RESEARCH AND DEVELOPMENT ACTIVITY IN 2012
(PRELIMINARY DATA)

In 2012, the total amount of the **expenditure on research and development activity (R&D)** was 495.9 million BGN, which was by 15.5% more in comparison with the previous year. Since 2006 there has been a steady increase in R&D expenditure in absolute terms.

One of the five headline targets of the Europe 2020 strategy is to achieve an R&D intensity (measured as a percentage of R&D expenditure of GDP) of 3% in the European Union (EU). Bulgaria's national goal is to reach the 1.5% R&D intensity in 2020. In 2012, R&D intensity amounted to 0.64% of GDP and it was by 0.07 percentage points higher compared to 2011. Despite the growth, R&D intensity in Bulgaria in 2012 was nearly 3.2 times lower than the EU-27 average (2.03% in 2011).

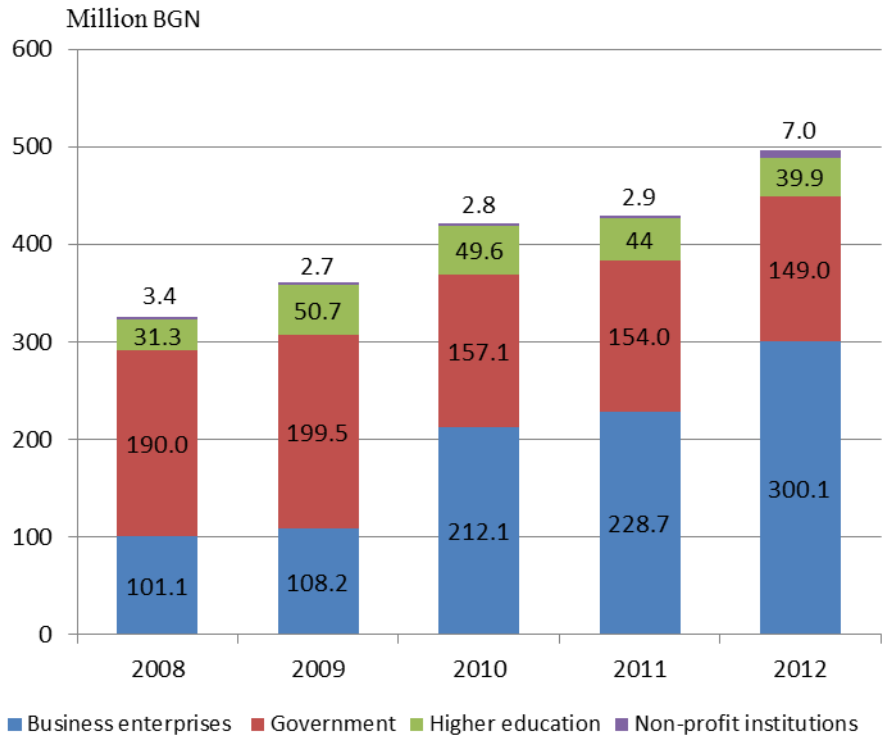
1. R&D expenditure

	2008	2009	2010	2011	2012
R&D expenditure in Bulgaria - million BGN	325.9	361.1	421.6	429.6	495.9
R&D expenditure as % of GDP					
Bulgaria	0.47	0.53	0.60	0.57	0.64
EU – 27	1.92	2.01	2.0	2.03	.

. „ - data not available

Almost all of the growth over the previous year of total R&D expenditure in 2012 was due to the business enterprise sector, where expenditure on R&D has increased by 31.2% (from 228.7 million BGN to 300.1 million BGN). The business enterprise sector was the largest of the four main institutional sectors of R&D performance, accounting for 60.5% of total R&D expenditure. The government sector and the higher education sector followed with shares of 30.0% (or 149.0 million BGN) and 8.1% (or 39.9 million BGN) respectively (Figure 1).

