



RESEARCH AND DEVELOPMENT ACTIVITY, 2010

(Preliminary data)

In 2010 the total amount of the **expenditure on research and development activity (R&D)** is 420.1 million BGN which increases by 16.4% in comparison with the previous year and the annual growth tendency retains for the period of 2006 - 2010.

R&D intensity (R&D expenditure as % of GDP) is one of the key indicators for measuring progress of the European Union (EU) in achieving the targets of the new Europe 2020 strategy - a strategy for smart, sustainable and inclusive growth.

In 2010 the R&D intensity in Bulgaria as compared to the previous year continues to grow from 0.53% in 2009 to 0.60% in 2010, but still vastly lags behind than the average value of the same indicator for the total EU-27 countries (2.01% in 2009).

1. R&D expenditure

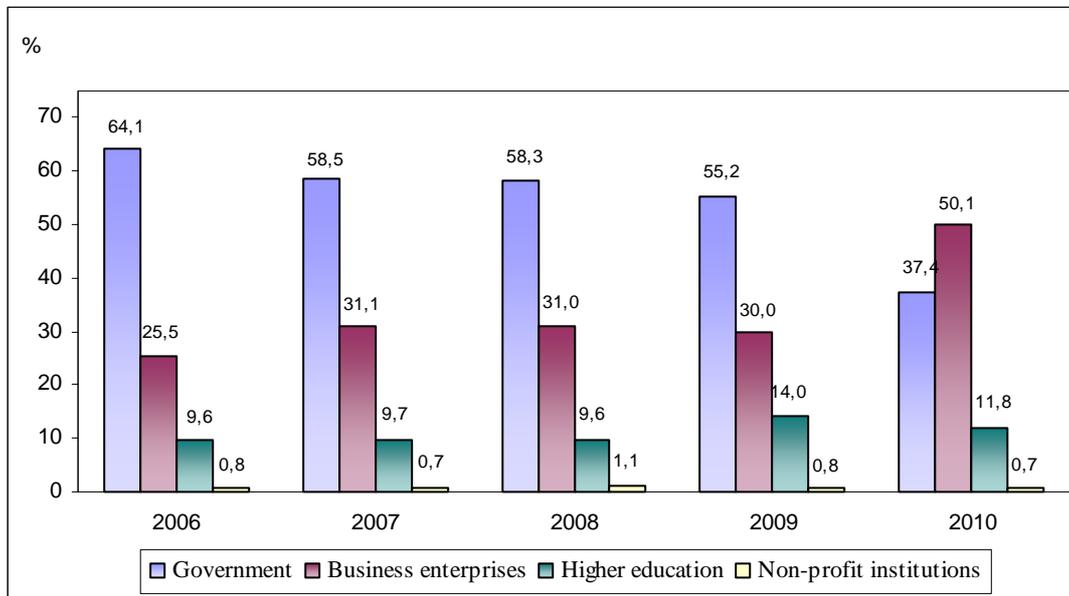
	2006	2007	2008	2009	2010
R&D expenditure in Bulgaria - million BGN	237.0	273.0	325.9	361.1	420.1
R&D expenditure as % of GDP					
Bulgaria	0.46	0.45	0.47	0.53	0.60
EU - 27	1.85	1.85	1.92	2.01	-

The increase of R&D expenditure in 2010 compared to 2009 is mainly due to significantly increased expenditures for science in the business enterprise sector - by 94.7% (from 108.2 million BGN to 210.6 million BGN). In the government sector and higher education sector is observed a decrease by 21.2% (from 199.5 million BGN to 157.1 million BGN) and by 2.2% (from 50.7 million BGN to 49.5 million BGN), respectively.

As a result, in 2010 there is a positive change in terms of the European model in the structure of R&D expenditure by institutional sectors. Business enterprise sector holds a leading position with a share of 50.1%, followed by the government sector by 37.4%, higher education sector by 11.8% and private non-profit sector by 0.7%.

