MAJOR TOPICS

- The rural context and Challenges
- Public policies and the Family Farming
- Embrapa and the International Technical Cooperation
- Governmental Programs and development actions
RURAL INHABITANTS

29.8 million inhabitants (2010)

RURAL POPULATION PERCENTAGE BY REGION.

Source: IBGE, 2011.
Biomes and Diversity

- Pampa
- Caatinga
- Cerrados
- Pantanal
- Mata Atlântica
- Amazônia
47 Embrapa Units

» Headquarters
» Thematic National Centers
» Product National Centers
» Ecoregional and Forestry Centers
» Service Units
Complexity… multifunctionality… unpredictability…

will dictate the future of agriculture…

Strategic foresight capacity, Faster analysis and answers…
Brazilian Agriculture – Risks, Challenges and Opportunities

Agriculture.... Food – Fiber – Energy
Agriculture.... Feeding – Nutrition – Health
Agriculture.... Biomass – Biomaterials – Green Chemistry
Agriculture.... Environmental services – Sustainability
Agriculture.... Welfare – Culture – Traditional Knowledge
Embrapa’s Strategic Planning Process

Composition of the RD&I Programs

Macro-programs

1. Major Agricultural Challenges
2. Competitiveness and Sustainability
3. Needs of Incremental Development and Finalization
4. Technological Transfer and Communication
5. Institutional Development
6. Support to Family and Small Scale Farming and Rural Development
Stratification and Gross Income in Rural Properties

5,175,489 Rural properties in Brazil

- 423,629 (8.19%)
- 975,974 (18.86%)
- 3,775,826 (72.95%)

1. Generated income\(^1\) > 10 SM\(^2\)
2. Generated income\(^1\) 2 ≤ SM\(^2\) ≥ 10
3. Generated income\(^1\) SM\(^2\) < 2

\(^1\) Considering sold production plus family consumption;
\(^2\) Monthly minimum wage = R$ 300,00;
\(^3\) Considering three (3) people per property.

Source: Alves & Rocha, 2009
Pillars for Development, Social Inclusion, Sovereignty and Food Security

Public policies

Science, Technology and Innovation

Technical assistance and rural extension

Strategic programs

Development
Family farming characterization in Brazil
(Law Nº. 11.326 From July, 2006)

Art.3º: Family farmers are those who practice farm activities in rural areas, fulfilling, at the time, the following requirements:

• Do not hold, in any instance, an area larger than four tax modules;

• Utilize, predominantly labor work from their own family;

• The majority of family income comes from their own property;

• Manages the property with their own family.
Public policies for rural development

CREDIT – PRONAF
National Program for Strengthening Family Farming

• 1,2 Million rural families included in rural loan program representing around 2.4 million contracts signed;

• Rural loan program for family farming reaching 5,400 (94%) of brazilian municipalities

• New loan opportunities for young farmers, women, agroecology, semiarid, forestry, cooperatives and commercialization;

• Lower interest rates, and banking service costs;

• Loan contract simplification.
Public policies for rural development

CITIZENSHIP TERRITORIES

OBJECTIVES

• Poorer population productive inclusion in the territories;

• Broadening citizenship basic programs;

• Social participation amplified;

• To increase public policies efficiency and efficacy.
Public policies for rural development

CITIZENSHIP TERRITORIES

- In 2008
  - 60 counties reached
  - 963 towns assisted
  - 7.3 million people
  - Budget: R$ 12.9 billion

- In 2010:
  - 120 counties reached
  - 1,853 towns assisted
  - 13.1 million people
  - Budget: R$ 27.4 billion
National Policy for Agroecology and Organic Production

PNAPO – Presidential Decree nº 7,794/2012

“To integrate, to link and to adjust policies, programs and inductive actions of agroecological transition and organic production aiming for sustainable development and populational welfare through a sustainable use of natural resources as well as supply and consumption of healthy food.”
## Brazilian Agriculture

### Food, Fiber and Energy Production

<table>
<thead>
<tr>
<th>Brazil</th>
<th>Million (km²)</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>Area</td>
<td>8.5</td>
<td>100</td>
</tr>
<tr>
<td>Preservation</td>
<td>4.6</td>
<td>54</td>
</tr>
<tr>
<td>Urban areas</td>
<td>0.2</td>
<td>2</td>
</tr>
<tr>
<td>Agriculture</td>
<td>2.7</td>
<td>31</td>
</tr>
<tr>
<td>Expansion area</td>
<td>1.0</td>
<td>12</td>
</tr>
</tbody>
</table>
## Brazilian Agriculture

