



Inquérito ao Potencial Científico e Tecnológico Nacional  
Portuguese R&D Survey

## R&D Statistics in Business Enterprise Sector (BES) in Portugal: Methodology and Main results

Lisbon, 11<sup>th</sup> and 12<sup>th</sup> June 2015

Reunión Comité Técnico RICYT

# SUMMARY

- Framework
- Objectives
- Survey population
- Survey structure
- Statistical process
- Main publications
- Main results

# FRAMEWORK

- Official survey for the production of R&D statistics in Portugal
- Registered in National Statistic System - Law Nr. 22/2008 of May 13
- Periodicity: every two years from 1982 to 2007 and yearly from this year
- According to OECD and EUROSTAT methodological and conceptual criteria
- According to Implementing Regulation (EU) Nr. 995/2012 of October 26
- Frascati Manual (OCDE, 2002)

# OBJECTIVES

- Produce national R&D official statistics;
- Support the development of C&T policies;
- Support studies of national and international scientific community and other entities;
- Compare EU, OECD and other countries and analyze their evolution.

# SURVEY POPULATION

## Survey type

- Census
- Online

## Target population

- All enterprises identified as potential R&D performers in the country:
  - All NACE
  - All size class
  - Private and public
- Last survey (reference year 2013):  $\approx$  8.000 Enterprises

## Sources of information

- Previous R&D surveys;
- Applications for R&D projects financed by national entities (FCT, MEC, ME);
- E.U. funded R&D programs and other international funded programs;
- Applications for fiscal incentives for R&D projects;
- Community Innovation Survey - enterprises that declare to perform R&D activities;
- Enterprises registered with main activity NACE 72;
- Enterprises with investment in development (National accounts);
- Enterprises founded in technological parks (websites);
- Information released in press about enterprises that perform R&D activities.

# SURVEY STRUCTURE

Section I	• Identification and general information
Section II	• Research and Development (R&D) activities
Section III	• Human resources in R&D activities (Occupation, Degree, FTE, Sex)
Section IV	• Intramural R&D expenditures (Type of costs; Source of funds; Type of R&D; Region; FOS; SEO; Product field)
Section V	• Extramural R&D expenditures (Hiring and Financing)
Section VI	• Biotechnology R&D activities
Individual form	• Registration of biographic information of HR in R&D activities, with degree $\geq$ ISCED 5B

# STATISTICAL PROCESS

## Launch

- R&D enterprises database update;
- Survey update;
- Methodological documents;
- Registration in Statistics Portugal;
- Online form/application update.

## Data collection

- Support to enterprises: clarification of doubts, phone/email contacts;
- Send remind letters/e-mails.

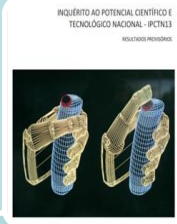
## Data validation

- Verification of consistency between questions and sections;
- Comparison with answers of previous years;
- Data estimation.

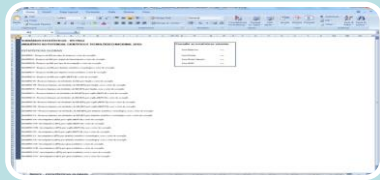
## Data report

- Provisional data (T+10);
- Final data (T+18).

# MAIN PUBLICATIONS



Main results (provisional and final)



