



SISTEMA ECONÓMICO  
LATINOAMERICANO  
Y DEL CARIBE



Ministerio de Relaciones Exteriores



APCI

Agencia Peruana de Cooperación Internacional

XXVII Reunión de Directores de Cooperación Internacional y Entidades Responsables en  
Ciencia, Tecnología e Innovación en América Latina y el Caribe

SESIÓN I

# Las Políticas Públicas sobre Ciencia, Tecnología e Innovación en América Latina y el Caribe: su adaptación a las necesidades de desarrollo de la Región

JAILSON BITTENCOURT DE ANDRADE

*Vice-Minister of Policies and Programs in Research and Development*

Lima, October 13, 2016

MINISTÉRIO DA  
**CIÊNCIA, TECNOLOGIA  
INOVAÇÕES E COMUNICAÇÕES**



# Economic and Social Development

To Brazil realize the dream of a prosperous, just and sovereign society is crucial that progress in structuring an *economic basis* supported by an *endogenous and dynamic process* of *innovation* building an *ambitious agenda* of *ST&I*, which should have as foundation *education* and *basic research* of quality.



# Sustainable Development



ST&I  
as a basis for  
sustainable  
development

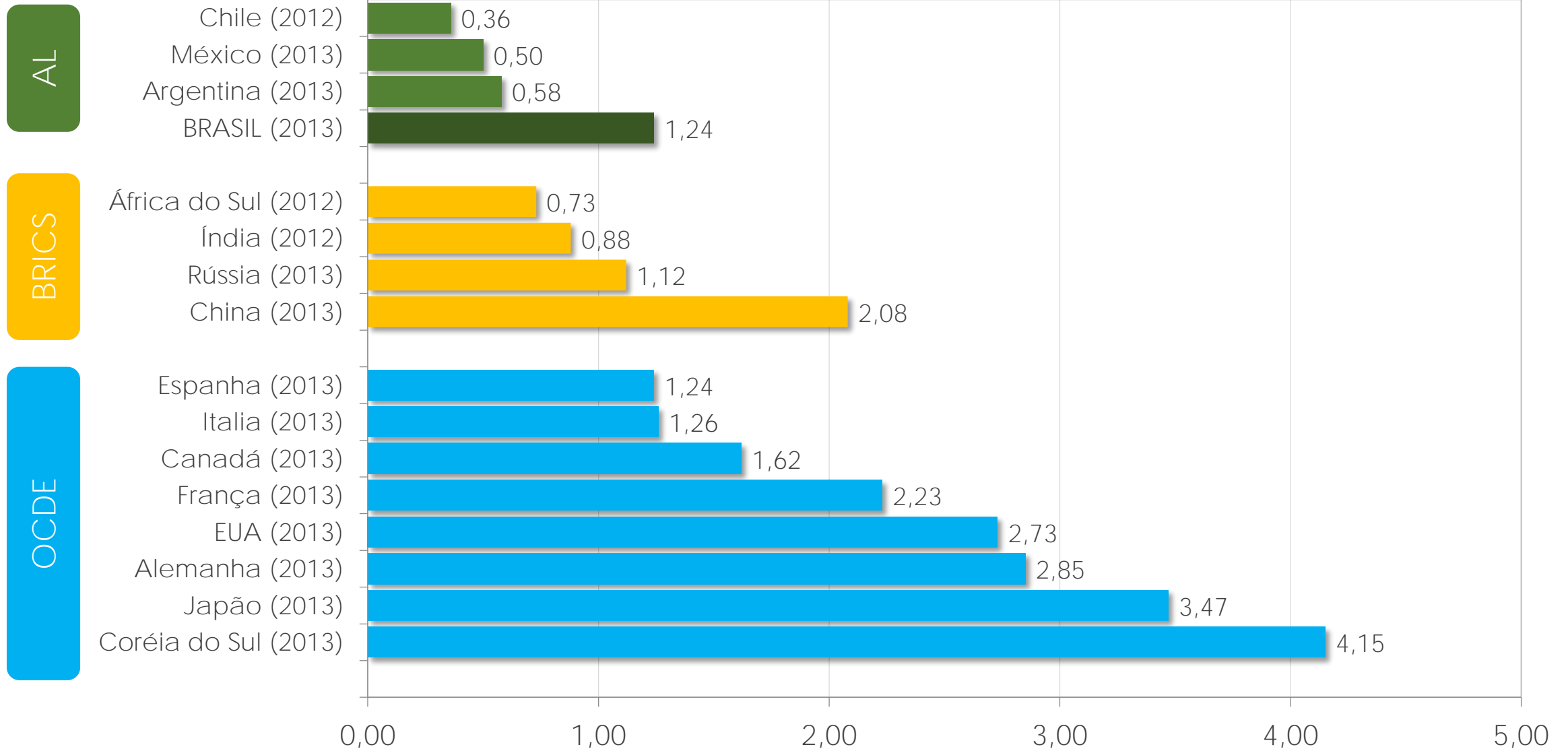
# Brazil at a Glance



- Population: 206 million
- Total Area : 8,5 million km<sup>2</sup>
- GDP (2015): US\$ 1,77 trillion
- Scientific Production:
  - 2,37 % of the World (2015)
  - Scientists and Researchers 180 thousand (2014)
  - Enterprises (industrial Sector) 512 Thousand (2016)



# Gross domestic expenditure on R&D as a percentage of GDP



# Changing world

## *New classes of problems:*

- ✓ *what is the molecular basis of life and death?*
- ✓ *functioning of the brain - the human-machine interaction*
- ✓ *cognitive computing*
- ✓ *energy: generation, use, storage and conservation*
- ✓ *water and food security*
- ✓ *conflict and national security*
- ✓ *climate instability*
- ✓ *...*

# Some advances in ST&I policy in Brazil



Human Resources



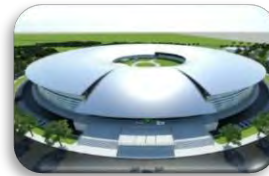
Research Networks



Research Infrastructure



Innovation Support



Sirius



RMB



Satélite CBERS-4



Ship "Vital de Oliveira"

