Government Support to Innovation in Brazil

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Ministry of Science and Technology
Brazil
2008

Total area: 8.5 million km²
Population: 191.6 millions
GDP: ~ US$ 1,600 billions
Investment in S&T: 1.11% GDP
Brazilian indexed papers: 2.12% (ISI)
PhD/year: ~ 10,000

2007-2010 Action Plan on Science, Technology and Innovation for National Development
National expenditure in R&D (%GDP)

- Mexico (2005): 0.46
- Argentina: 0.51
- Chile (2004): 0.68
- India (2003): 0.78
- Brazil (2008): 1.11
- Russia: 1.12
- China (2006): 1.42
- Canada: 1.89
- France: 2.08
- Germany: 2.53
- USA: 2.68
- Korea (2006): 3.22
Private and governmental investment in R&D (%) in Brazil

<table>
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<tr>
<th>Country</th>
<th>Year</th>
<th>Enterprises</th>
<th>Government</th>
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<tbody>
<tr>
<td>Italy</td>
<td>2006</td>
<td>40</td>
<td>48</td>
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<tr>
<td>Brazil</td>
<td>2007</td>
<td>47</td>
<td>53</td>
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<tr>
<td>France</td>
<td>2006</td>
<td>52</td>
<td>38</td>
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<td>Germany</td>
<td>2006</td>
<td>68</td>
<td>28</td>
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<td>Finland</td>
<td>2007</td>
<td>68</td>
<td>24</td>
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<tr>
<td>Korea</td>
<td>2006</td>
<td>75</td>
<td>23</td>
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<tr>
<td>Japan</td>
<td>2006</td>
<td>77</td>
<td>16</td>
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Percentage distribution of researchers in full-time equivalence by institutional sector, 2005

Source: MCT
Most Brazilian researchers work at universities... but this is changing...

Percentage distribution of researchers, in full time equivalence, by institutional sector

source: MCT
80% ➔ modernization of production infrastructure (machinery and equipment) !!!

20% ➔ Internal R&D

Goal: to increase internal R&D activity
Challenges faced by innovative Brazilian enterprises

- High innovation costs: 82.8%
- Economic risks: 76.4%
- Financial support: 62.1%
- Qualified personnel: 45.6%
- Technological knowledge: 36.6%
- Standards, norms & regulation: 25.1%
- Market information: 33.9%
- Cooperation possibilities: 32.2%
- Shortage of technical services: 28.2%
- Poor response of consumers: 25.6%
- Organizational rigidity: 21.2%

80% high innovation costs
75% excessive economic risks
60% shortage of financing sources

New legislation is changing this scenario!!!
Human resources in S,T&I in Brazil (2007)

- 200,000 Researchers
  - 70,000 Ph.D.
  - 110,000 M.Sc.

- Graduate Students:
  - 50,000 for Ph.D.
  - 92,000 for M.Sc.

- Degrees awarded in 2007:
  - 9,900 Ph.D.
  - 33,000 M.Sc.

1,1 million CVs in “Lattes Platform”
New ST&I environment in Brazil

- Strong dialogue with society for definition of priorities
  (III National Conference on S,T&I, November 2005; next in May 2010)
- Growth and stability of public resources
- Organisation of private environment for innovation
- Industry more engaged in innovation activities
- Emphasis on university - enterprise cooperation
- Contribution to the strengthening of production and export structures, through Industrial Policy
- Strengthening of foresight, follow-up and evaluation mechanisms
State Policies

Economic Policy

Plan for Growth Acceleration PAC

Plan for Education Development (PDE)

Policy of Productive Development (PDP)

Plan for Health Development

Plan for Agricultural Development

**Action Plan on S,T&I**

2007-2010 Action Plan on Science, Technology and Innovation for National Development
The Action Plan on S,T&I

- prioritizes the expansion of innovation in enterprises and the consolidation of the national system for S,T&I
- proposes 4 strategic priorities, distributed in 21 lines of action
- is articulated with the Industrial Policy and Plans for Development of Education, Health and Agriculture

Major Goal 2010

Investment in R,D&I

1.5 % GDP in R,D&I
(1.02% in 2006; 1.11% in 2008)
Strategic Priorities

1- Expansion and Consolidation of S,T&I Nacional System
   • Human resources qualification and training
   • R&D laboratory infrastructure
   • International cooperation

2- Promotion of Technological Innovation in Enterprises

3- R,D&I in Strategic Areas
   - biotechnology  - health  - nanotechnology
   - information and communication technology
   - space  - nuclear energy  - defense
   - renewable energy : biofuels  - agriculture  - biodiversity
   - large regions (Amazon, Semi-Arid, Pantanal etc.)

4- S,T&I for Social Development
Master’s and PhD. awards per year, in Brazil

- 32,900 master’s degrees awarded in 2007
- 9,900 PhDs awarded in 2007

source: Capes/MEC
The number of publications increased 218% between 2000 and 2008.
Governmental instruments e mechanisms for supporting ST&I

- tax incentives
- financial loans and grants
- venture capital
- human resources for R&D
- S&T institution-enterprise cooperation projects

- sectoral funds
- IT law
- innovation law (10973/2004)
- law 11196/2005
- industrial policy
Innovation Law - nº 10973/2004

- cooperation between S&T institutions and enterprises
- sharing of the federal R&D institutions infrastructure with productive sector (SMEs)
- incentives to incubation in S&T institutions
- encouragement to technology transfer
Innovation Law - nº 10973/2004

- public support to R,D&I activities in private enterprises
- public resources in enterprises for products and services development & innovation
- support micro and small enterprises
- incentives to independent inventors
Law nº 11196/2005

- **objective**: to promote development of R,D&I in micro and small companies and independent inventors

**Fiscal Incentives**
- to simplify application procedures

**Researchers**
- to support employment of graduate researchers by private companies to develop technical innovations
Information Technology Law – no. 11077/2004

- tax incentives for enterprises that invest in R&D activities in information technology

- incentives to associations between IT enterprises and S&T institutions
Main advances from 2003 to 2008

- S,T&I: a matter of State
- S,T&I policy focused on four strategic lines
- new regulation for innovation
- new instruments and mechanisms for financing R&D
- increased federal funds for S,T&I
- greater dialogue with states, municipalities, scientific and enterprises associations and society in general
- improvement and expansion of existing S,T&I programs and creation of new ones
FNDCT – National Fund for Scientific and Technological Development

1970-2007

R$ millions

National expenditure on R&D as a ratio of GDP (%)

2010 goal: 0,65 % GDP on R&D by the private sector

Enterprise sample increased since service sector was included in the PINTEC survey
National expenditure on R&D in R$ millions

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Enterprise sample increased since service sector was included in the PINTEC survey
Conclusions

- new legal framework will change the innovation environment in companies

- governmental programs have significantly increased support to innovations in companies

- awareness of government programs and incentives must reach small and medium enterprises to encourage them towards innovation
Thank you!

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