R&D indicators



Rankings of enterprises with more expenditure on R&D activities in Portugal



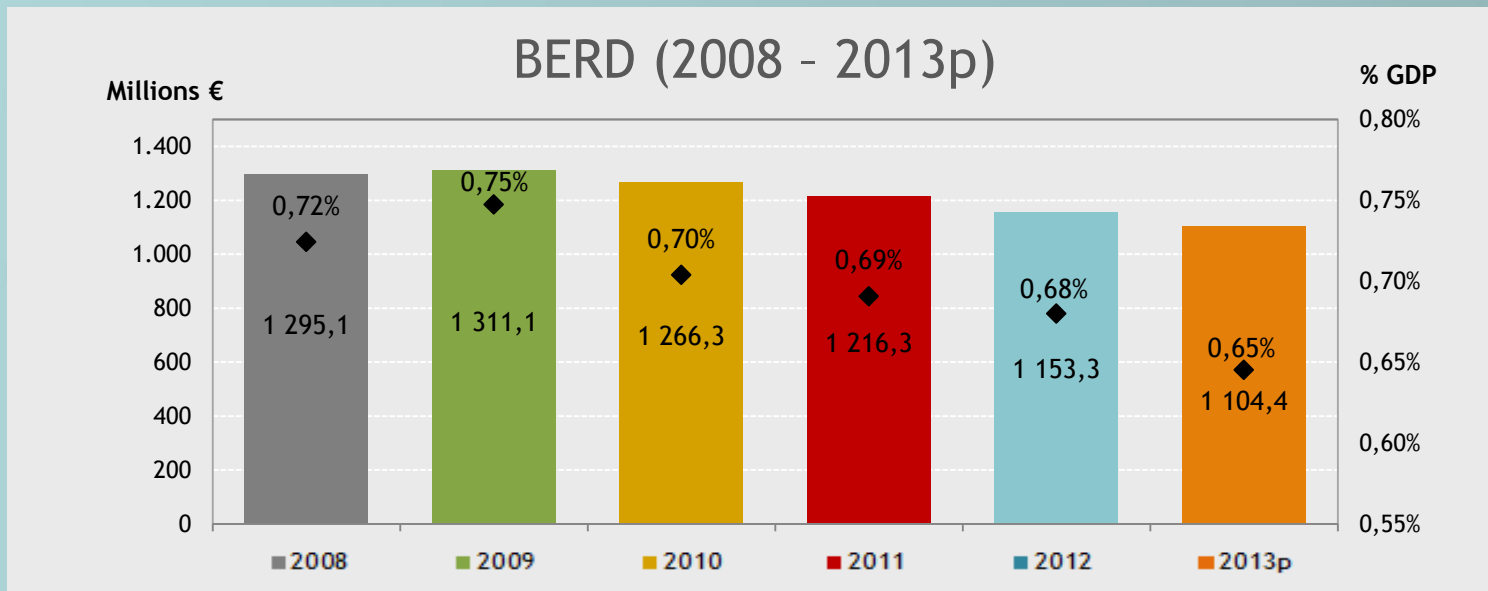
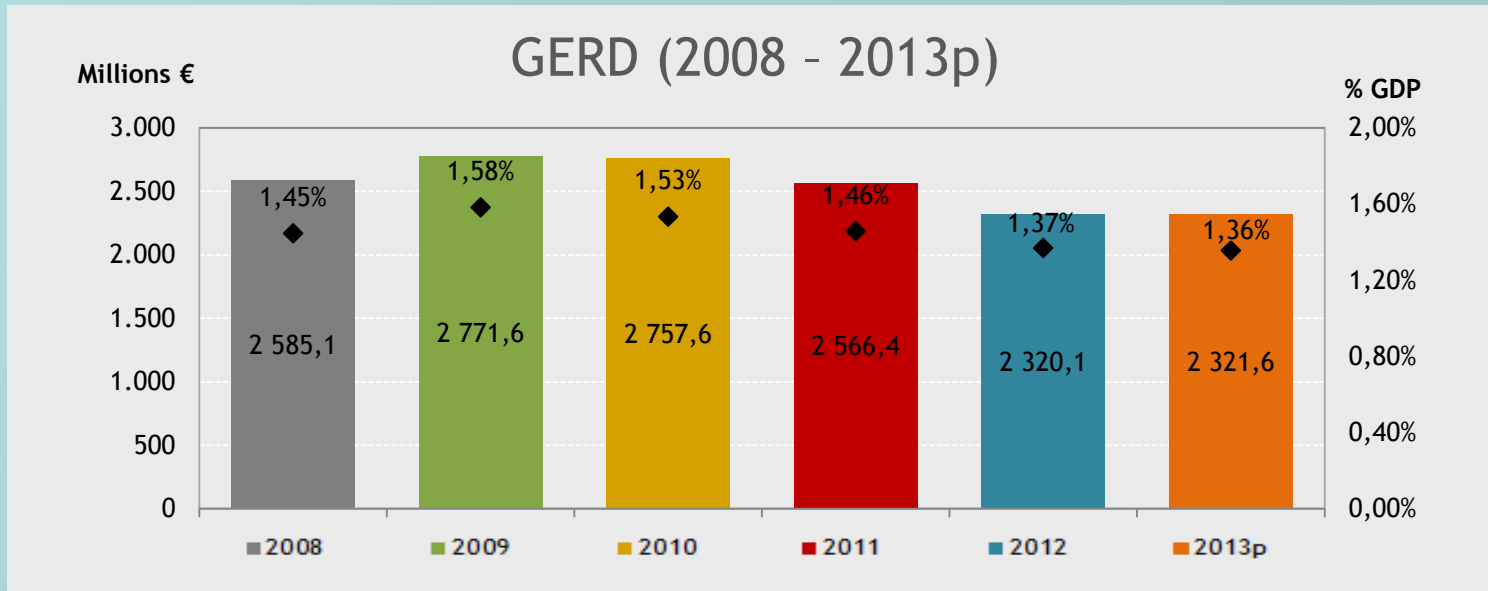
Directory of R&D enterprises



R&D Survey - 30 years of R&D in Portugal: global data in a historical perspective of 1982-2012

