

# **Innovation and Competitiveness: the challenge of the Brazilian industrial policy**

Workshop on  
“Global Innovation Networks”

Rosane Argou Marques  
Senior Coordinator for Innovation



Belo Horizonte, May 5, 2011

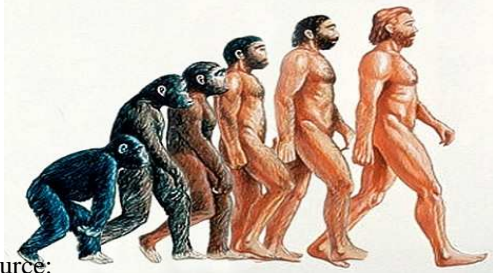
**“A inovação implica um novo modo de olhar o mundo, pressupõe uma valoração inédita do novo e uma forma nova de conviver com o transitório.”**

Evando Mirra de Paula e Silva – 59 SBPC –  
Belém do Pará

**“Innovation implies another way to see the world, a valoration of the new and a new way to live with the transitory and changing way of life.”**

# Accumulation, adaptation and evolution

## Human Evolution

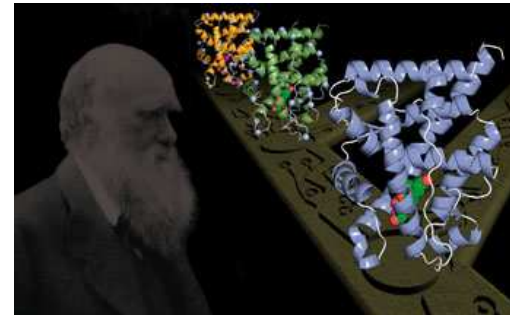


Source:

<http://blogs.plos.org/neuroanthropology/2011/02/22/john-shea-human-evolution-and-behavioral-variability-not-behavioral-modernity/>, acesso 03/05/11



## Protein Evolution



Source: <http://www.rsc.org> , 03/05/11

**“The present state of the nations is the result of the accumulation of all discoveries, inventions, improvements,..., of all generations which have lived before us, ...” (List, 1904, *The National System of Political Economy*)**