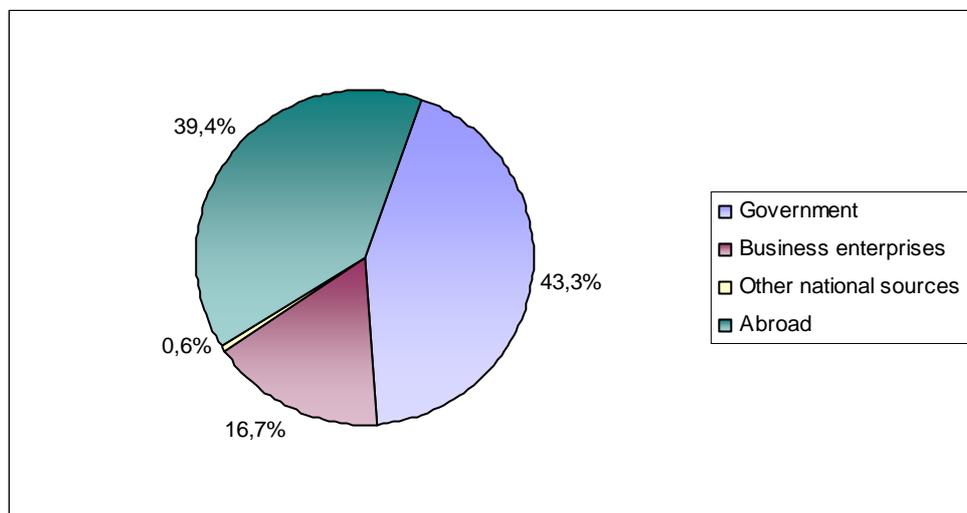


Figure 1. Structure of R&D expenditure by institutional sectors



Financing of R&D activity is allocated by the government budget, business, and other national sources and from abroad. The foreign funds used for R&D activity cover governmental resources (another governments, European programs, international organizations etc.) and resources from foreign enterprises as well. In 2010 the government sector remains the biggest source of R&D financing with a share of 43.3% but in comparison with 2009 the decrease is by 17.2 percentage points, followed by source of funds 'Abroad' with a share of 39.4%, which compared to 2009 registers an increase with 31 percentage points.

Figure 2. Structure of R&D expenditure by source of funds in 2010

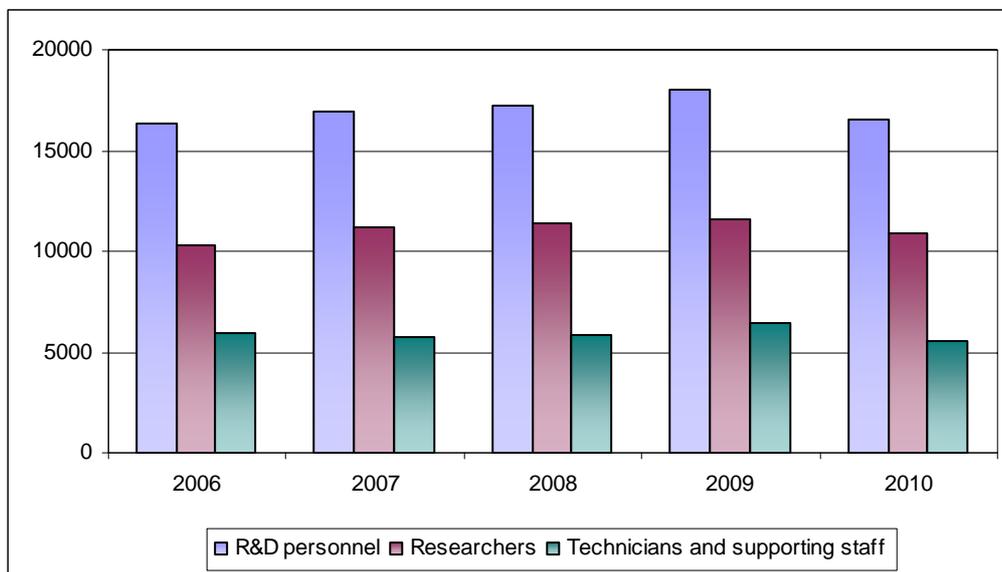




In 2010 the **personnel employed with research and development activity** is 16 509 persons (in full-time equivalent) which is 9.4% less than the previous year. The share of women in total R&D personnel (in full-time equivalent) is 53.4%.

The researchers which are the most highly qualified category of scientific staff constitute 66.2% of total R&D personnel as their share increases compared to the previous year by 0.6 percentage points. Nearly half of researchers (48.8%) hold a doctorate degree (PH. D) in 2010.