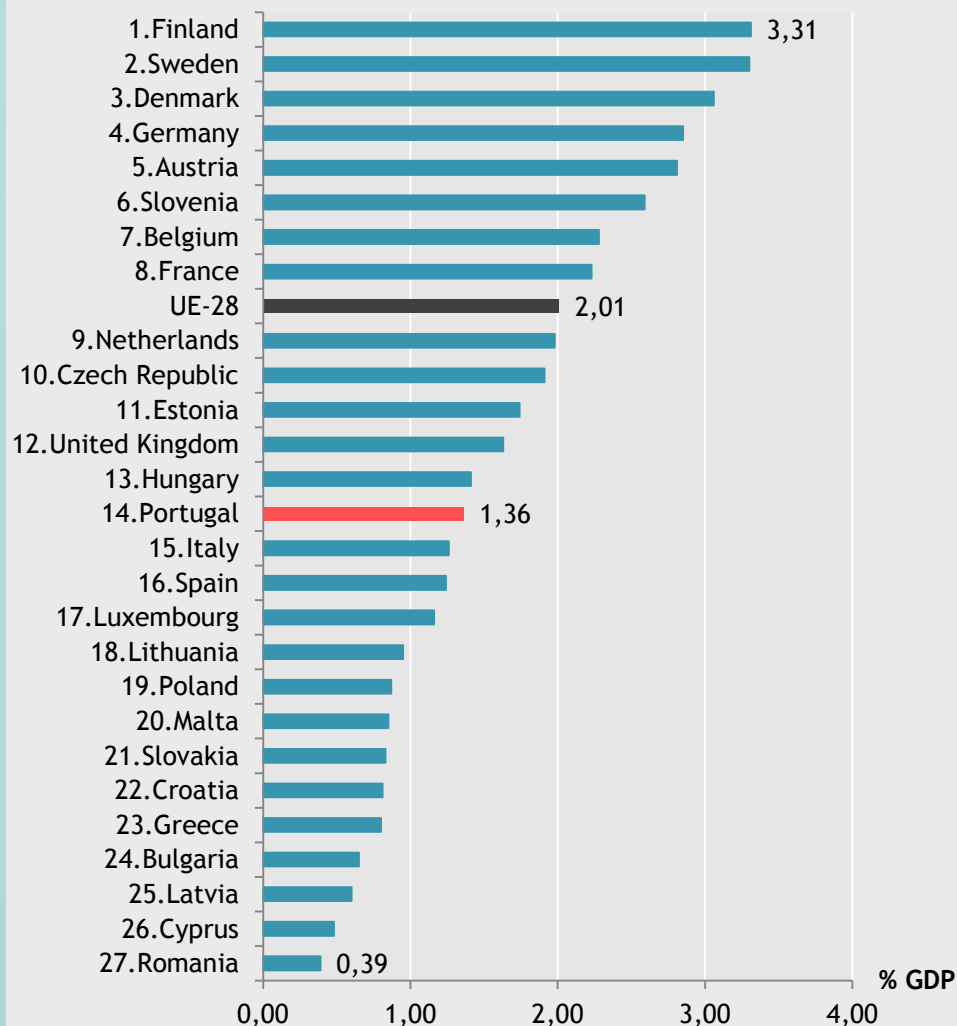


# MAIN RESULTS - Expenditure

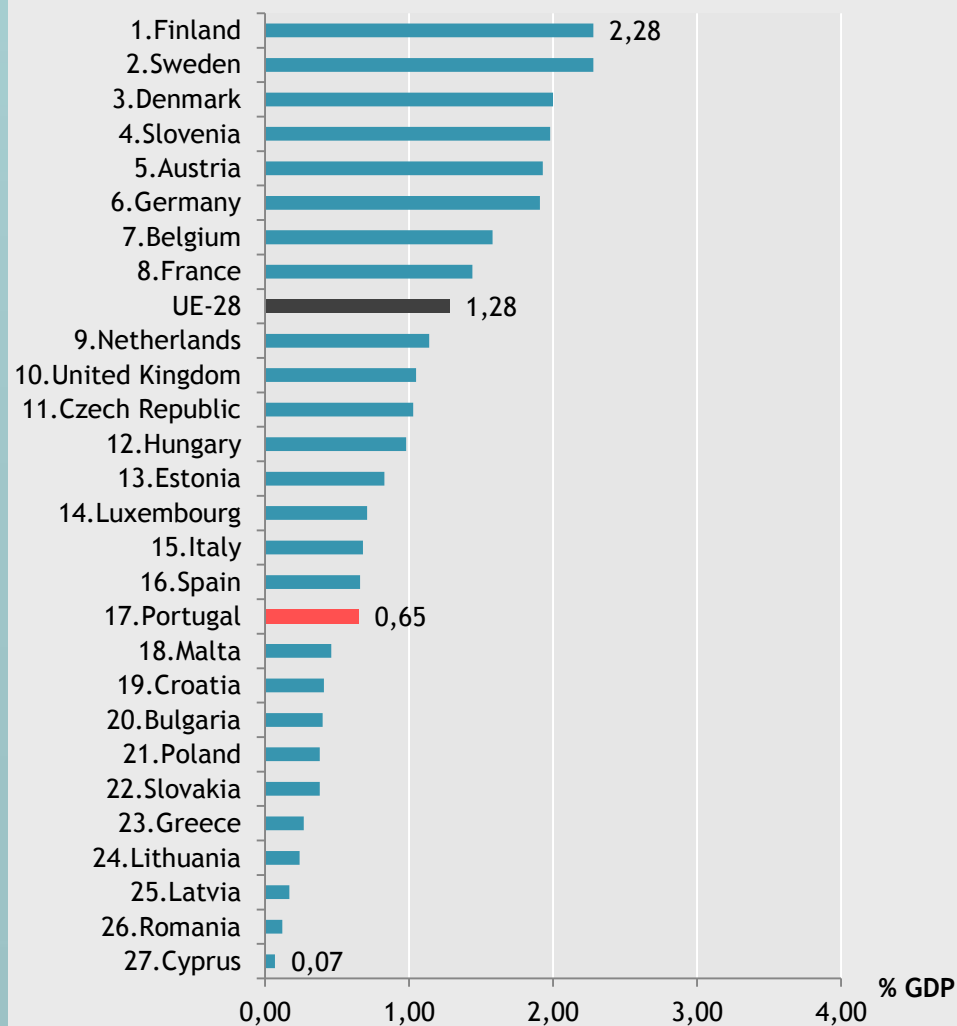


# International comparison (2013p)

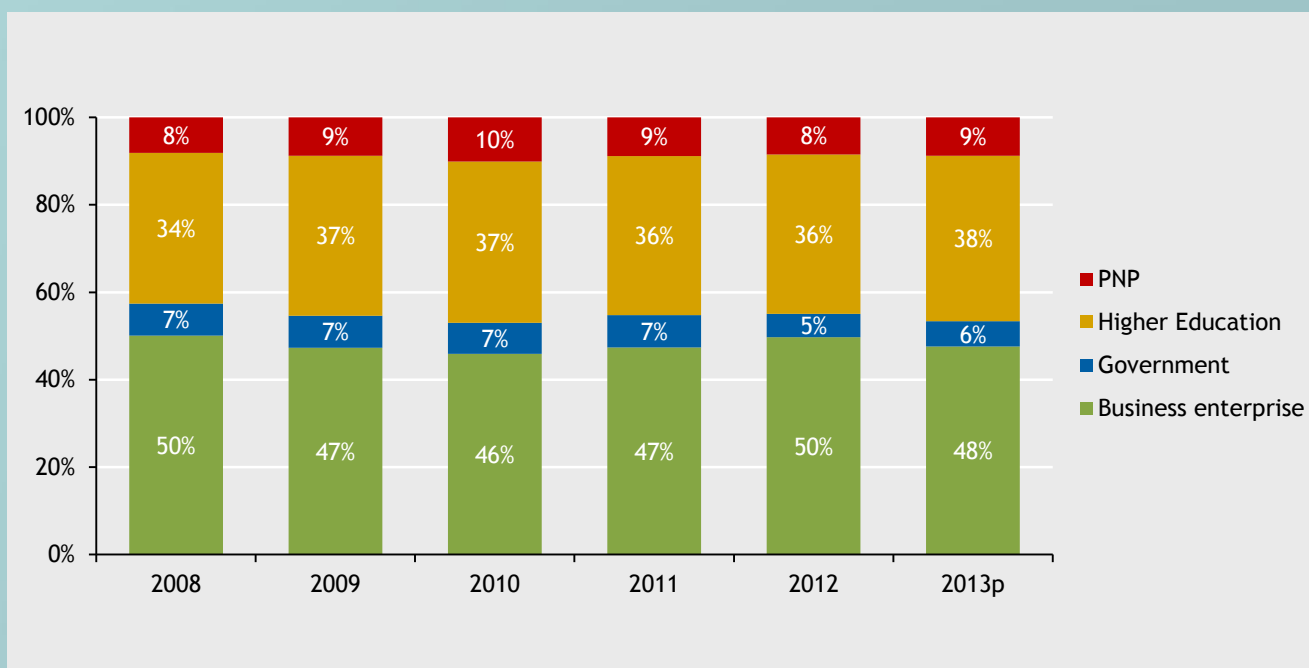
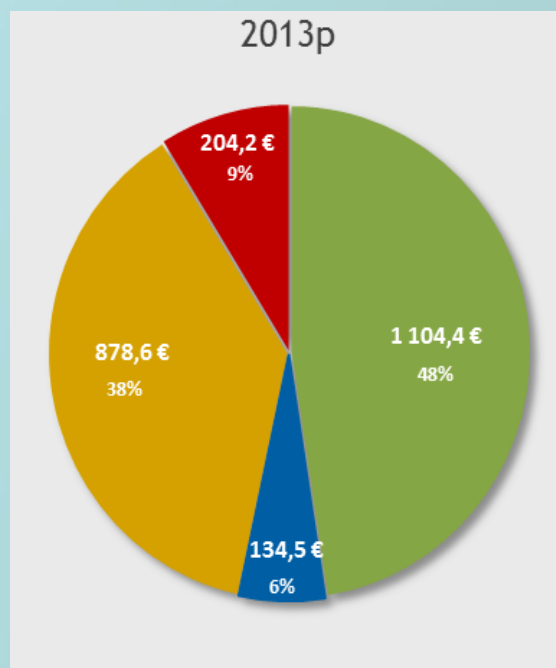
## GERD as % of GDP



