

# FCT

Fundação para a Ciência e a Tecnologia

MINISTÉRIO DA EDUCAÇÃO E CIÊNCIA

## **Support of Portuguese research institutions**

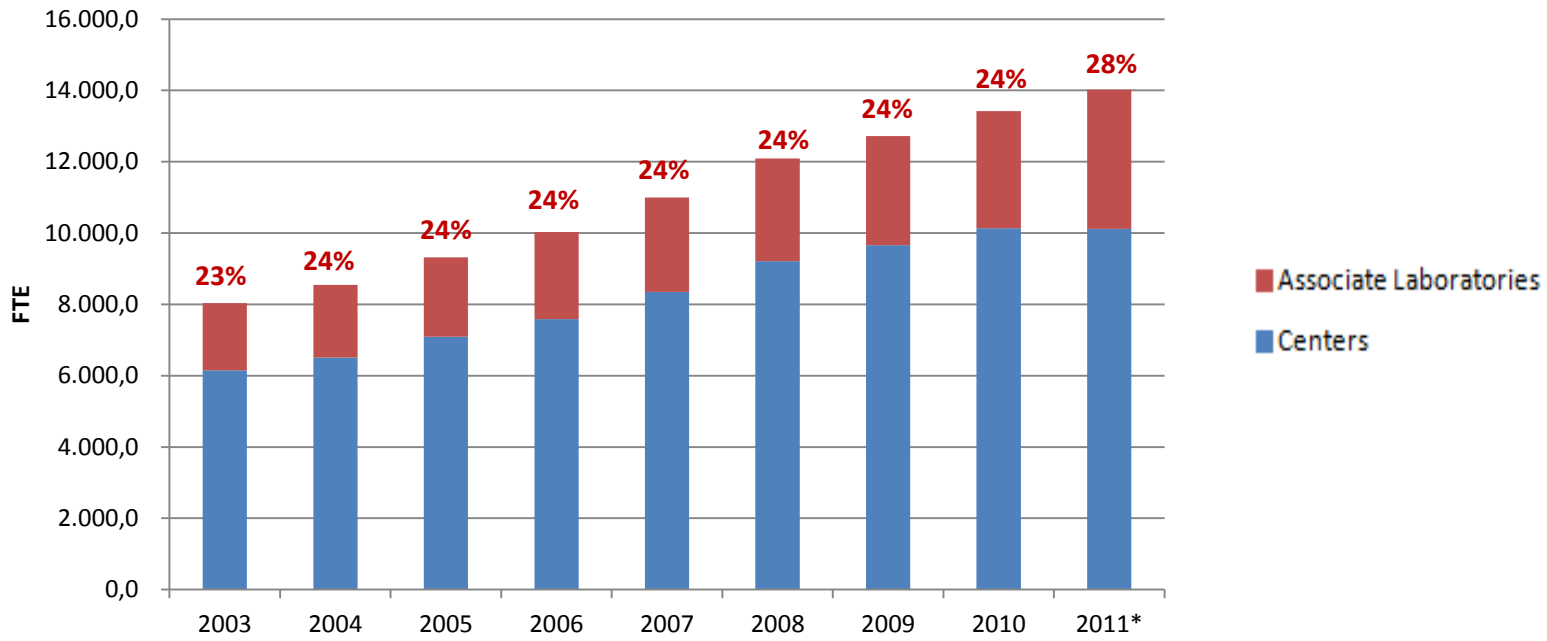
Miguel Seabra

# Index

---

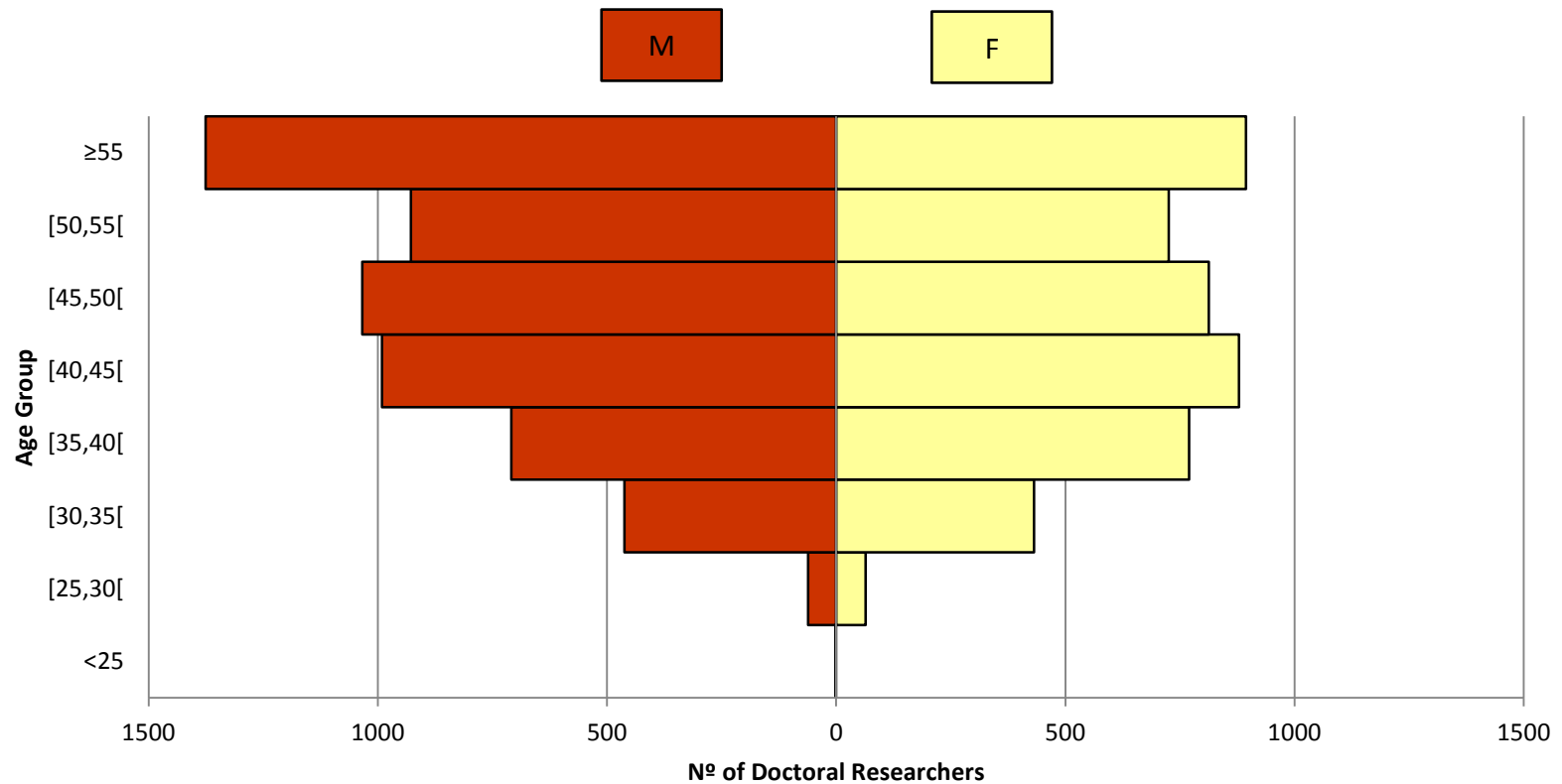
- Current Portuguese Situation: LA vs. centers
  - International Benchmarking : DFG vs FCT  
