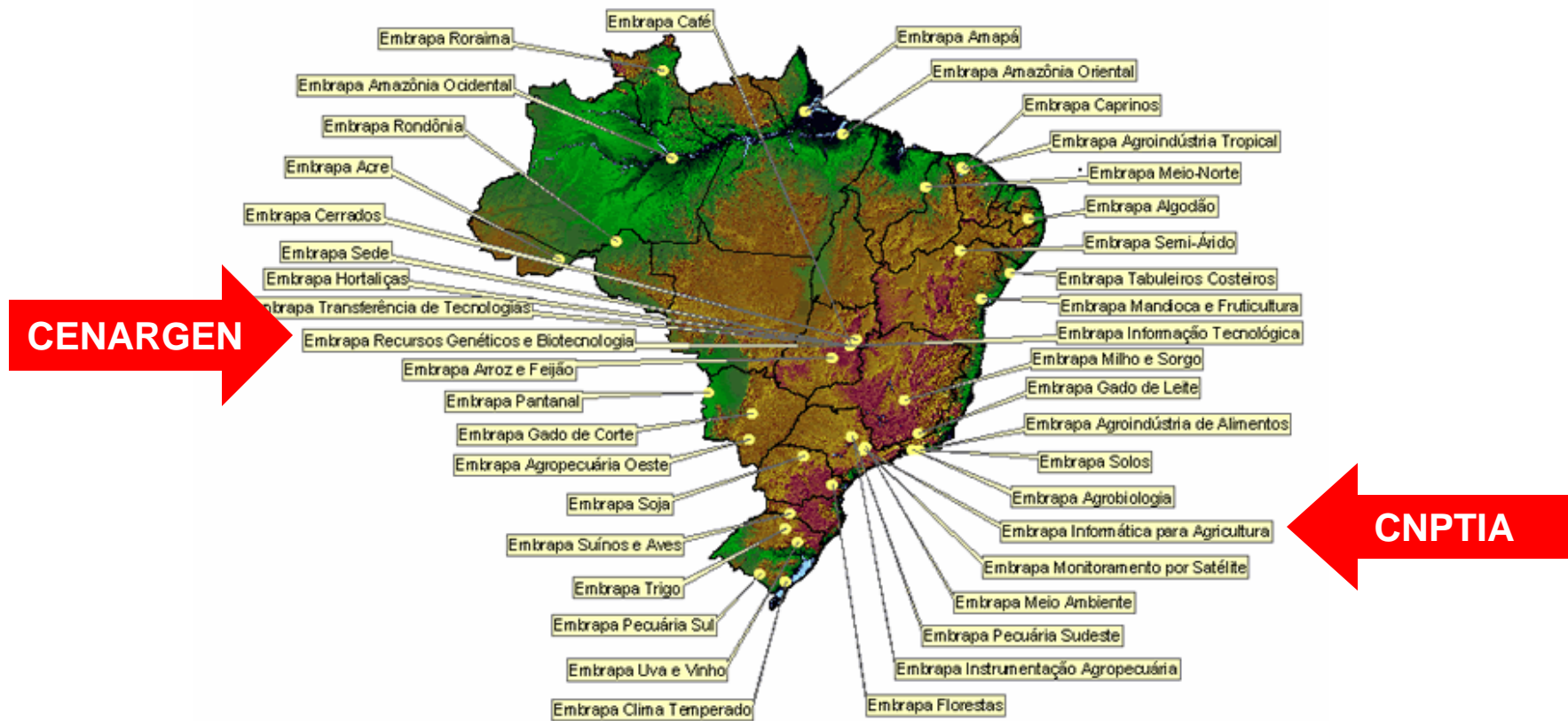
Agriculture Informatics

Generates, adapts and transfers knowledge in information technology and bioinformatics for the sustainable development of the Brazilian agribusiness.





Bioinformatics





CENARGEN

- **Genoma System**
- **Sequence Annotation**
- **PROSPECT**
- **Multiple Sequence Alignment**