## BERD as % of GDP



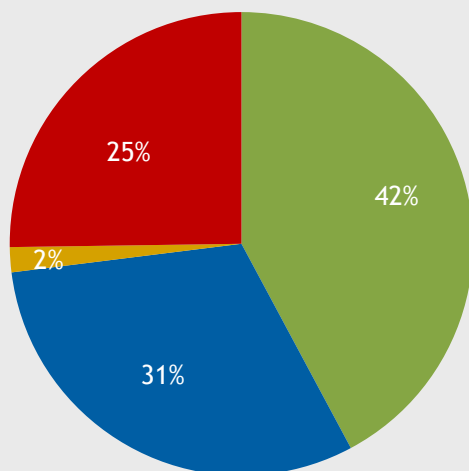
## GERD by sector of performance (2008-2013p)



Note: p) provisional data  
Source: DGEEC/MEC, IPCTN

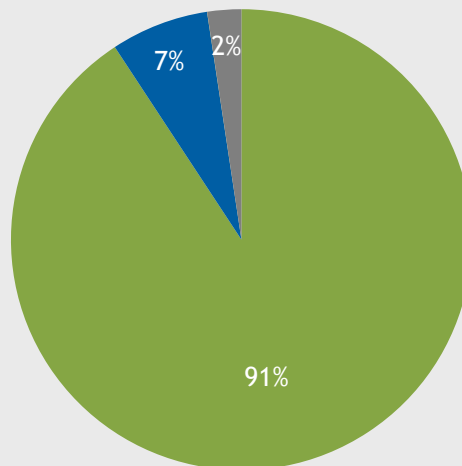
## BERD 2012 (1 153 M€) by:

### Type of costs (%)



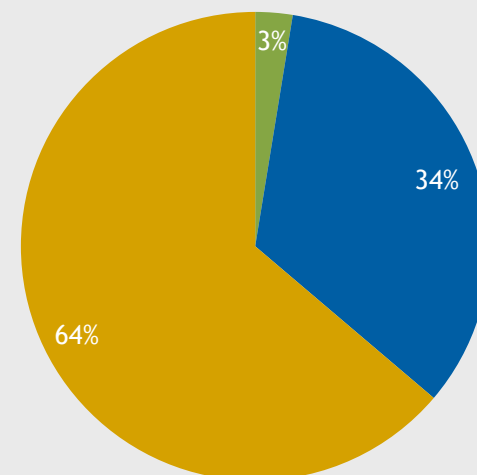
- Labour costs
- Other current costs
- Land and buildings
- Instruments and equipment

### Source of funds (%)



- Business enterprises
- Government
- Higher Education
- PNP
- Foreign

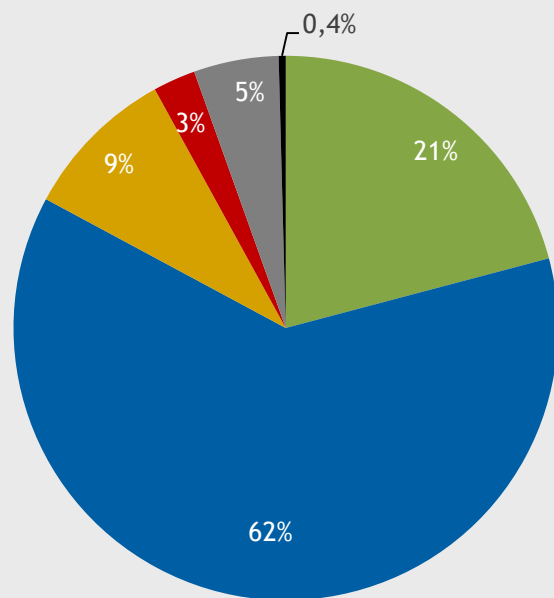
### Type of R&D (%)



- Basic research
- Applied research
- Experimental development

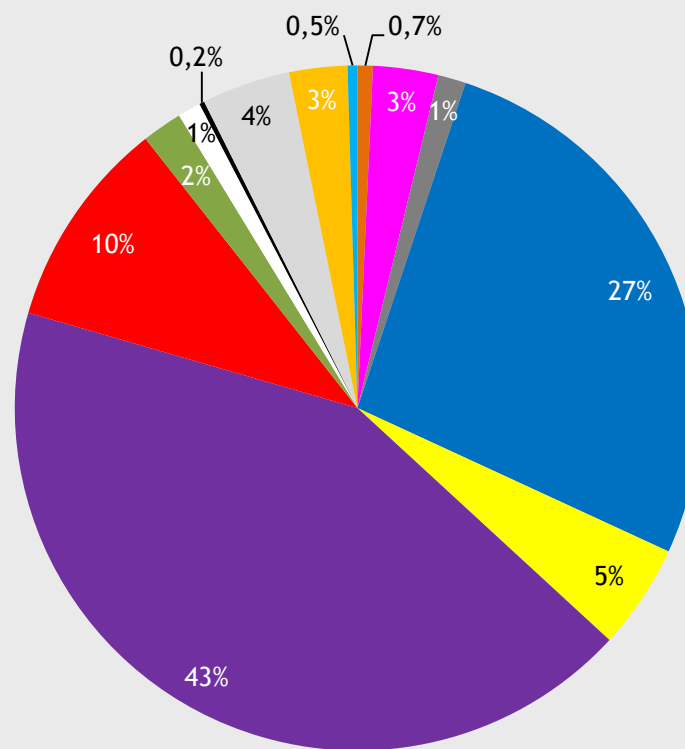
# BERD 2012 (1 153 M€) by:

