RESEARCH AND DEVELOPMENT ACTIVITY IN 2011
(PRELIMINARY DATA)

In 2011 the total amount of the **expenditure on research and development activity (R&D)** was 429.6 million BGN or by 1.9% more in comparison with the previous year, as their growth compared to the previous years in absolute value had no impact on the R&D intensity (R&D expenditure as % of GDP) which 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 2011 the total expenditure amounted to 0.57% of GDP, which was by 0.03 percentage points below the level in 2010 and still lags behind than the average value of the same indicator for the total EU-27 countries (2.0% in 2010).

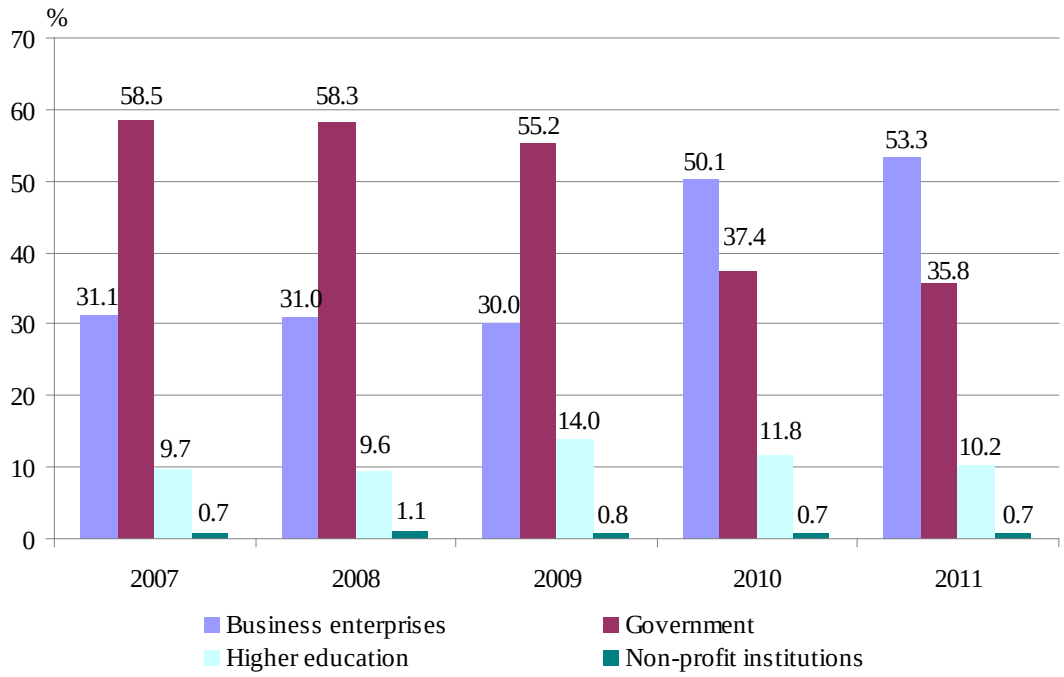
1. R&D expenditure

	2007	2008	2009	2010	2011
R&D expenditure in Bulgaria - Million BGN	273.0	325.9	361.1	421.6	429.6
R&D expenditure as % of GDP					
Bulgaria	0.45	0.47	0.53	0.60	0.57
EU – 27	1.85	1.92	2.01	2.0	.

„ . „ - data not available

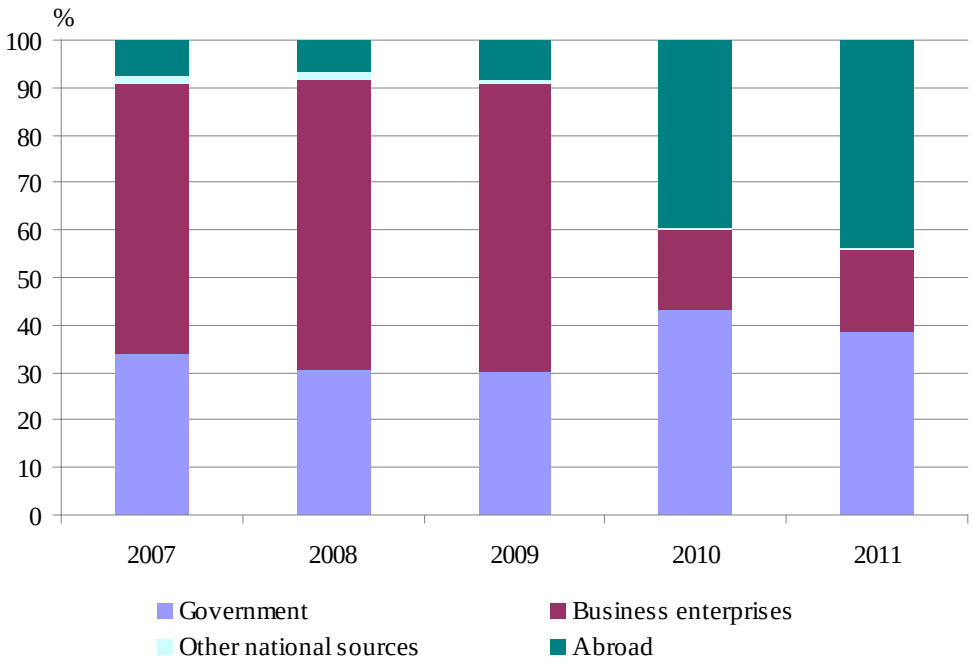
The largest relative share of the total R&D expenditure in 2011 was in the business enterprise sector - 53.3% and compared to 2010 a growth of 7.8% (from 212.1 million BGN to 228.7 million BGN) was registered. In 2011 compared to the previous year in sectors “Higher education” and “Government” a decrease was observed - respectively by 11.2% (from 49.5 million BGN to 44.0 million BGN) and 2.0% (from 157.1 million BGN to 153.9 million BGN) (Figure 1).