## Evolution in the Brazilian aircraft models



Source: <http://www.embraer.com.br>, acesso 03/05/11

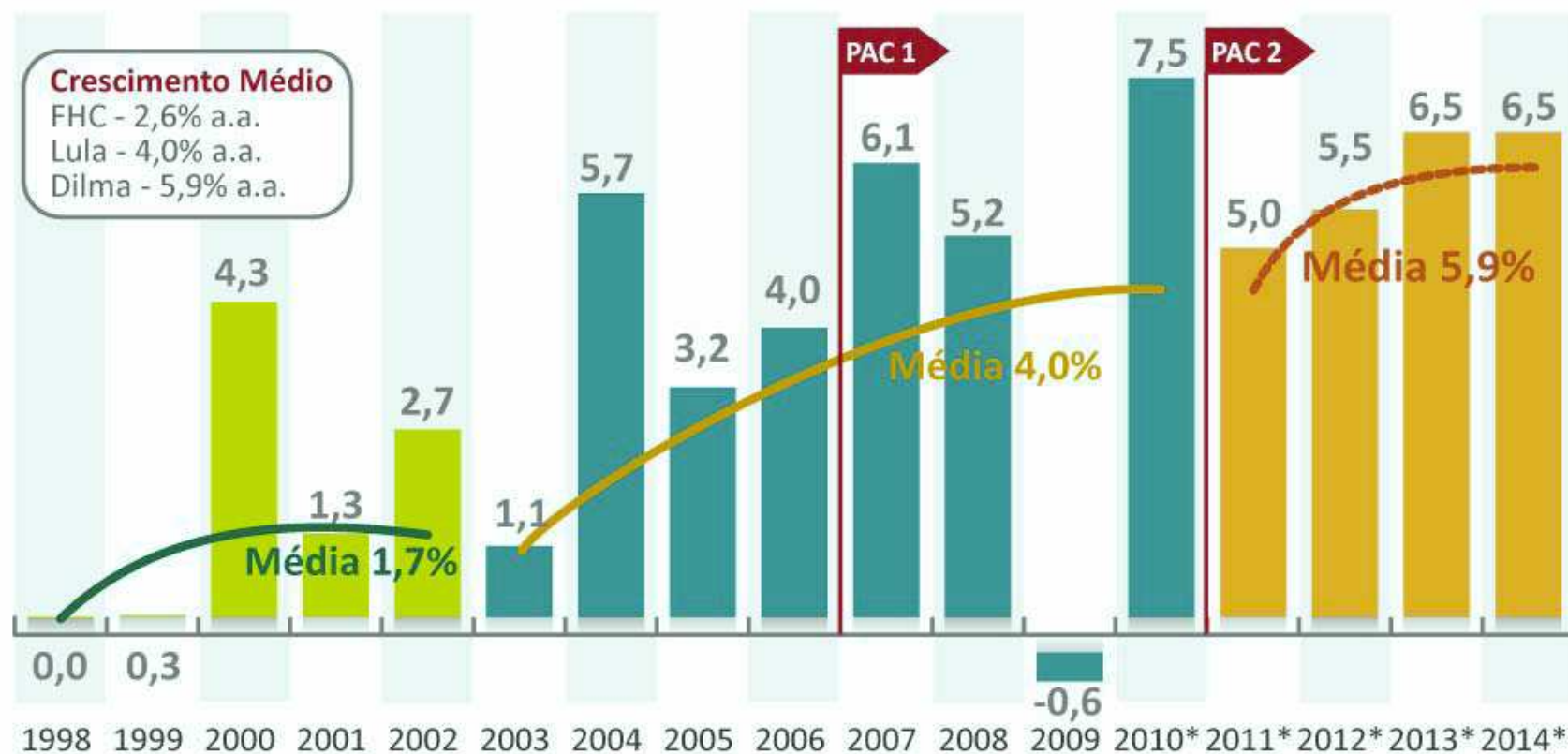
Ministério do  
Desenvolvimento, Indústria  
e Comércio Exterior

GOVERNO FEDERAL  
**BRASIL**  
PAÍS RICO E PAÍS SEM POBREZA

# How about the Brazilian industrial policies?

# GDP evolution

Growing faster (% per year)