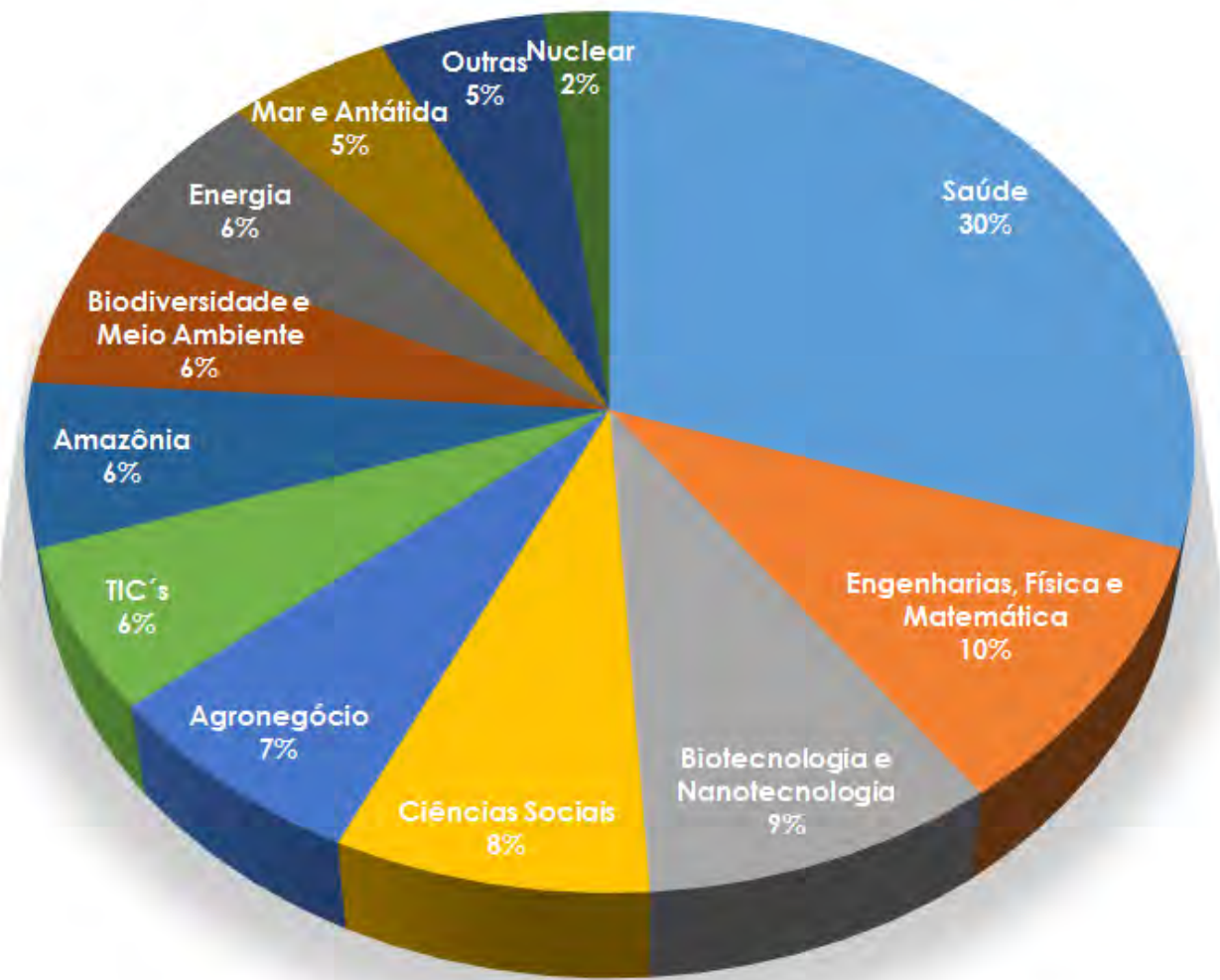


The networks of strategic areas interaction with

science and a strong

people and innovation and theories in ons and s, providing a ibution of rological