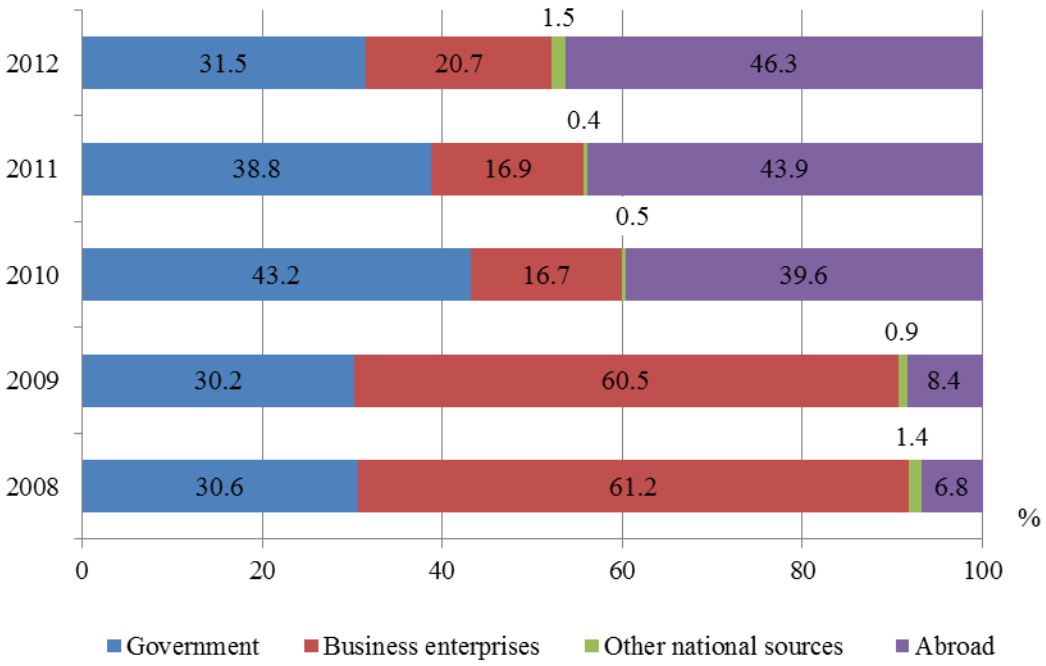
Figure 1: R&D expenditure by institutional sectors



The R&D activity was financed from the state budget, business, and other national sources and from abroad. Again, for a third year, funds from abroad had the largest share in the R&D funding in Bulgaria. In 2012 this share was 46.3% of total R&D expenditure and has increased by 2.4% compared to 2011. This was mainly driven by the increasing volume of the clinical trials which took place in Bulgaria, but are funded by foreign companies.

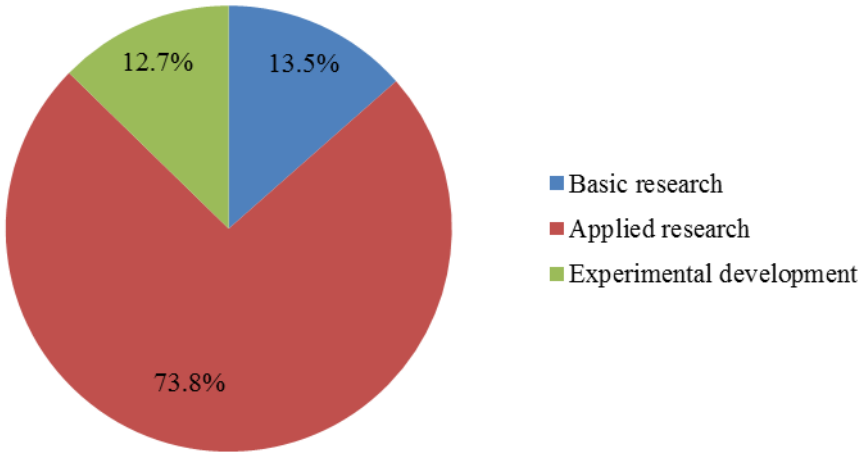
The next important source of financing R&D in 2012 was the government sector with a share of 31.5%, in which a decrease of 7.3 percentage points compared to 2011 was reported and the sector of Bulgarian enterprises, which has increased by 3.8 percentage points and has reached 20.7 % share of total R&D expenditure (Figure 2).

Figure 2: Structure of R&D expenditure by source of funds



The structure of current R&D expenditure by type of research in 2012 remained the same as in the previous year. The highest share belonged to applied research - 73.8% (340.7 million BGN), followed by basic research and experimental development, respectively with 13.5% (62.3 million BGN) and 12.7% (58.6 million BGN) (Figure 3).

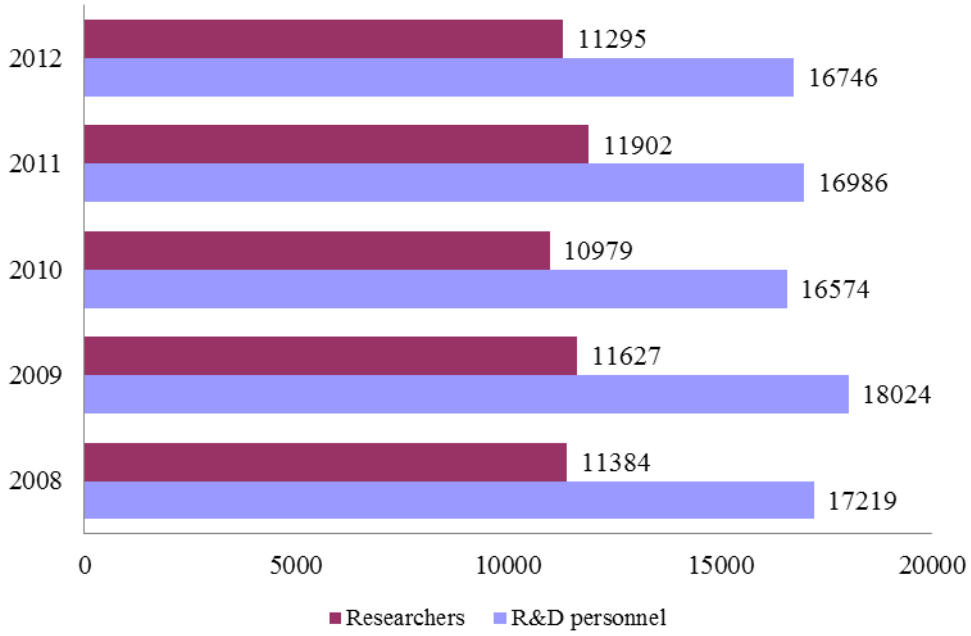
Figure 3: Structure of R&D expenditure by type of R&D, 2012