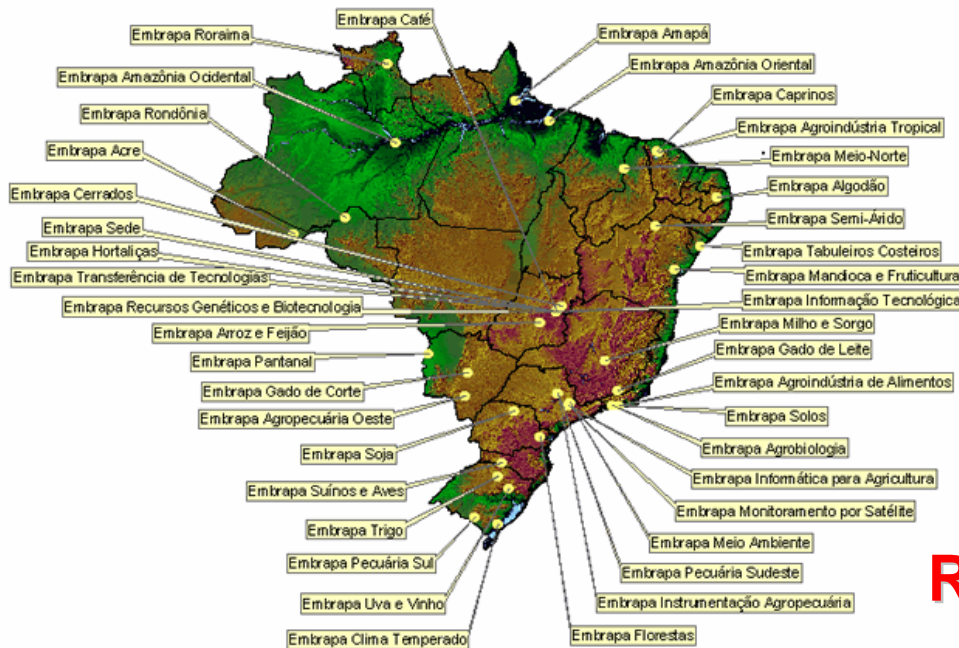


CNPTIA

- **STING**
- **Protein Structure Analysis**
- **Protein Structure Prediction**
- **Genome Sequence Analysis**



Supply Bioinformatic Platform

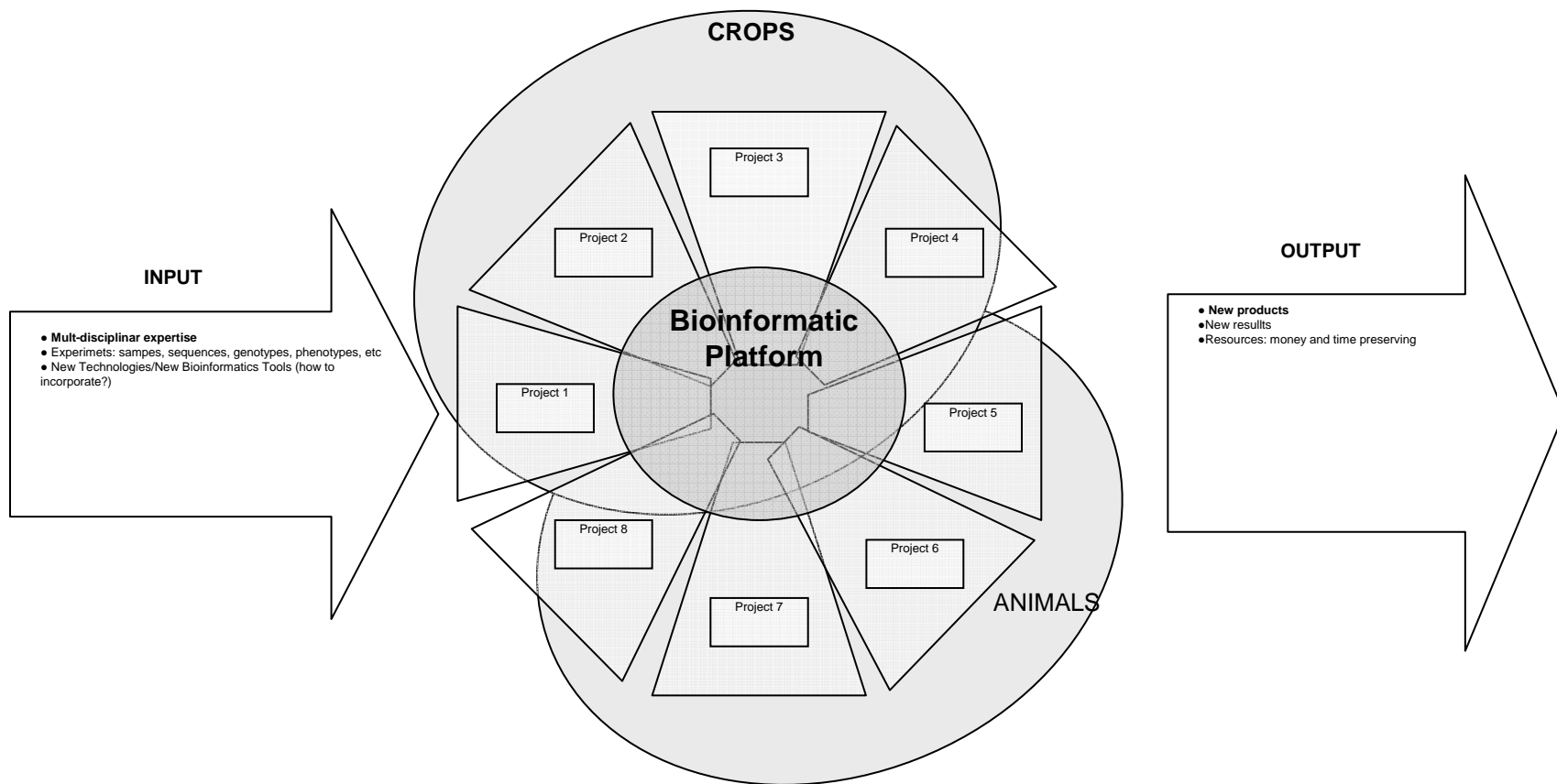


- Projects
- Internal
- External





EMBRAPA's Projetcs





धन्यवाद

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Thank You!