Source: Ministry of Finance. Data: IBGE



# Increasing investment rates (% per year)

Investment rates will increase from 19% of GDP to 24% until 2014

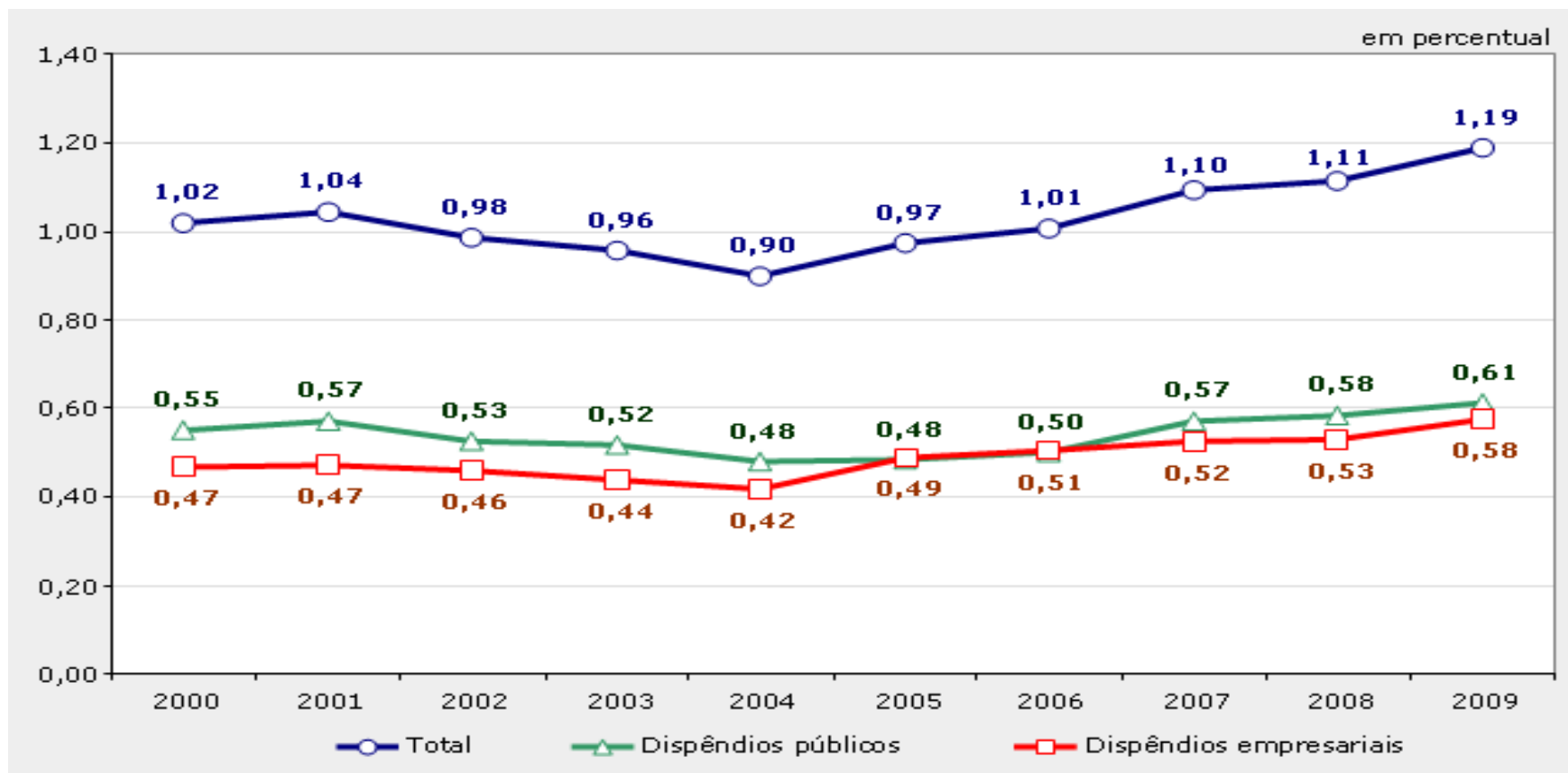


Source: Ministry of Finance. Data: IBGE

# Investment R&D (% PIB)



Investment rates increased from 1,02% of GDP to 1,19%



Source: Ministry of Science and Technology , <http://www.mct.gov.br>, acesso 03/05/11.

# Leader and Newcommer's firms



## Number of firms and their characteristics - 2008

	<i>Leader</i>	<i>Followers</i>	<i>Newcommers</i>	<i>Fragiles</i>
<b>No. of firms</b>				
Total (N)	1184	9791	375	20250
Brazilian ownership (N)	798	8425	368	20100
Foreign ownership (N)	386	1366	7	150
<b>Characteristics</b>				
Employment (N)	1075	273	121	79
Turnover (MI R\$)	765,37	79,35	20,08	6,77
Cost of industrial transformation - VTI (MI R\$)	300,66	26,28	6,91	2,34
Exports (MI U\$)	64,18	5,76	0	0
Imports (MI U\$)	46,66	3,63	0,52	0,11
R&D/net sales revenue (%)	1,26	0,34	1,67	0,02
Medium wages of employees (R\$/month)	3047,90	1728,05	1417,79	940,79
Medium of formal education of employees (Years)	10	9	9	8
Average period of employment (number of months)	62	53	45	41

Source: PIA/IBGE, PINTEC/IBGE, Secex/MIDC, Rais/MTE. (\*) Firms with more than 30 employees.