### Distribuição de INCT por temas





## *National Integration and Interaction*

*1,937 institutions*

*6,794 researchers*

*436 partnerships with public entities and/or non-governmental*

## *Human Resources Training*

*10,994 trained researchers*

*79 Graduate Programs created*

*566 disciplines created*



## *International Cooperation*

*787 international cooperation agreements*

*1,318 foreign researchers*

*139 companies*

*376 international associated laboratories*

## *Science, Technology and Innovation Production*

*70,389 records of academic publications*

*578 patent applications*

*12 patents already in marketing*

# Human Resources Training



## Federal Universities

Total sites: 63

Campus total: 321

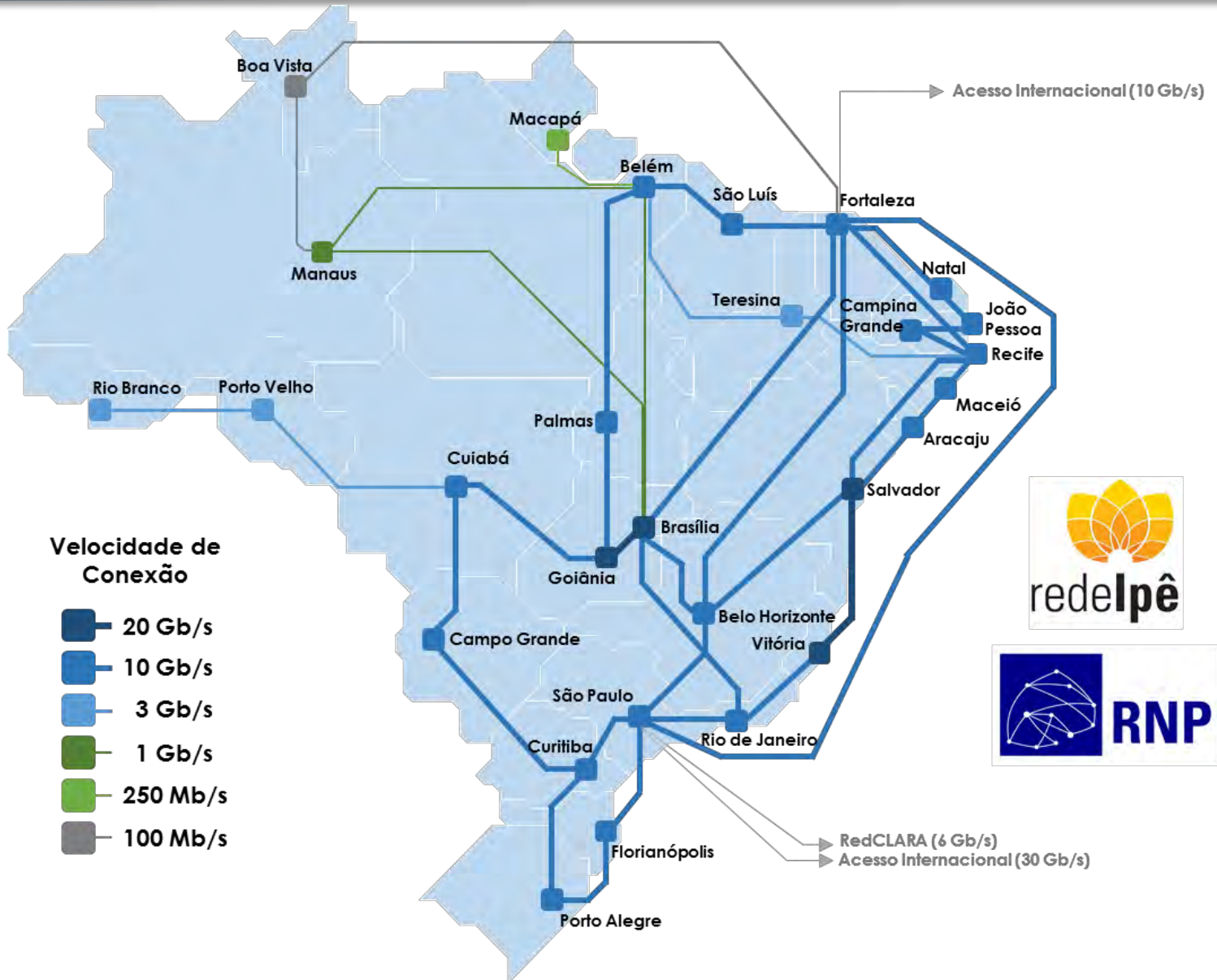
Municipalities served: 275

Federal Network Professional  
Education, Science and Technology

Campus total: 644

Municipalities served: 568

# Cyberinfraestrutura – RNP



Ipê/RNP Network - the internet network infrastructure dedicated to the Brazilian community of higher education and research