*Food for Thought*
  - The Way Forward : Future Funding Principles  
and Organisation of the R&D network
-

# R&D Institutions – Researchers (FTE) 2003-2011



\* Provisional  
Source: Fundação para a Ciência e a Tecnologia, Conselho Directivo, April 2012

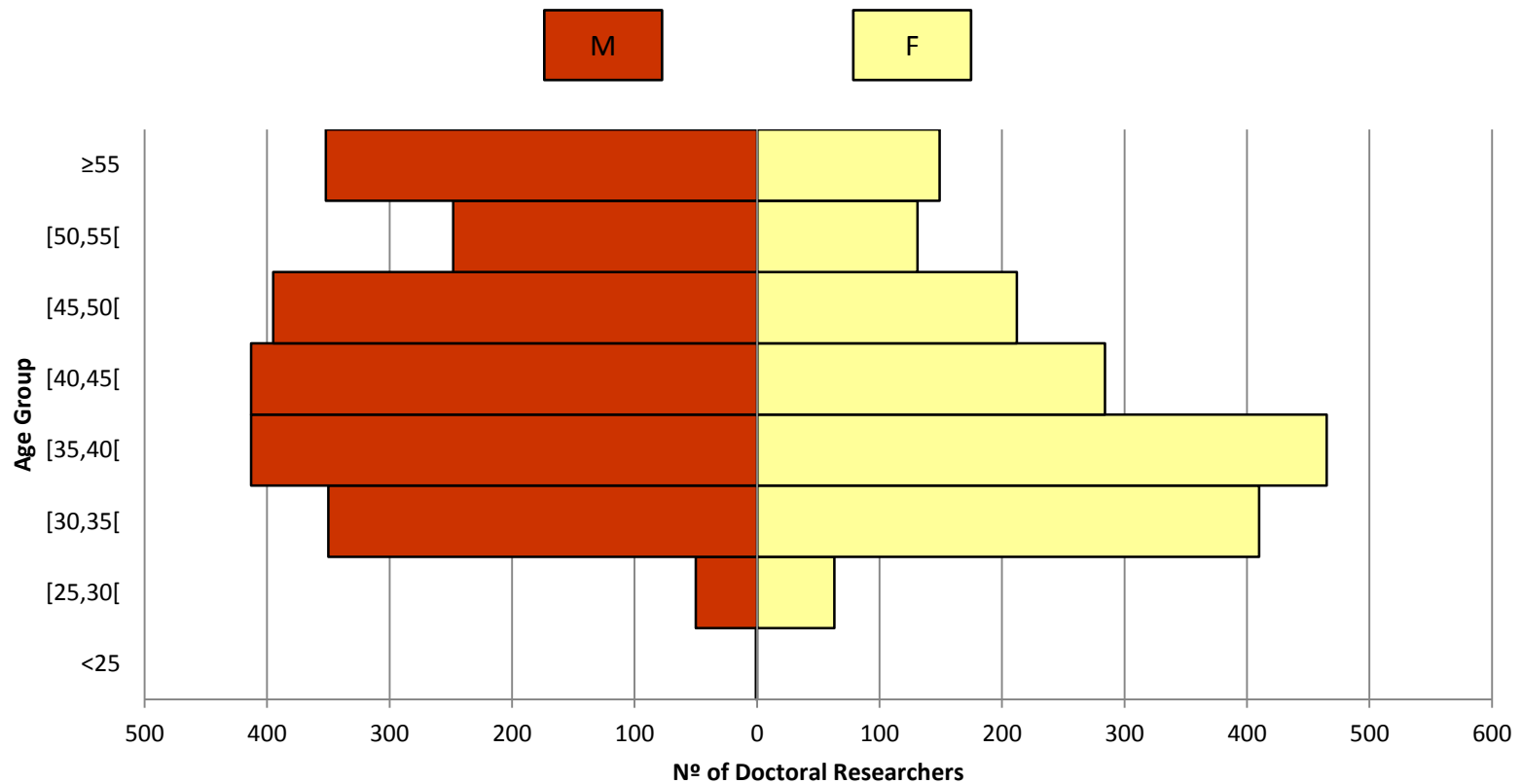
# R&D Centers – FTE by Age and Sex 2011\*