# Rate of innovative firms (%)



Year	Nº of firms		Rate of innovative firms (%)
	Total	Innovative firms	
1998-2000	72.005	22.698	31,5
2001-2003	84.262	28.036	33,3
2003-2005	91.055	30.377	33,4
2006-2008 (*)	100.496	38.299	38,1

Source: IBGE, PINTEC. (\*) Edition and recycling is no longer accounted due to the new Classificação Nacional de Atividades Econômicas – CNAE 2.0, used by PINTEC/IBGE.

# Positive perspectives on investment



## ✓ Energy

✓ Oil & Gas – pre-salt

✓ Electric energy – investments in infrastructure

✓ Environment, sanitation and sewerage

✓ Logistics and build construction

✓ Educational and S&T infrastructure - government

✓ R&D – business enterprises

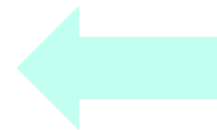
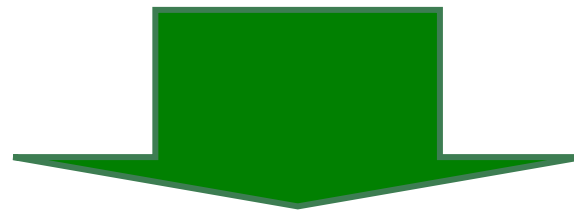
## Federal Government:

**Goal is to increase the connection between  
the Industrial Policies and the S, T & I  
policy, among other policies**

# Policy for the Development of Production (PDP) - main challenge



**Strengthening the capability to compete by the Brazilian enterprises, considering the level of development in their diverse production systems**



2008 -2010

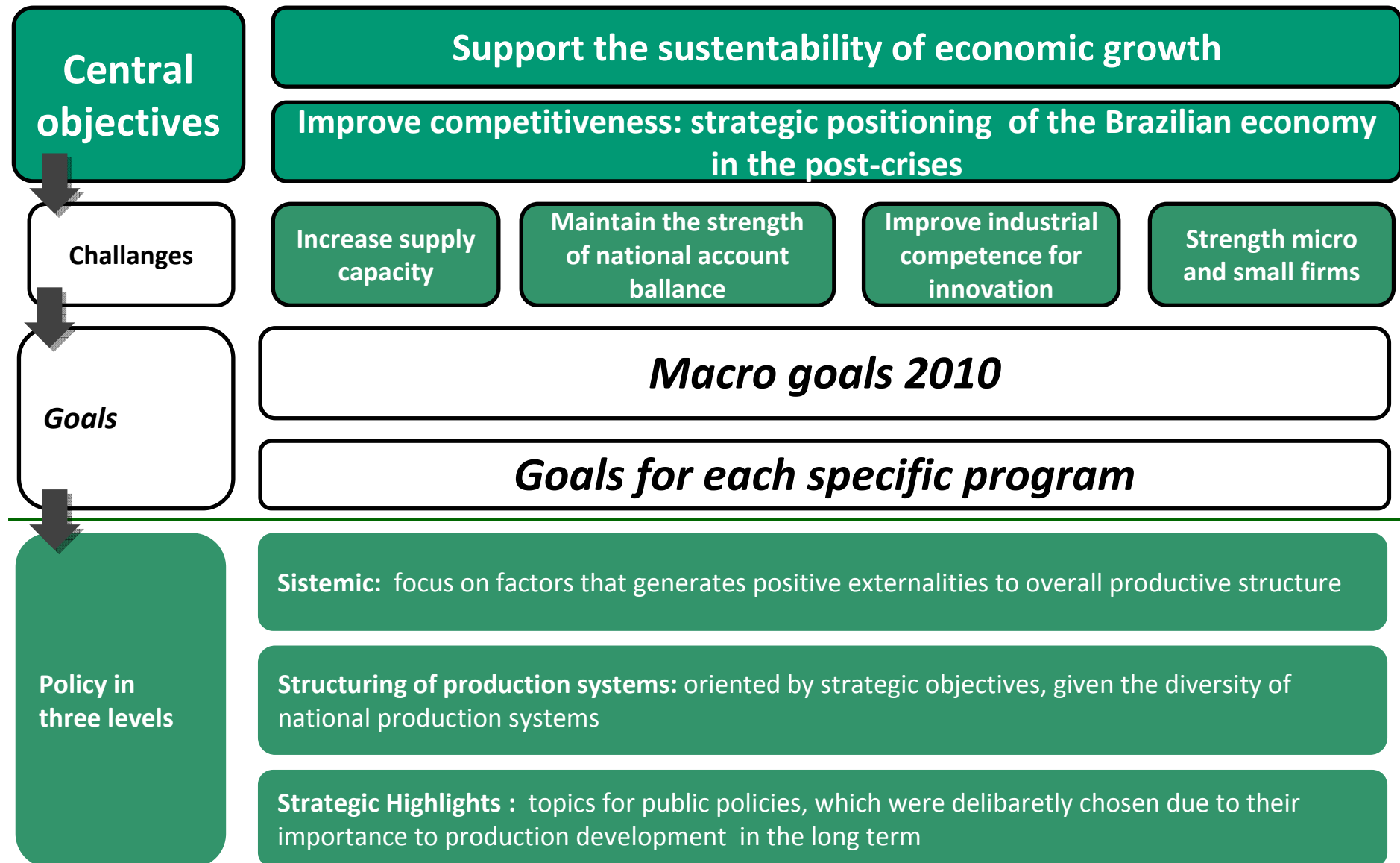
**Policy with different geometries / focus**