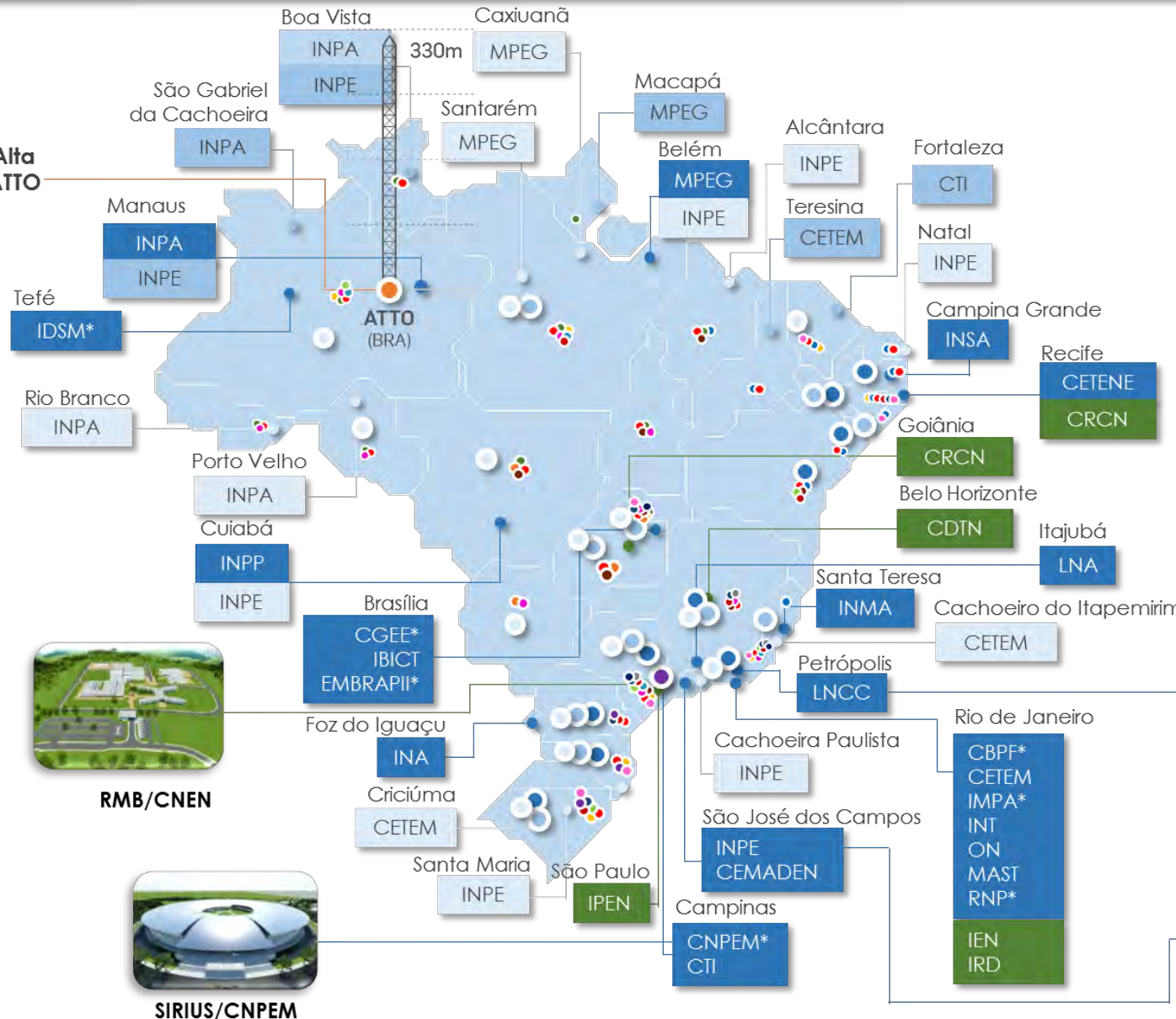


# MCTIC - National Presence

- **Parques Tecnológicos**  
(28 em operação)
- **Parques Tecnológicos**  
(28 em implantação)
- **Parques Tecnológicos**  
(38 em projeto)

## Redes de Pesquisa:

- Rede Clima
- Rede Pro-Centro-Oeste
- Renorbio
- Bionorte
- PPBio
- ComCerrado
- LBA
- GEOMA
- BR-Bol
- RENAMA
- RRC
- Rede BIOSUL
- Rede de Bioinformática