\* Provisional

Source: Fundação para a Ciência e a Tecnologia, Conselho Directivo, April 2012.

# LA – FTE by Age and Sex 2011\*

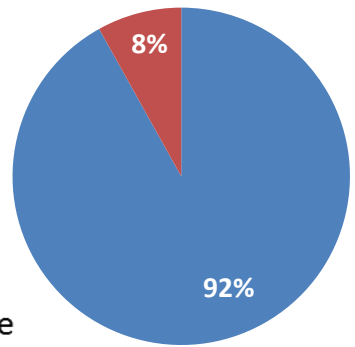


\* Provisional

Source: Fundação para a Ciência e a Tecnologia, Conselho Directivo, April 2012.

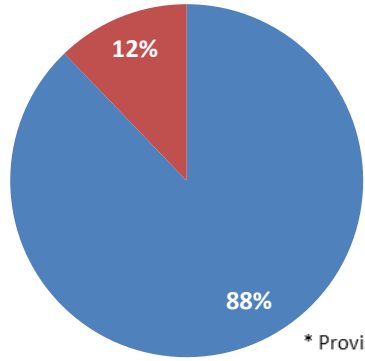
# FTE by Nationality – 2011\*

## Centers

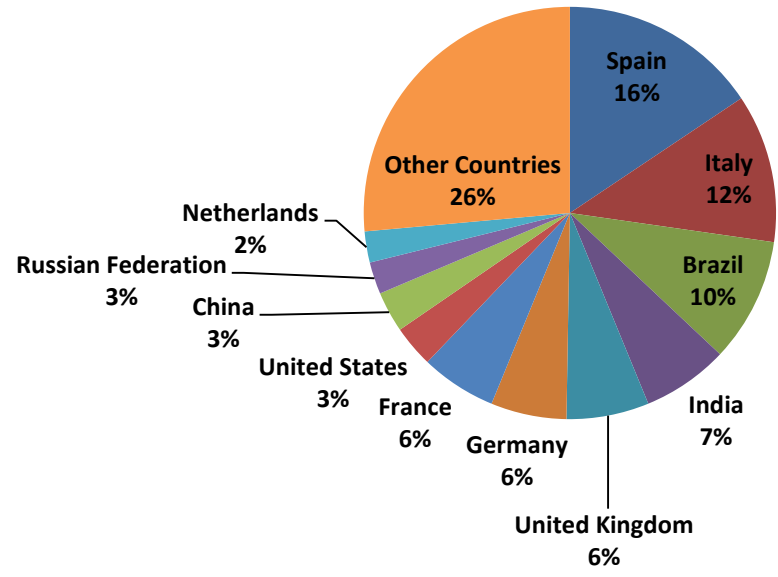


■ Portuguese

## LA



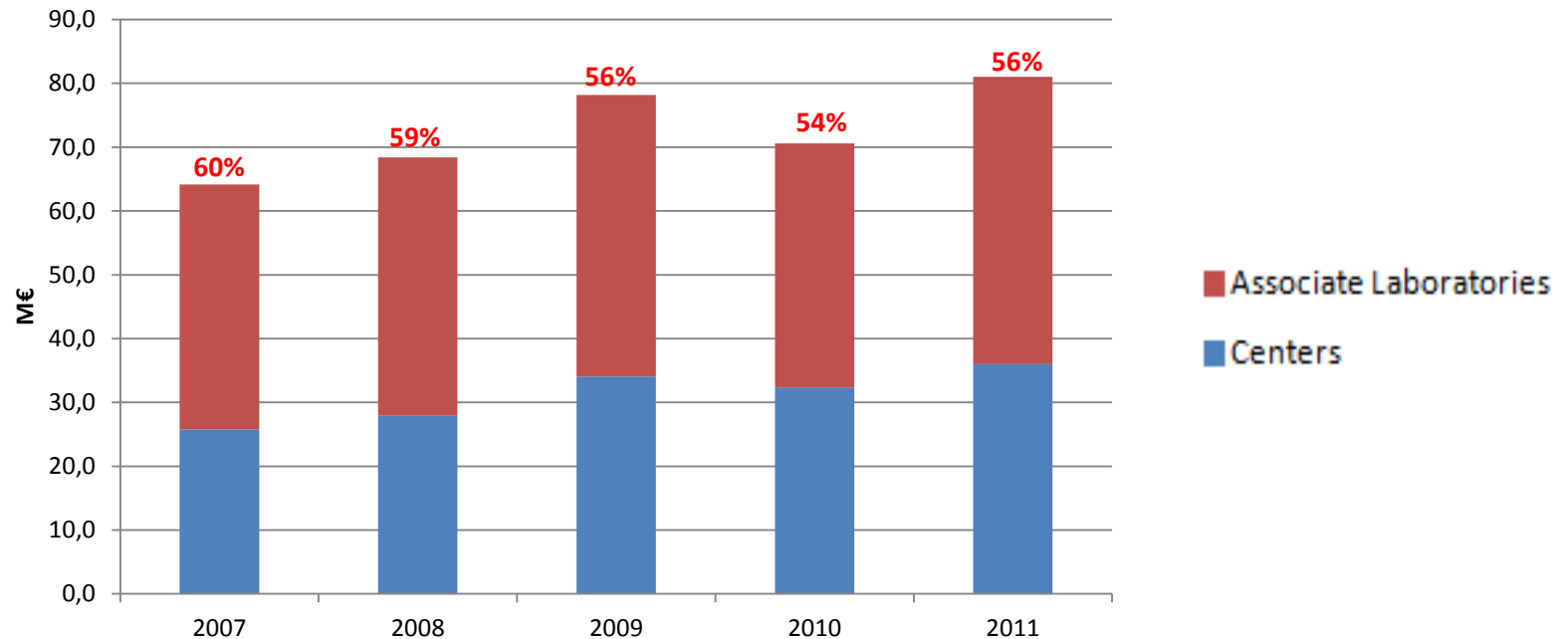
■ Foreign



\* Provisional

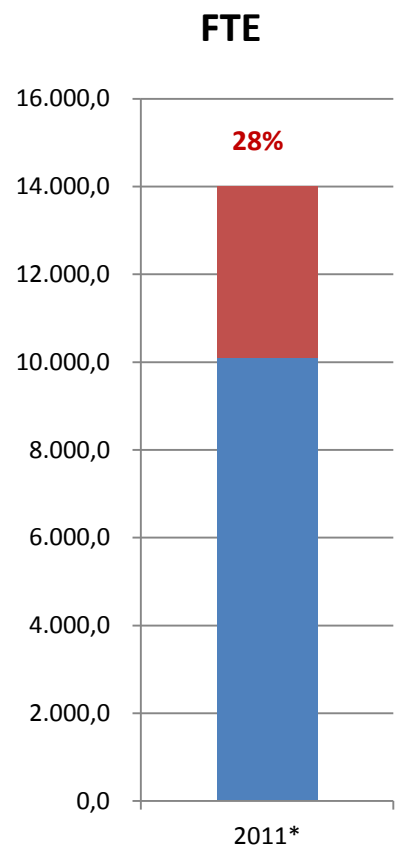
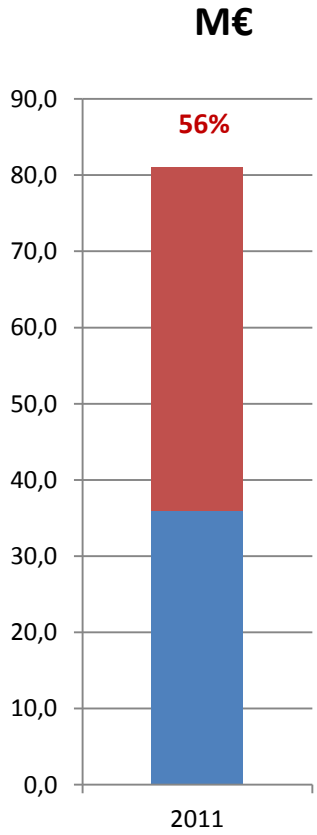
Source: Fundação para a Ciência e a Tecnologia, Conselho Directivo, April 2012