## Field of science (%)



- Natural sciences
- Engineering and technology
- Medical and health sciences
- Agriculture sciences
- Social sciences
- Humanities

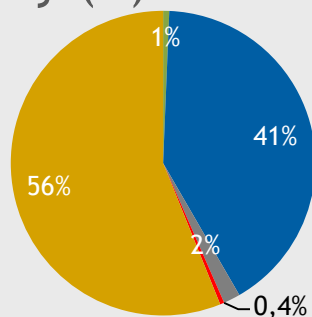
## Socio-economic objectives (%)



- Exploration and Exploitation of the Earth
- Environment
- Exploration and Exploitation of Space
- Transport, telecommunication and other infrastructures
- Energy
- Industrial production and technology
- Health
- Agriculture
- Education
- Culture, recreation, religion and mass media
- Political and social systems, structures and processes
- General advancement of knowledge
- Defence

# BERD 2012 (1 153 M€) by:

## Industry (%)



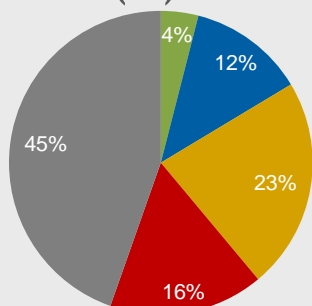
■ Agriculture, forestry and fishing and Mining and quarrying

■ Manufacturing

■ Energy

■ Construction

## Size class (%)



■ <= 9

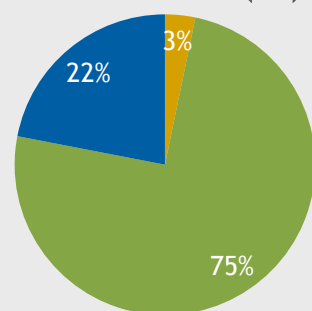
■ 10 to 49

■ 50 to 249

■ 250 to 499

■ >= 500

## Origin of share (%)

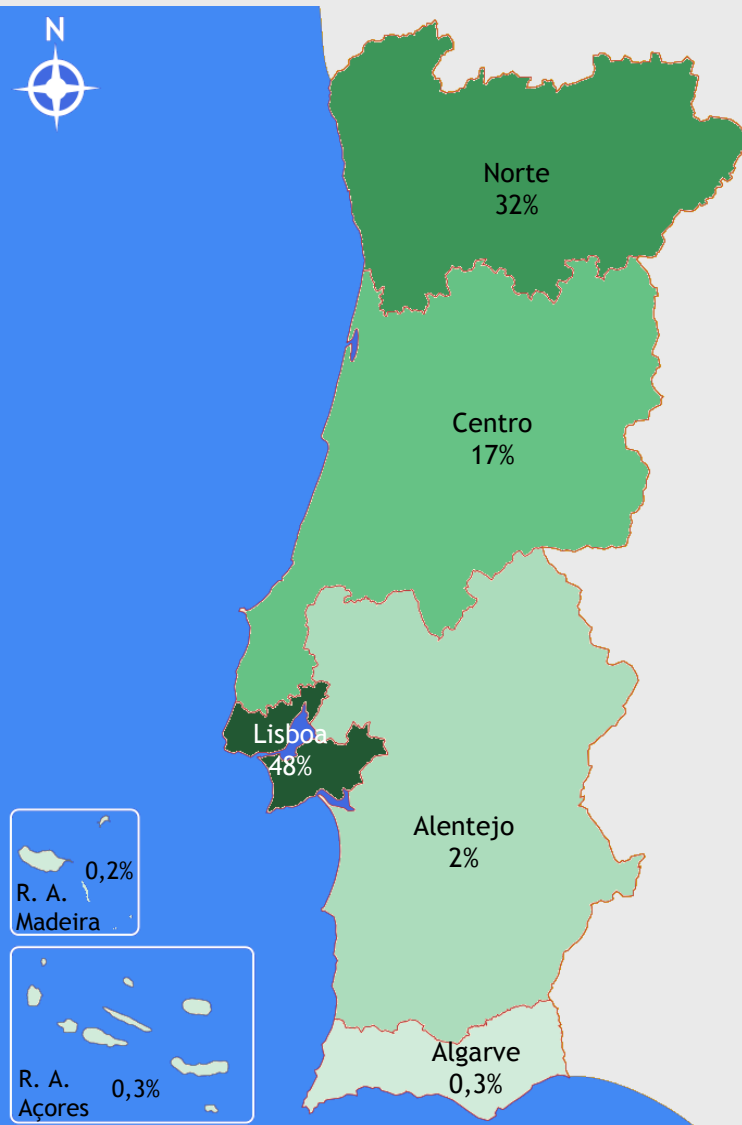
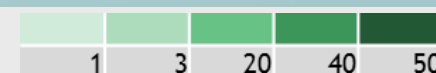