### Annual Brazilian agricultural production (million tons)

<table>
<thead>
<tr>
<th>Crop</th>
<th>Production</th>
</tr>
</thead>
<tbody>
<tr>
<td>Grains</td>
<td>185</td>
</tr>
<tr>
<td>Meat</td>
<td>26</td>
</tr>
<tr>
<td>Fruits</td>
<td>41</td>
</tr>
<tr>
<td>Milk</td>
<td>32</td>
</tr>
</tbody>
</table>

### Agricultural contribution

- 28% GNP
- 37% Labor
- 42% Exports

## Brazil

- Agricultural exports US$ 96 Billion
- Major world producer of coffee, sugar cane, orange

Source: IBGE, Conab e MDIC.
Brazilian Agriculture

Family farming contribution

» Area utilized: 106.8 million hectares
» 12 million farmers (1/3 women)
» 24% Agricultural area
» 84% land owners in Brazil

» Cassava ...... 87%  » Chicken... 50%
» Milk ............. 58%  » Corn......... 46%
» Beans............ 70%  » Swine....... 59%
» Meat ............ 30%  » Rice......... 34%

Family farming in Brazil

**NUMBER OF FARMS**
- 84.4% (4,367,902 farms)
- 15.6% (607,507 farms)

**TOTAL AREA**
- 24.3% LARGE SCALE FARMING
- 75.7% FAMILY FARMING

**LABOR POPULATION (%)**
- 74.4% FAMILY FARMING
- 25.6% LARGE SCALE FARMING

**LABOR POPULATION (million people)**
- 12.3 FAMILY FARMING
- 4.2 LARGE SCALE FARMING

Source: IBGE, 2006
Family farming in Brazil

GROSS PRODUCTION VALUE

R$ 89 billion

R$ 54 billion

LARGE SCALE FARMING

FAMILY FARMING

Source: IBGE, 2006
Family agriculture and food security

FOOD PRODUCTION

87 70 46 38 34 21 16

CASSAYA  BEANS  CORN  COFFEE  RICE  WHEAT  SOYBEAN

Source: IBGE, 2006
Family agriculture and food security

**FOOD PRODUCTION**

- **MILK**: 58%
- **CHICKEN**: 50%
- **PORK**: 59%
- **BEEF**: 30%

Source: IBGE, 2006
Construction and Knowledge Exchange, TT and Technology Innovation

“Technology innovation process”
Concept Evolution at Embrapa

**Phase I**

Concept: It starts and finishes in the farmer

Concept: Regional and Sectoral development and institutional cooperation

**Phase II**

Concept: The initial and the final link is the production chain; TT is part of R&D

**Phase III**

FARMER → CITIZEN

Evolution of technology transfer at Embrapa
International Cooperation

Knowledge Exchange

Technical Cooperation

Business
Brazil is the unique country with its territory almost totally situated into the tropical belt in which it was developed a high performance agriculture
South-South partnership to promote agricultural research and innovation for development, through policy dialogue and funding of collaborative projects.
## Growing Demands for Technology Transfer from Government Programs

<table>
<thead>
<tr>
<th>Program</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Plano Brasil Sem Miséria</strong></td>
<td>Technology Transfer for the poorest regions with initial emphasis in the semiarid</td>
</tr>
<tr>
<td><strong>Mais Alimentos</strong></td>
<td>Technology transfer focusing on the production chains</td>
</tr>
<tr>
<td><strong>ABC</strong></td>
<td>No-tillage system, land reclamation areas; crop, livestock and forestry integrated systems, planted forests, animal waste treatment</td>
</tr>
</tbody>
</table>
## Growing Demands for Technology Transfer from Government Programs

<table>
<thead>
<tr>
<th>Program</th>
<th>Technology Transfer for the Belo Monte hydroelectric power plant in the Amazon region</th>
</tr>
</thead>
<tbody>
<tr>
<td><img src="logos/xingu.png" alt="Xingu Logo" /></td>
<td></td>
</tr>
<tr>
<td><img src="logos/arcov.png" alt="Arco Verde Logo" /></td>
<td>Technology Transfer for the Amazon region</td>
</tr>
<tr>
<td><img src="logos/ppcdam.png" alt="PPCDAM Logo" /></td>
<td>Technology Transfer for fostering agricultural sustainable production</td>
</tr>
<tr>
<td><img src="logos/plano.png" alt="Plano de Ação para Prevenção e Controle de Desmatamento na Amazônia Legal" /></td>
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Thanks for your attention!