# R&D Institutions – Approved funding 2007-2011



Source: Fundação para a Ciência e a Tecnologia, Conselho Directivo, April 2012

# R&D Institutions – Funding vs FTE 2011



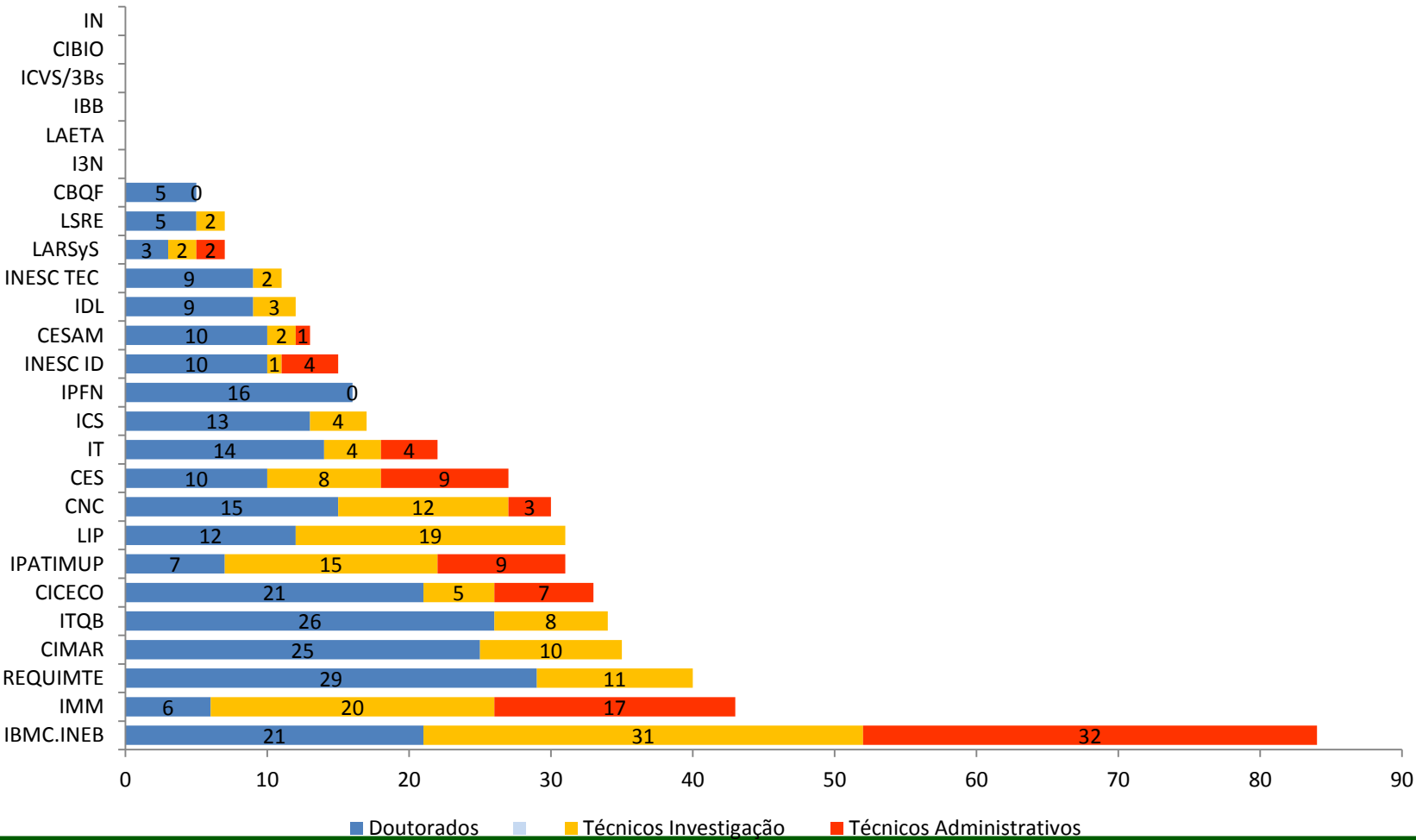
■ Associate Laboratories  
■ Centers

\* Provisional

Source: Fundação para a Ciência e a Tecnologia, Conselho Directivo, April 2012

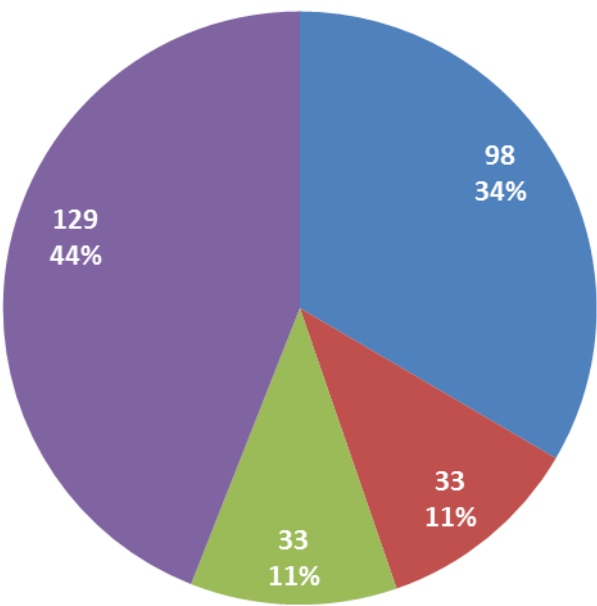


# FCT – Laboratórios Associados (contratos em 2010) N=882

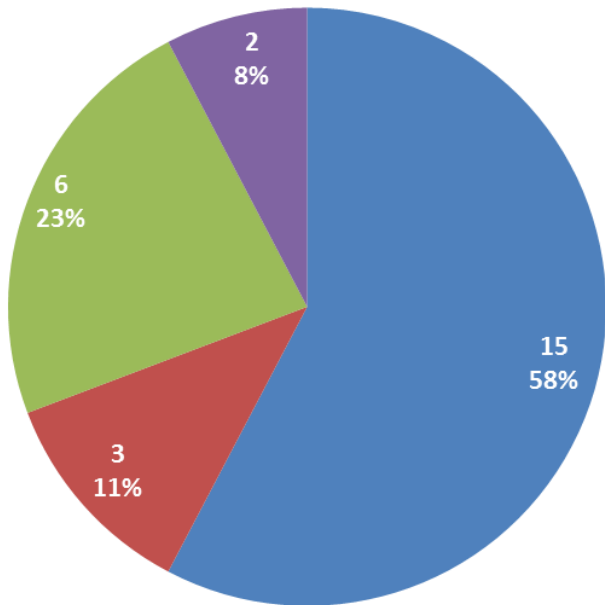


# R&D Institutions by Scientific Domain

## Centers



## LA

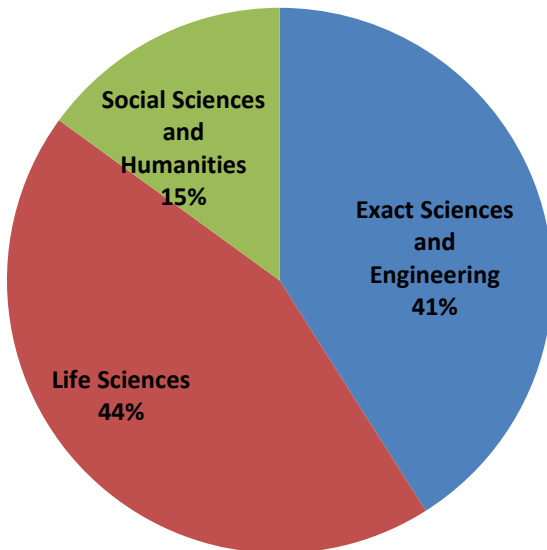


Source: Fundação para a Ciência e a Tecnologia, Conselho Directivo, April 2012

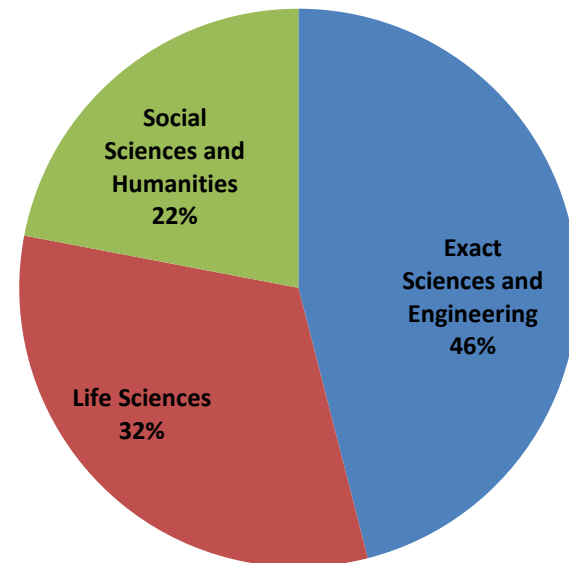
- Exact Sciences and Engineering
- Life and Health Sciences
- Natural and Environmental Sciences
- Social Sciences and Humanities

# Institutional funding by scientific area

**German Research Foundation - DFG  
Budget 2010**



**Fundação para a Ciência e a  
Tecnologia - FCT  
Budget 2010**



# Funding Programmes

---

## **DFG Individual Grants Programs (37,5%):**

- **Research Grants (Projects)**
- Scientific Networks (in Germany and abroad)
- **Investigator schemes:**
