Support of Portuguese research institutions

Miguel Seabra
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- 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*

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

* Provisional
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

* Provisional
Source: Fundação para a Ciência e a Tecnologia, Conselho Directivo, April 2012
FCT – Laboratórios Associados (contratos em 2010) N=882

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<tr>
<th>Instituto</th>
<th>Doutorados</th>
<th>Técnicos Investigação</th>
<th>Técnicos Administrativos</th>
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Legenda: Doutorados, Técnicos Investigação, Técnicos Administrativos
R&D Institutions by Scientific Domain

Source: Fundação para a Ciência e a Tecnologia, Conselho Directivo, April 2012
Institutional funding by scientific area

German Research Foundation - DFG
Budget 2010

- Exact Sciences and Engineering: 41%
- Life Sciences: 44%
- Social Sciences and Humanities: 15%

Fundação para a Ciência e a Tecnologia - FCT
Budget 2010

- Exact Sciences and Engineering: 46%
- Life Sciences: 32%
- Social Sciences and Humanities: 22%

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

<table>
<thead>
<tr>
<th><strong>DFG Coordinated Programmes</strong> (44.6%)</th>
<th><strong>DFG Excellence Initiative</strong> (12.3%)</th>
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<tr>
<td>• Collaborative Research Centres</td>
<td>• Graduate Schools</td>
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<td>• Research Units</td>
<td>• Clusters of Excellence</td>
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<td>• Research Training Groups</td>
<td>• Institutional Strategies</td>
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<td>• DFG Research Centres</td>
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<td>• Priority Programmes</td>
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<tr>
<td>• Research Units</td>
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<td>• Fellowships and Studentships</td>
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<td>• No equivalent program</td>
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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
Clusters of Excellence – 4 examples

**Bonn U: Mathematics: Foundations, Models, Applications**
- series of thematic priorities, multidisciplinarity
- 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

**Excellence in the Science Base**
- Frontier research (ERC)
- Future and Emerging Technologies (FET)
- Skills and career development (Marie Curie)
- Research infrastructures

**Industrial Leadership**
- Enabling and industrial technologies
  - ICT
  - Nanotechnologies
  - Advanced materials
  - Biotechnologies
  - Advanced manufacturing and processing
  - Space
- Access to risk finance
- Innovation in SMEs

**Societal Challenges**
- Health, demographic change and wellbeing
- Food security, sustainable agriculture, marine and maritime research, bioeconomy
- Secure, clean and efficient energy
- Smart, green and integrated transport
- Climate action, resource efficiency and raw materials
- Inclusive, innovative and secure societies

*EIT will contribute to these challenges*

**Shared objectives and principles**
- Common rules, toolkit of funding schemes
- Coherent with other EU and MS actions
- International cooperation
- Simplified access

**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

- 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

• Will meet again soon!