- Rede CRB-Br
- Rede Biotecnologia Marinha



RMB/CNEN



SIRIUS/CNPEM



NPqHo "Vital de Oliveira"



Navio Hidroceanográfico "Cruzeiro do Sul"



Supercomputador SANTOS DUMONT LNCC



Supercomputador TUPÃ/INPE



*Brazil has successful examples of how to convert knowledge into wealth*



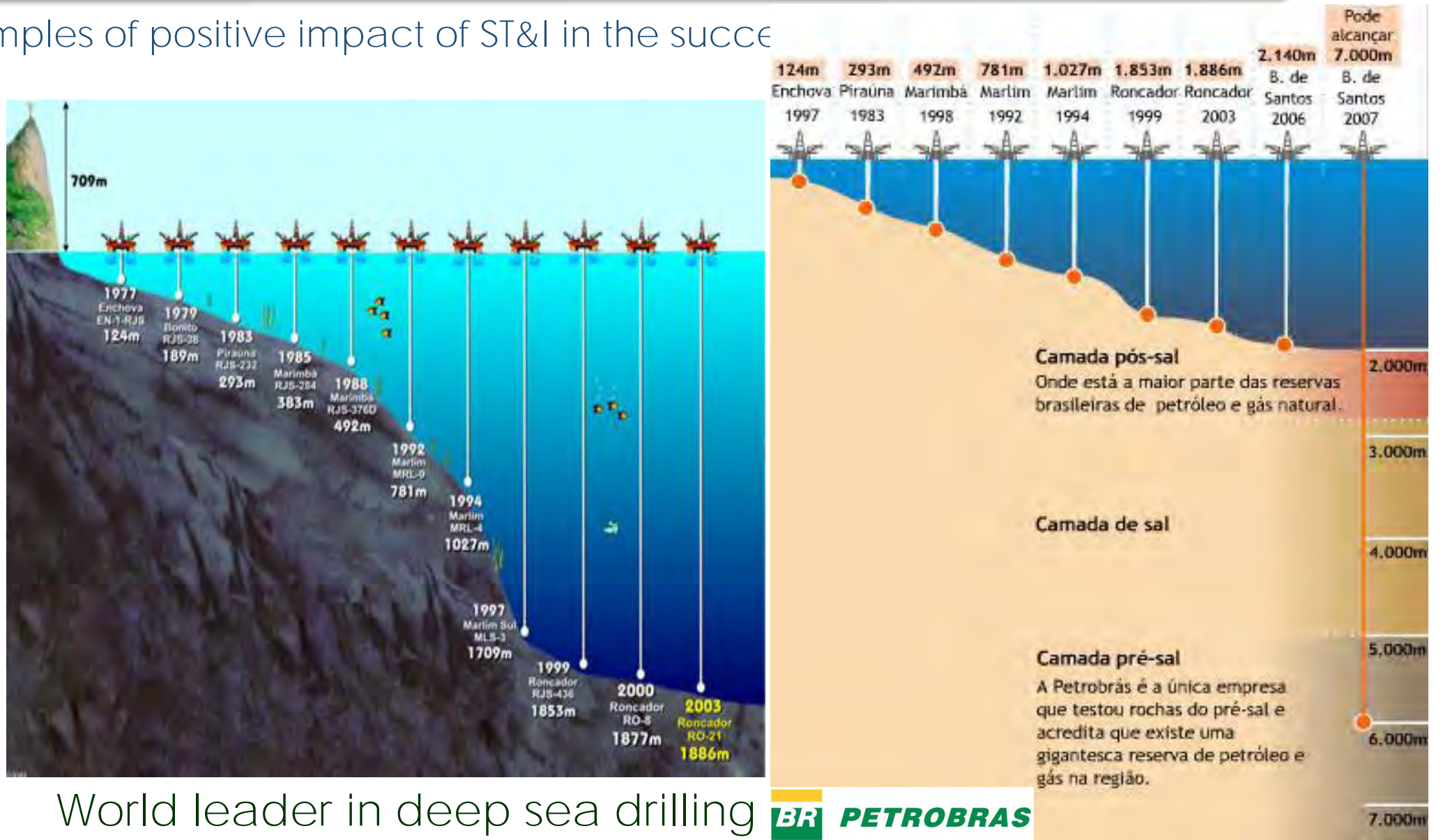
# Brazil - examples of successful of the ST&I policy