- Research Fellowships (abroad)
- Emmy Noether Programme (independent junior research groups)
- Heisenberg Programme (fellowships and temporary professorships)
- NIH-DGF Research Career Transition

## **FCT Individual Grants Programs:**

- **Research Grants (Projectos)**
  - **Investigador FCT**
-

# Funding Programmes

---

## **DFG Coordinated Programmes** (44,6%):

- **Collaborative Research Centres**
- Research Units
- Research Training Groups
- DFG Research Centres
- Priority Programmes

## **DFG Excellence Initiative** (12,3%):

- Graduate Schools
- Clusters of Excellence
- Institutional Strategies

## **FCT Coordinated Programmes:**

- Research Units
  - Fellowships and Studentships
  
  - No equivalent program
-

# Collaborative Research Centers

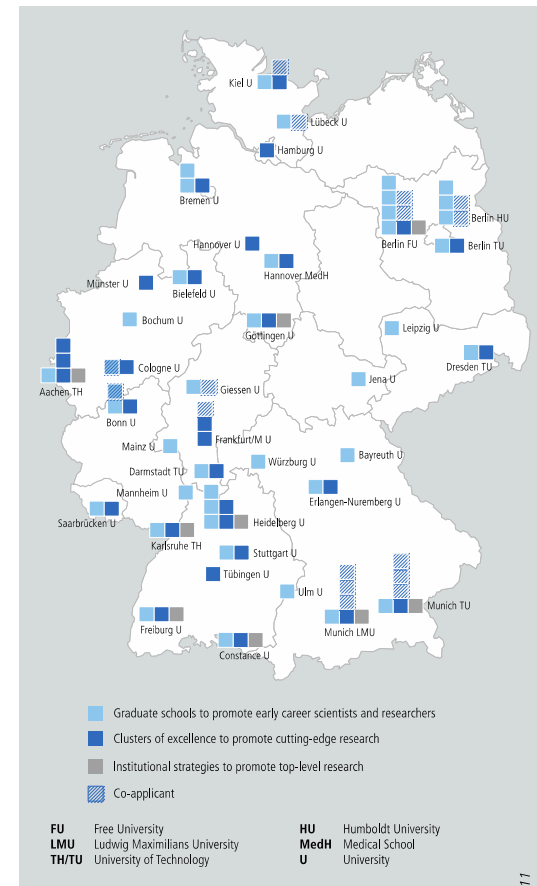
---

- Total: 234
    - ▶ 174 CRC – based at **single universities**
    - ▶ 60 CRC/Transregional based at **up to three universities**
  - Objectives:
    - ▶ To create temporary centers of excellence at universities
    - ▶ To promote interdisciplinary cooperation
  - Funding:
    - ▶ Up to **12 years maximum**
    - ▶ One funding term runs for 4 years (2 extensions after review)
-