Figure 3. R&D personnel (in full-time equivalent)



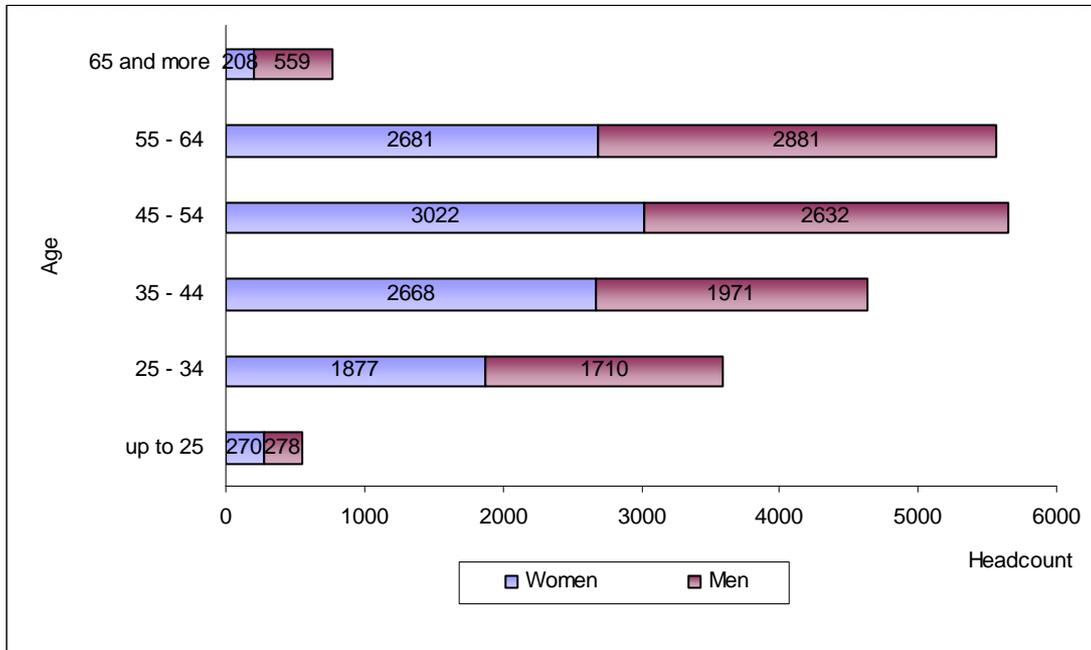
The main part of the scientific staff is concentrates in the organizations and institutes in government sector. In 2010 in the same sector are employed 9 346 persons (in full time equivalent), which forms 56.6% of the total R&D staff. The personnel engaged with scientific research and development in higher education sector is considerably less number - 4 362 persons, as their share is 26.4%. In 2010 there are 2 713 persons dealing with scientific activity in the business enterprise sector which comprise 16.4% of the total R&D personnel.

On scientific fields, the largest concentration of scientists is in the field of natural sciences with 4 975 employed (in full-time equivalent) or 30.1% of scientific staff. In the field of technical sciences there are 4 232 employed or 25.6% of total R&D personnel in 2010. Third place is for the agricultural sciences - 2 772 persons or 16.8%. Between 8% and 10% are employed in R & D in the other fields of science - medical, social sciences and humanities.

The age structure of R&D personnel as of 31.12.2010 shows that nearly half of the scientific staff (42.3%) is at the age up to 45 years, as in the business enterprise sector this share is 57.1%. Total for the country in this age group the difference in the level of employment in research and development activity between genders is 5.4 percentage points in favour of women - 44.9% at 39.5% for men.



Figure 4. Age structure of R&D personnel by sex as of 31.12.2010





Methodological notes

Research and development activity (R&D) comprises any creative work undertaken on a systematic basis in order to increase the volume of knowledge, including knowledge of man, culture and society, and the use of this knowledge to devise new applications. R&D activity covers basic research, applied research and experimental development.

The indicator “R&D expenditure” is defined as all expenditure for R&D performed within a statistical unit, whatever the source of funds. The R&D expenditure comprises current costs and capital expenditure on R&D.

The indicator “R&D personnel” measures the human resources going directly into R&D activity, responsible for creation, application and dissemination of new knowledge. R&D personnel include all persons employed directly in R&D, as well as those providing direct services (R&D managers, administrators and clerical staff). R&D personnel comprise three categories - researchers, technicians and other personnel. Personnel in full-time equivalent (FTE) are calculated on the basis of working time spent on R&D activity during the reference year.

According to the methodological manual 'Frascati' (Proposed standard practice for surveys on research and experimental development - Frascati Manual, OECD, 2002), adopted by Eurostat, R&D expenditure and R&D personnel are distributed in four institutional sectors:

- Business enterprise sector - includes all firms, organizations and institutions whose primary activity is production of market goods and services (other than those included in Higher education sector);
- Government sector - comprises general administrations of central or state government which furnish, but do not sell common services to satisfy the individual and collective needs of society and which are predominantly budgetary financed (other than those included in Higher education sector);
- Higher education sector includes all universities, colleges, other institutions of post-secondary education, research and development sectors to higher education institutions and university hospitals;
- Private non-profit sector - includes foundations, associations, etc. providing non-market services.