Examples of positive impact of ST&I in the success of the current Brazilian economy



# Brazil - examples of successful of the ST&I policy

Examples of positive impact of ST&I in the succe



World leader in deep sea drilling

# Brazil - examples of successful of the ST&I policy

Examples of positive impact of ST&I in the success of the current Brazilian economy

Prof. Richard H. Smith, head of the Department of Aeronautics at MIT



**EMBRAER**



# Brazil - examples of successful of the ST&I policy

Examples of positive impact of ST&I in the success of the current Brazilian economy



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



# Brazil - examples of successful of the ST&I policy

Examples of positive impact of ST&I in the success of the current Brazilian economy

Grand Schools of Agronomy



# Brazil - examples of successful of the ST&I policy

Examples of positive impact of ST&I in the success of the current Brazilian economy



*Brazil is the world leader in R&D in tropical agriculture*

Scientific papers in trans-disciplinary agriculture: 9% of the world

Product	World Production
Sugar, Orange Juice, Coffee	1°
Soybeans, Beef, Poultry	2°
Corn, Fruits	3°



# Brazil - examples of successful of the ST&I policy

## Sugarcane Bioethanol for Vehicle Fuel

- ✓ First experiments date back to 1925
- ✓ Proálcool (1975): bioethanol blended in gasoline (25%)
- ✓ Flex-fuel engines (gasoline, bioethanol or any mix) introduced in 2003
- ✓ 90% of all cars sold are flex-fuel
- ✓ Total bioethanol today equals the amount of gasoline