■ Public enterprises

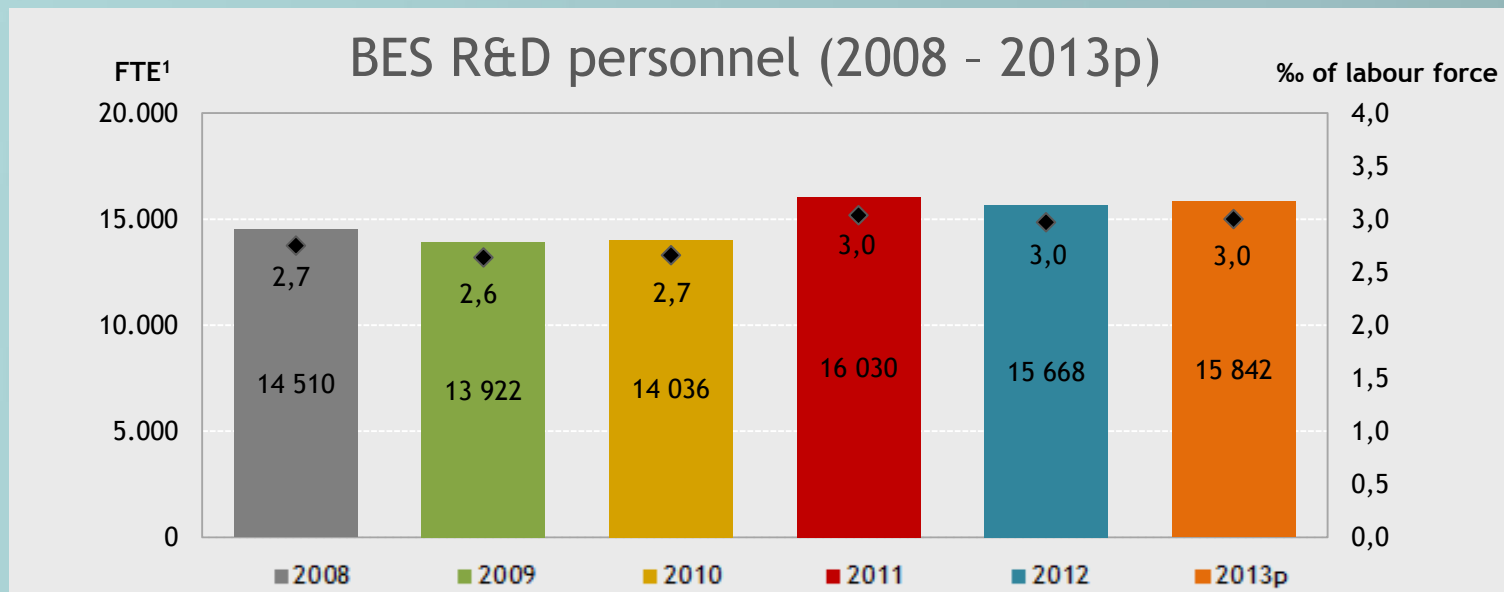
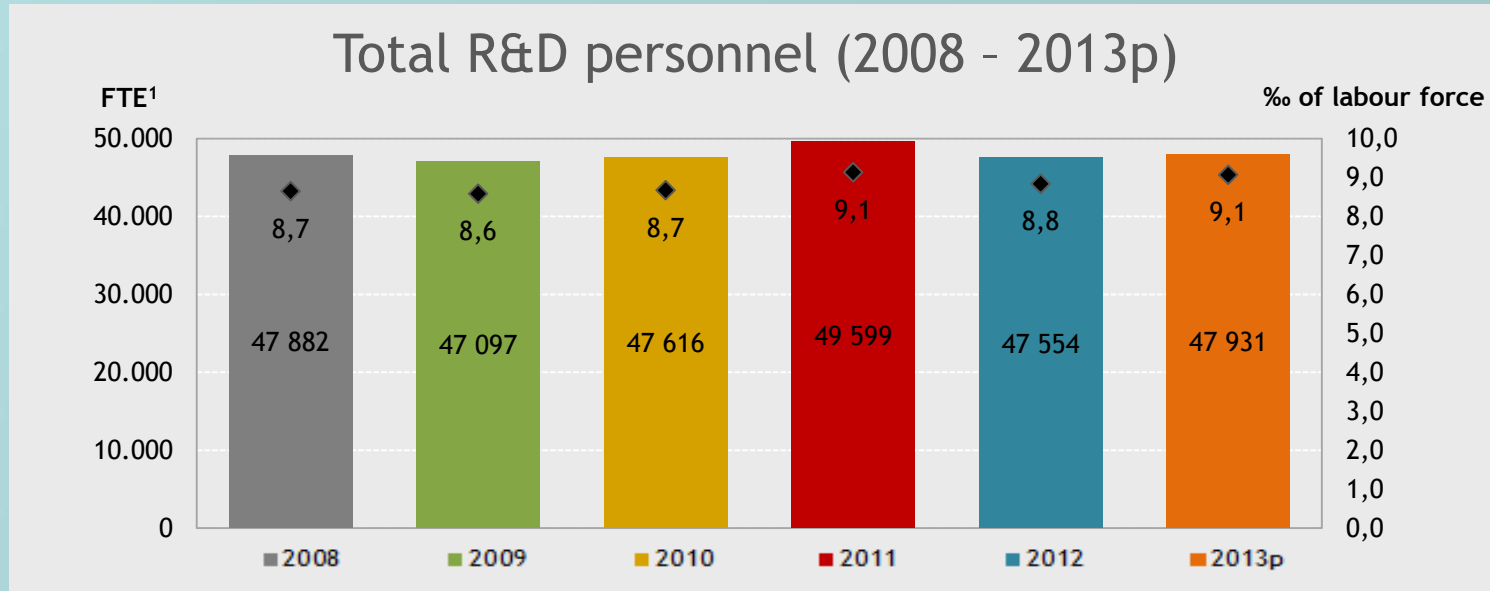
■ Private enterprises