# DGF Excellence Initiative

- 39 Graduate Schools - integrative institutions that train doctoral researchers within a broad scientific area
- 37 Clusters of Excellence - concentrate local resources at universities to establish a major research focus on the basis of existing structures, thereby enhancing scientific networking and cooperation among the participating faculties/institutions
- 9 Institutional Strategies - allow universities to develop and expand their areas of international excellence over the long term and to establish themselves as leading institutions in international competition

## Excellence Initiative at a Glance



# Clusters of Excellence – 4 examples

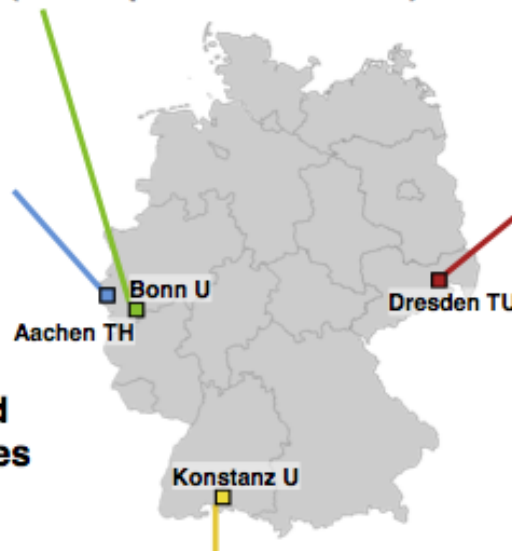
---

## **Bonn U: Mathematics: Foundations, Models, Applications**

- ▶ series of thematic priorities, multidisciplinary
- ▶ cooperation of international visiting professors with colleagues in Bonn e.g.:  
G. Faltings (Fields-Medal), R. Selten (Nobel prize economics)

## **Aachen TH: Integrative Production Technology for High-Wage Countries**

- ▶ researching the conditions for the successful production in high-wage countries
- ▶ building on the existing technology roadmap, incorporating business and industry cases with partner companies



## **Dresden TU: From Cells to Tissues to Therapies**

- ▶ research on human stem cells for controlled regeneration
- ▶ develop new therapies in the fight against Alzheimer's, Diabetes and Parkinson's

## **Konstanz U: Cultural Foundations of Social Integration**

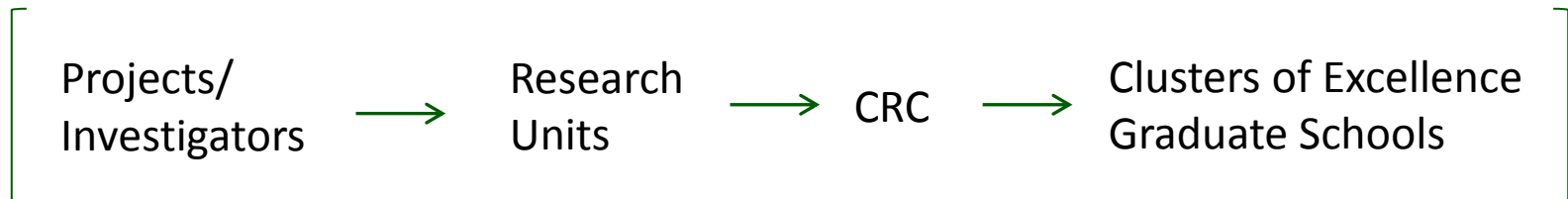
- ▶ social integration and disintegration on all social strata
  - ▶ the cluster offers scholarly exchange on a cross-disciplinary basis
-