1925



1975



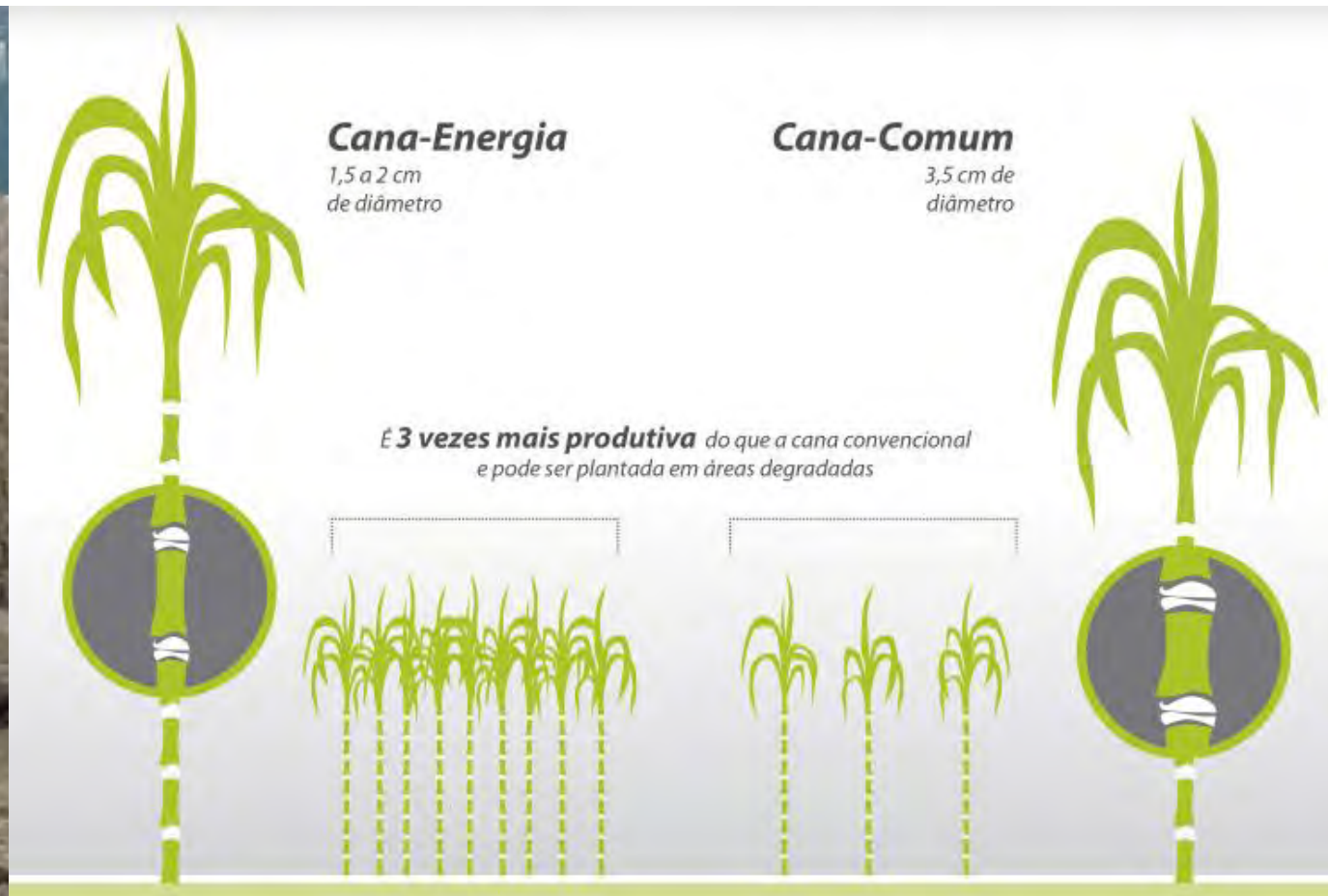
2003





# Brazil - examples of successful of the ST&I policy

## Sugarcane Bioethanol for Vehicle Fuel



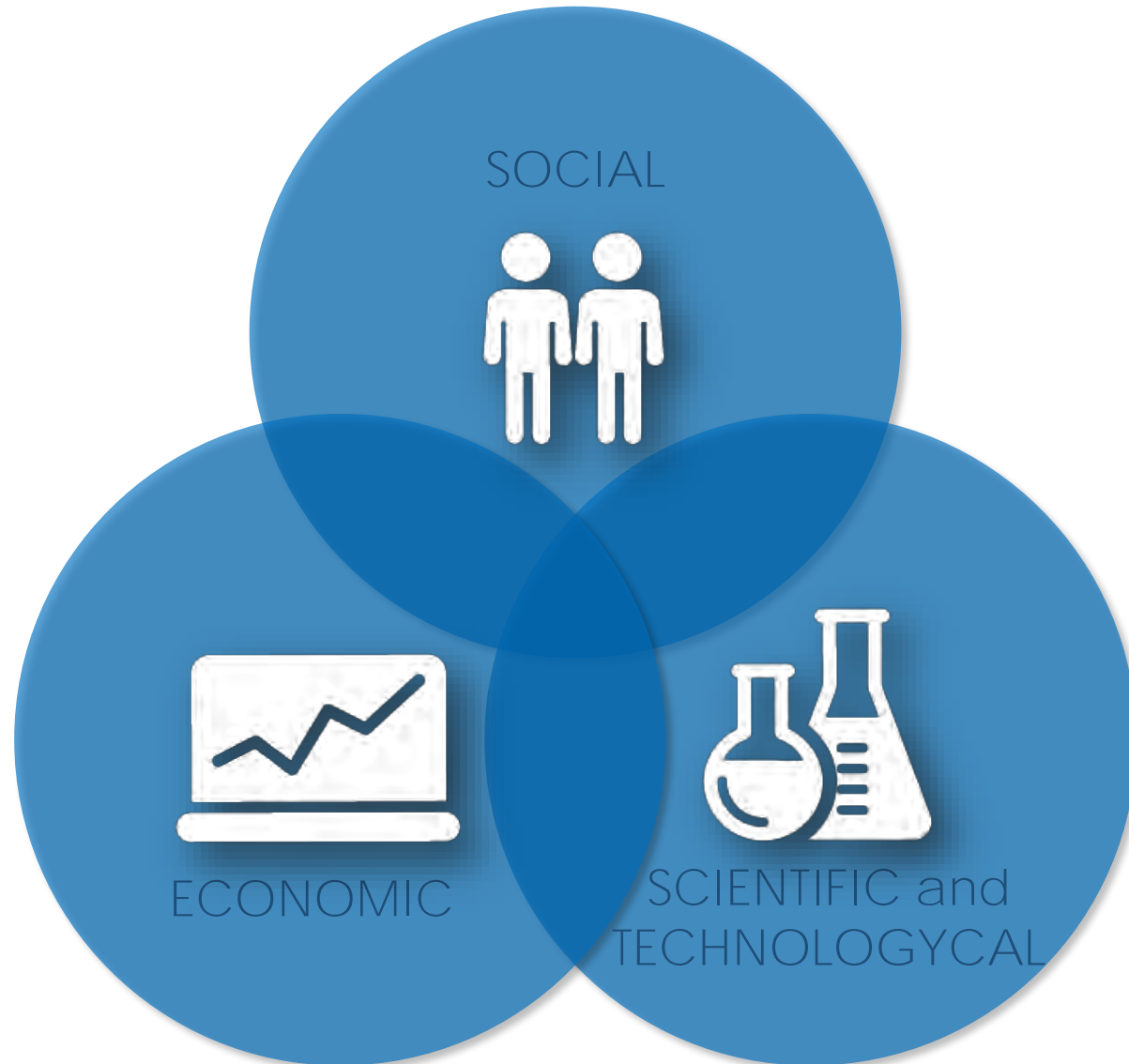
# ENCTI – National Strategy of ST&I



NATIONAL STRATEGY OF  
SCIENCE, TECHNOLOGY AND INNOVATION  
2016 – 2019

Science, Technology  
and Innovation for  
National Development

# ST&I Policy dimensions





# ST&I Policy challenges



PLACING BRAZIL  
AMONG THE  
COUNTRIES WITH  
THE HIGHEST  
DEVELOPMENT IN  
ST&I



IMPROVE  
INSTITUTIONAL  
CONDITIONS FOR  
INCREASING  
PRODUCTIVITY OF  
INNOVATION



REDUCE REGIONAL  
DISPARITIES IN  
PRODUCTION AND  
ACCESS TO ST&I



STRENGTHENING  
THE BASIS FOR  
PROMOTING  
SUSTAINABLE  
DEVELOPMENT



DEVELOP  
INNOVATIVE  
SOLUTIONS FOR  
PRODUCTIVE AND  
SOCIAL INCLUSION



# ST&I Policy - Axis



*Human  
Resources*



*Research and  
Infrastructure*



*Innovation*



*Financing*



*Legal  
Framework*

# Some priority issues



Water



Food



Energy



Climate



Health



Biomes and Bioeconomy



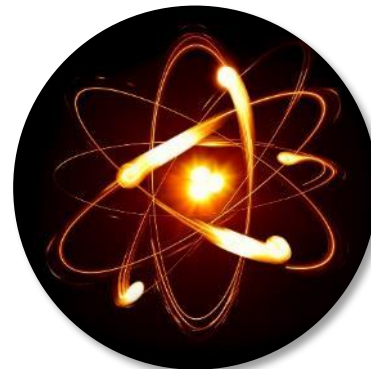
Digital Economy and Society



Enabling and Converging Technologies



Aerospace and Defense



Nuclear



Social Sciences and Technologies

# Puente hacia el futuro

*Education, Science,  
Technology, Innovation  
and Communications is  
the bridge to a future  
of economic and social  
development.*





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# Thank you!

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