■ Foreign enterprises

## Region (%)

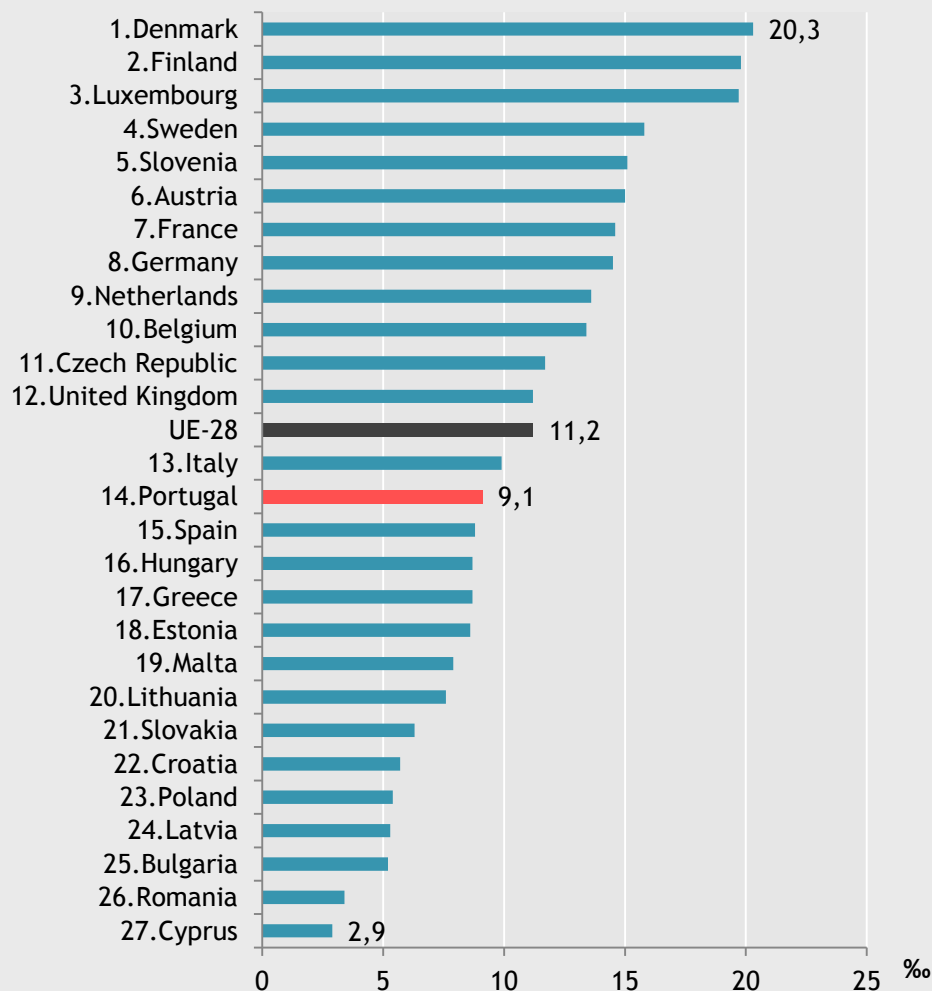


# MAIN RESULTS - Human resources

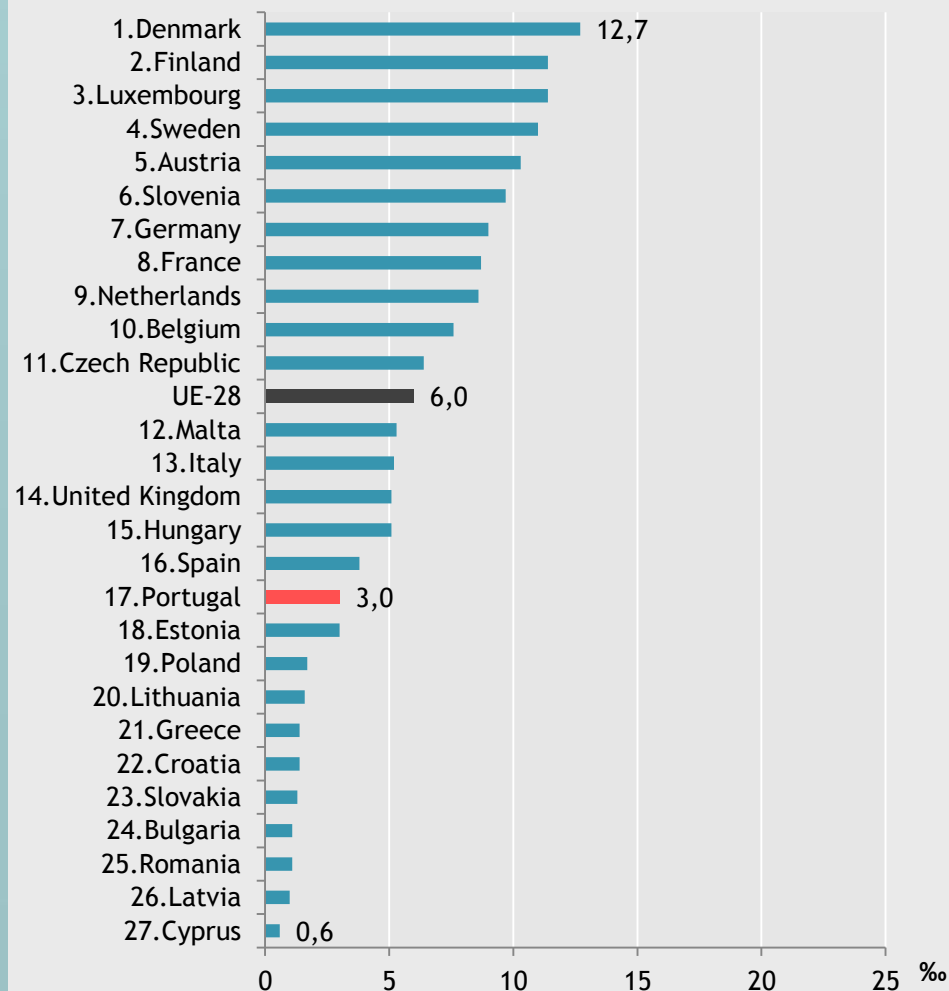


# International comparison (2013p)

## Total R&D personnel (FTE<sup>1</sup>) as % of total labour force

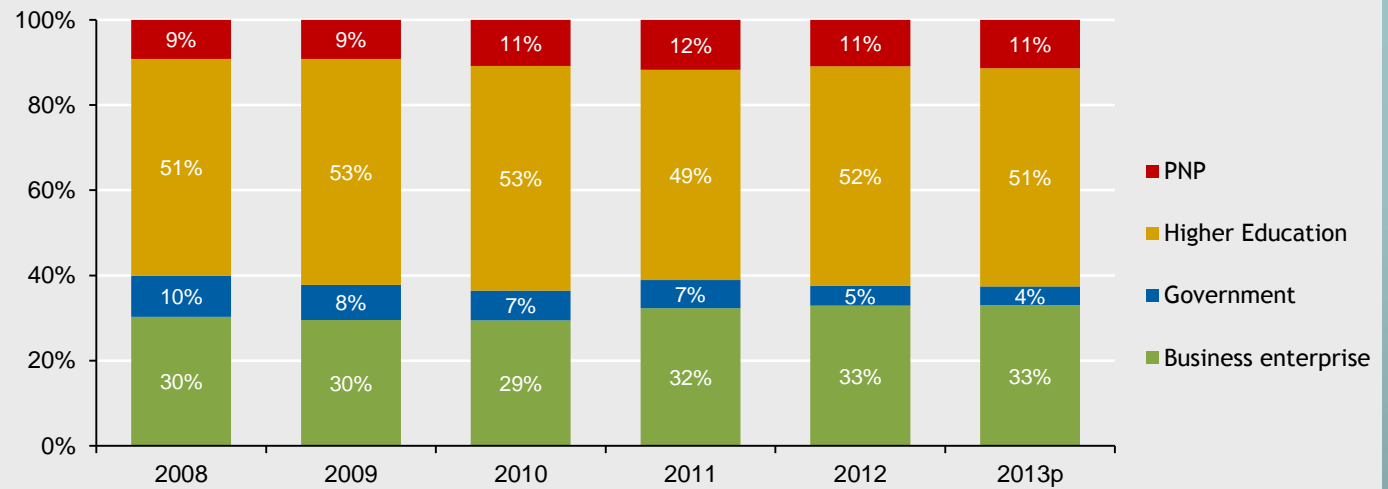
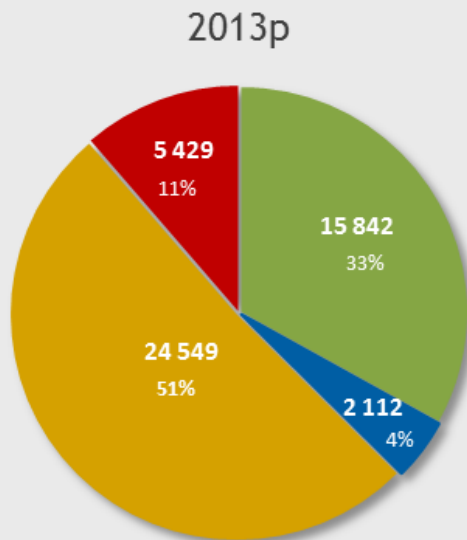


## BES R&D personnel (FTE<sup>1</sup>) as % of total labour force





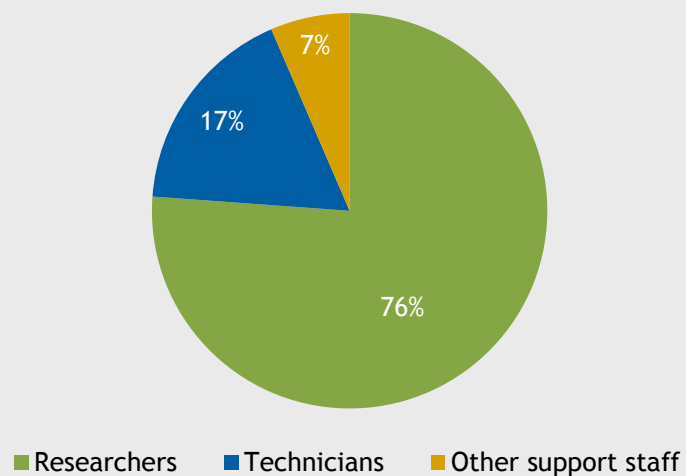