In 2012, the personnel employed with research and development activity amounted to 16 986 persons (in full-time equivalent) which was 1.4% less than in the previous year (Figure 4). The share of women in total R&D personnel was 53.0%, as the difference in the level of employment between genders was 6.0 percentage points in favor of women.

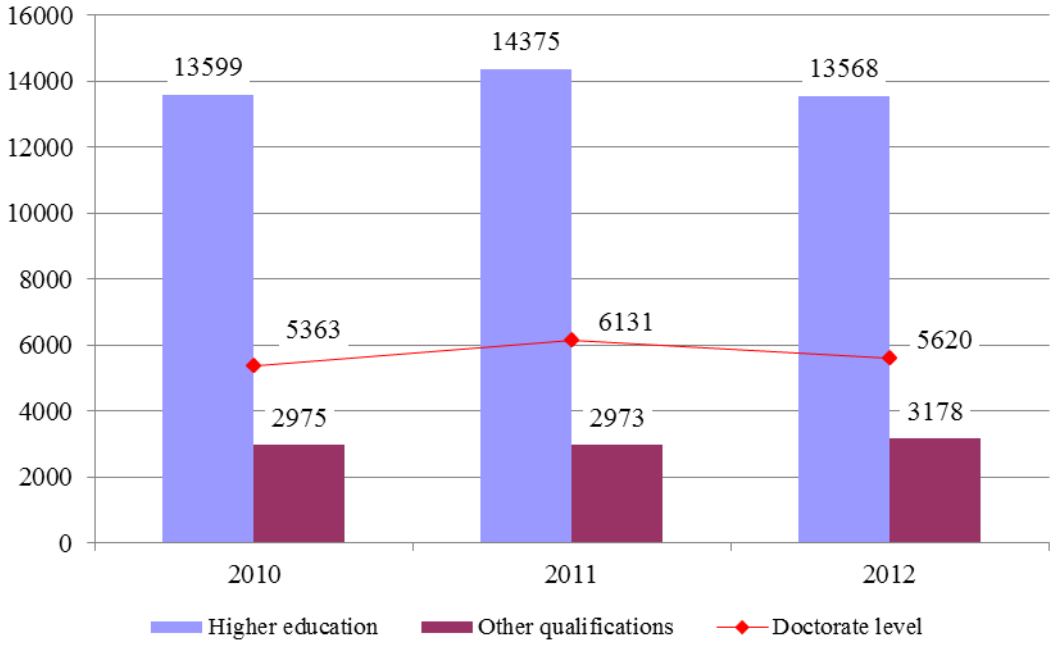
In 2012, the allocation of R&D personnel by sectors showed that 9 273 persons (in full time equivalent) were employed in the government sector or 55.4% of total R&D personnel. In the higher education sector 4 356 persons were engaged with scientific activity, and their share was 26.0%, while in the business enterprise sector engaged in research and development were 2 995 persons or 17.9% of total R&D personnel.

Figure 4: R&D personnel (in full-time equivalent)



In 2012, the share of researchers (in full time equivalent) of the total R&D personnel has decreased from 2011 year by 2.6 percentage points (from 70.1% to 67.5%). To ensure a high level of professionalism in research, 33.6% or 5 620 persons of R&D personnel in full time equivalent held a PhD (Figure 5). Researchers almost without exception (99.0%) had university degree and with a doctoral degree were near half of them (49.6% or 5 597 persons).

Figure 5: R&D personnel (in full-time equivalent) by qualification



Methodological notes

Research and development activity (R&D) comprises any creative work undertaken on a systematic basis in order to increase the degree 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. An R&D personnel includes all persons employed directly in R&D, as well as those providing direct services (R&D managers, administrators and clerical staff). An R&D personnel comprises researchers 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 administration 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 budget- 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.