**Strengthening leadership by sectors in which Brazil has already a leader position**

**Accumulate and accelerate the development of competencies by knowledge intensive sectors**

**Strengthening traditional sectors**

# PDP – policy summary





## 425 measures implemented: 99% operational

- 29% financing and investment
- 31% technical support
- 26% taxation
- 8% regulation
- 6% commercial defence
- 41% macro goal investment
- 29% macro goal exports
- 20% macro goal innovation (investment R&D)
- 10% macro goal strengthening micro and small firms

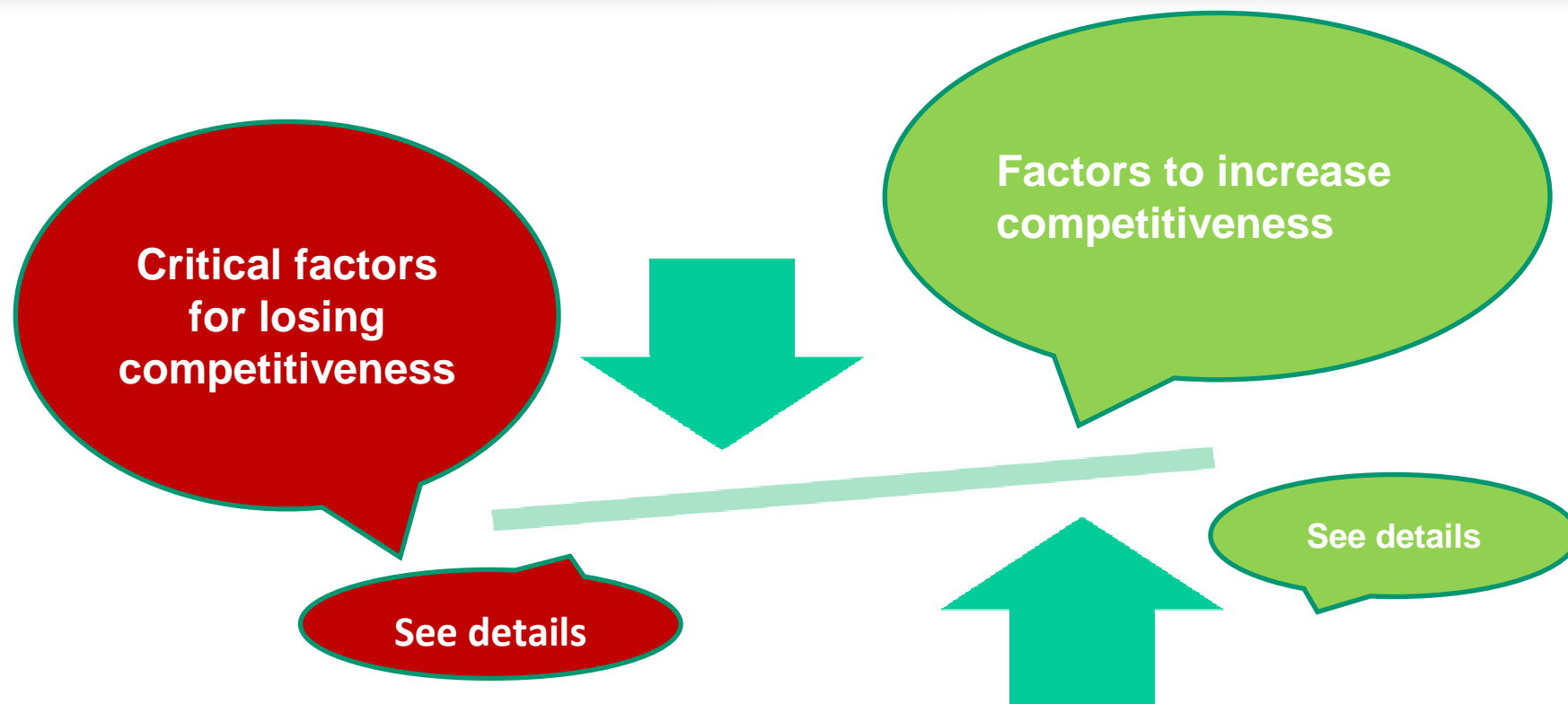
## Policy for the Competitiveness Development - PDC (2011/2014 )

**Challenge:** sustain the Brazilian economic growth in the new level of potential GDP, under the new external restrictions and apparently loss of general competitiveness in the global markets (competition with Asia, ex. China)

**Focus:** investment in innovation (technological, organizational and corporative) and maintain the efforts to increase investments in the production capacity

**Keywords:** investment, innovation and competitiveness

# Determinant factors to elaborate the new industrial policy



## Critical factors for losing competitiveness

- Reduction in various production chains, threatened by imports (competitive or unfair);
- Deterioration at exports basket with the reduction of relative participation at manufactured goods and small participation of services (mainly technical / technological – non-factors)
- slow progression in the competencies for innovation at the manufacturing structure.



- Growth of a group of Brazilian companies with high level of competencies for innovation = can faster diffuse innovation to the overall economy – making the bridge between academic research and products (goods and services);
- Business opportunities:
  - sustainable energy;
  - defence, aerospace, health complex and broadband infrastructure;
  - World Cup (2014), Olympic Games (2016)

**Factors to win  
competitiveness**





## Policy challenges: increase cooperation & coordination



- Strength coordination efforts to optimize government expenditure at the innovation environment (national, regional, sectoral and technological innovation systems)
- Connection between industrial, ST&I, infrastructure, energy, health, defence, foreign trade and macro economic policies
- Monitoring and evaluation = improve measures and faster answer to environment challenges

**Increase efficiency  
of public policies**



## Policy challenges: increase cooperation & coordination



- Strength collaborative efforts and interaction – academic research agenda each time more connected to the society and future industrial development needs – value creation to creativity and people's mindset for solving problems and taking opportunities leads to a more equal society

**Increase pace of  
innovation by industrial  
firms – value creation**



# Thank you!

**Rosane Argou Marques**

rosane.marques@abdi.com.br

+55 61 3962 8749

www.abdi.com.br