## R&D personnel (FTE<sup>1</sup>) by sector of performance (2008-2013p)



Notes: <sup>1</sup> FTE - Full-Time Equivalent; p) provisional data  
Source: DGEEC/MEC, IPCTN

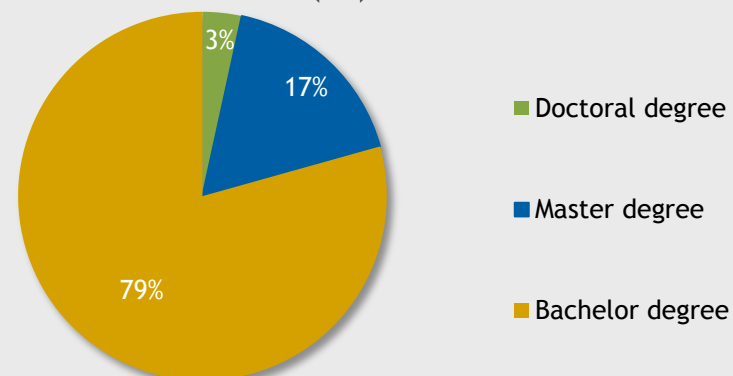
## BES R&D personnel 2012 (FTE<sup>1</sup> = 15 668) by:

### Occupation (%)

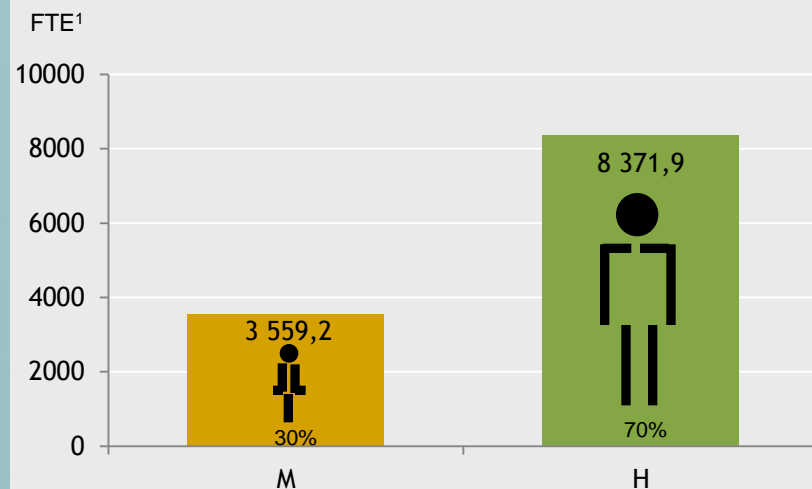


## BES Researchers 2012 (FTE<sup>1</sup> = 11 931) by:

### Qualification (%)



### Sex (%)



**Obrigada!**  
**Gracias!**  
**Thank you!**

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