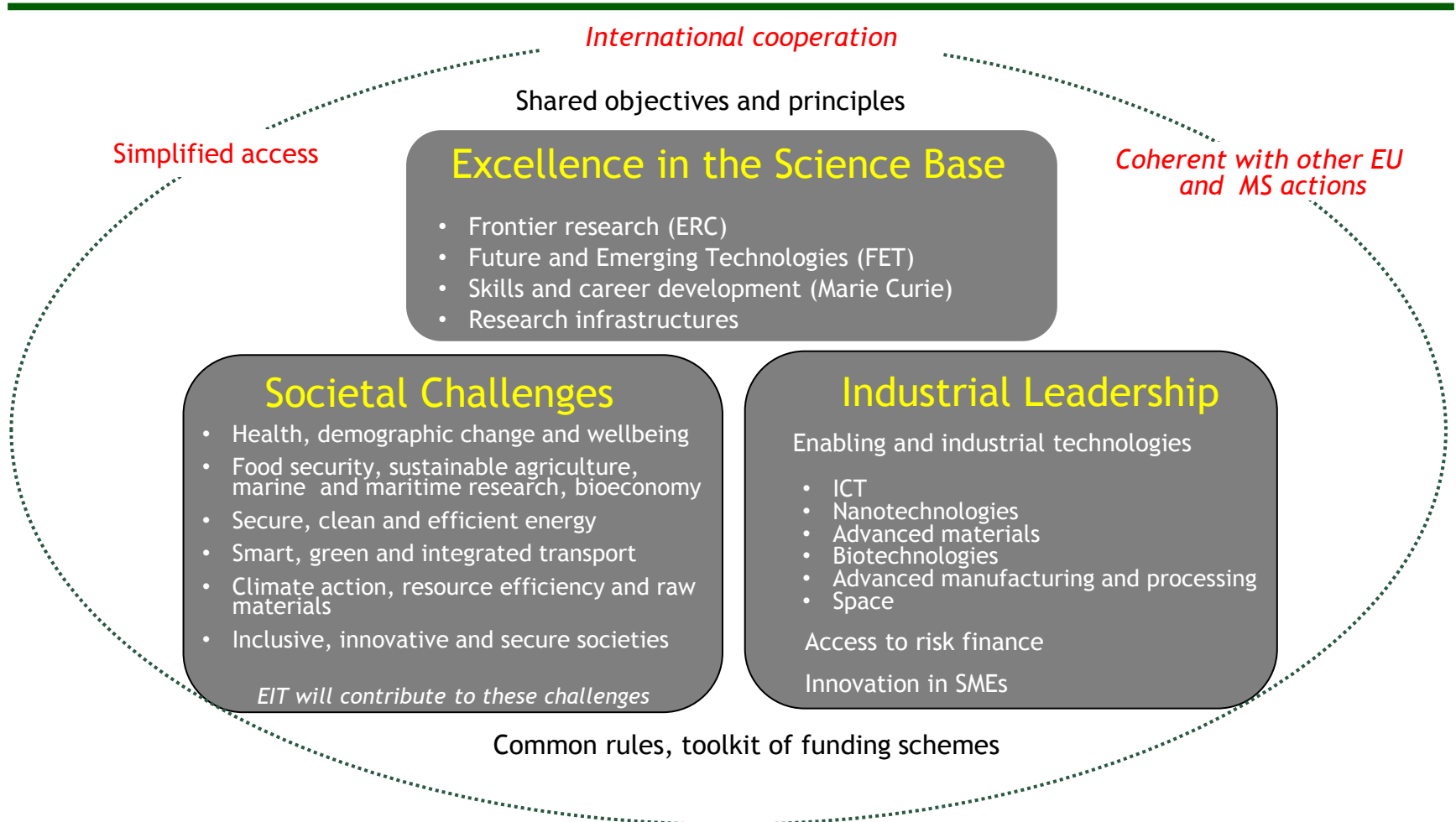
# Lessons from DFG

---

- Temporary (up to 12 years)
- Integrated
- Individual to Institutional Strategies



# Horizon 2020 - Structure



Budget under negotiation: 87.700 Mio €


# Horizon 2020 and FCT policy

---

- There will be a large number of instruments that will potentially require significant **national co-funding**
  - The COM proposes **co-funding schemes between research funding agencies** to promote the establishment of ERA (European Research Area)
  - What can FCT do to help the scientific community to be successful in European calls?
    - Greater alignment with the European programs, greater the probability of success
    - Investing in Excellence to become more competitive
-

# Future of FCT Institutional Funding - Principles

---

- Competitive
  - Diversity of models / Flexibility 
    - Small
    - Medium
    - LargeCenters
  - Strategic decisions driven by Excellence /  
International Relevance
-

# Future of FCT Institutional Funding

---

- Transitional Funding for 2013
  - Launching Call for Institutional funding in 2012 for funding from 2014
  - “Concurso de Ideias” vs. Current model of “Avaliação” = Future plans are critical component
-

# Future of FCT Institutional Funding

---

- Components of funding model:
    - ▶ Strategic funding as the major component
    - ▶ Incentives (leveraging) for European funding (FP7, H2020), international, private and other non-FCT research funding
-

# The Future of the National R&D System

---

- Consider the existing R&D network
  - Develop an excellent internationally competitive network of R&D Units
  - Smart specialization (Clusters of Excellence)
  - Focus on individuals, teams and creative environments
  - Promote internationalisation (networking and funding)
-

# Promoting Excellence

---

## Investing in excellence - preparing for tomorrow

(Aarhus Declaration, Aarhus 20th April 2012,

<http://www.excellence2012.dk/the-aarhus-declaration/>)

- The need to discuss **what** excellent research is, **why** it is important and **how** we should go about creating the right conditions for fostering and exploiting excellence at European level has never been more urgent. (Helga Nowotny. April 2012)
  - The role of Funding agencies:
    - Cultivating the fruits of curiosity
    - Symbioses between excellence and innovation
    - Promote creative environments
-



# FCT and the scientific community

---

- Ciência 2012 as the start of a dialogue between FCT and the community on the organisation of the R&D system
  - Email: [ciencia2012@fct.pt](mailto:ciencia2012@fct.pt)
  - Will meet again soon!
-