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



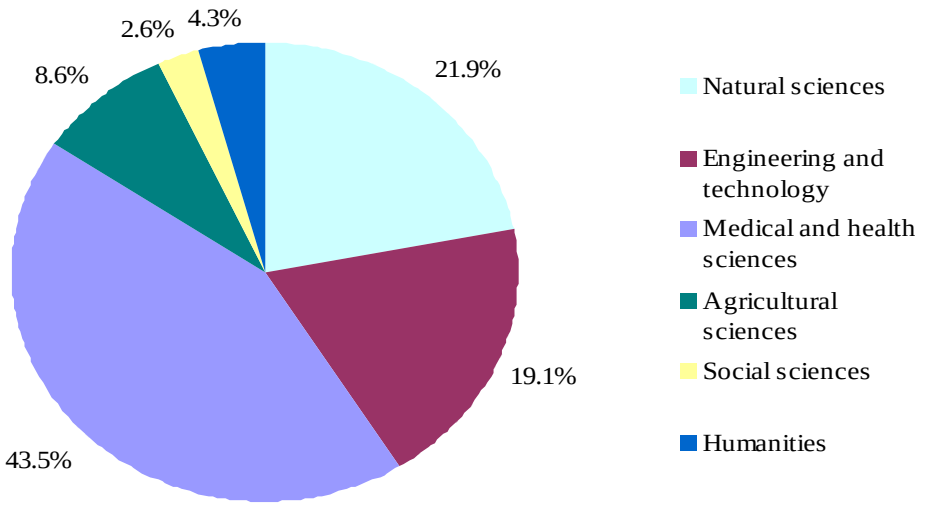
In recent years more important place was occupied by sources of funds from abroad for carrying out R&D in Bulgaria - foreign enterprises, European programs, international organizations, another governments, others. In 2011 for the first time, their share of the total R&D expenditure was highest - 43.9% and ahead the current major source of funding - government sector with share of 38.8% (Figure 2).

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



In the structure of R&D expenditure by fields of science as in 2010 the highest relative share was in the field of medical and health sciences - 43.5% (186.9 million BGN) followed by the natural and engineering and technology sciences - respectively by 21.9% (94.1 million BGN) and 19.1% (82.0 million BGN) (Figure 3).

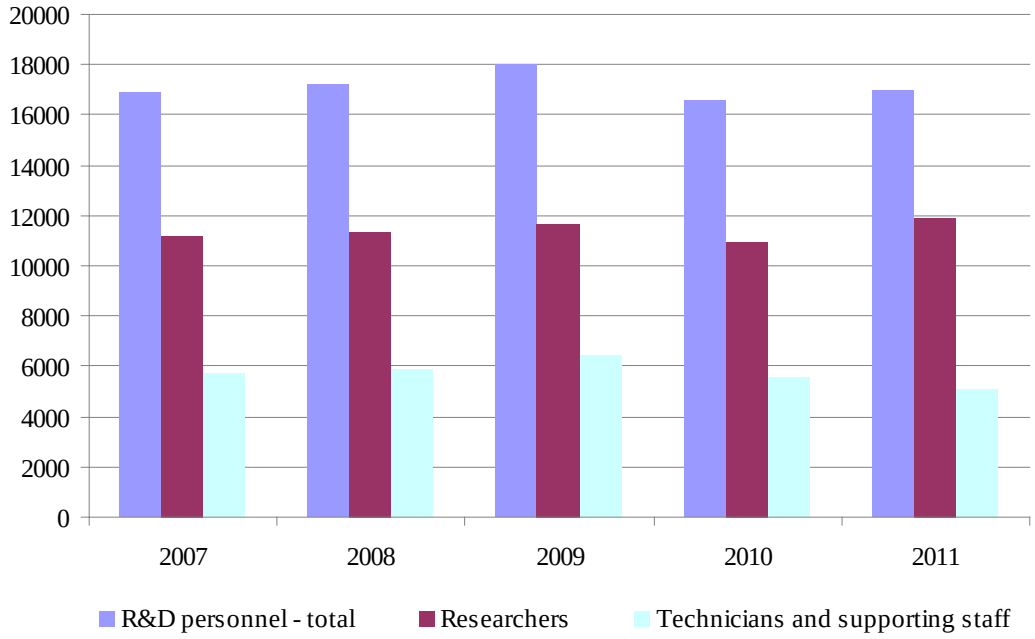
Figure 3. Structure of R&D expenditure by fields of science in 2011



In 2011 **the personnel employed with research and development activity** amounts to 16 986 persons (in full-time equivalent) which was by 2.5% more than the previous year (Figure 4). The share of women in total R&D personnel was 53.3%, as the difference in the level of employment between the genders was 6.6 percentage points in favor of women.

The share of researchers in the total R&D personnel (in full-time equivalent) increased by 3.9 percentage points in comparison with 2010 (from 66.2% to 70.1%), as in 2011 nearly half of researchers (49.9% or 5 939 persons) held a doctorate degree (PH. D).

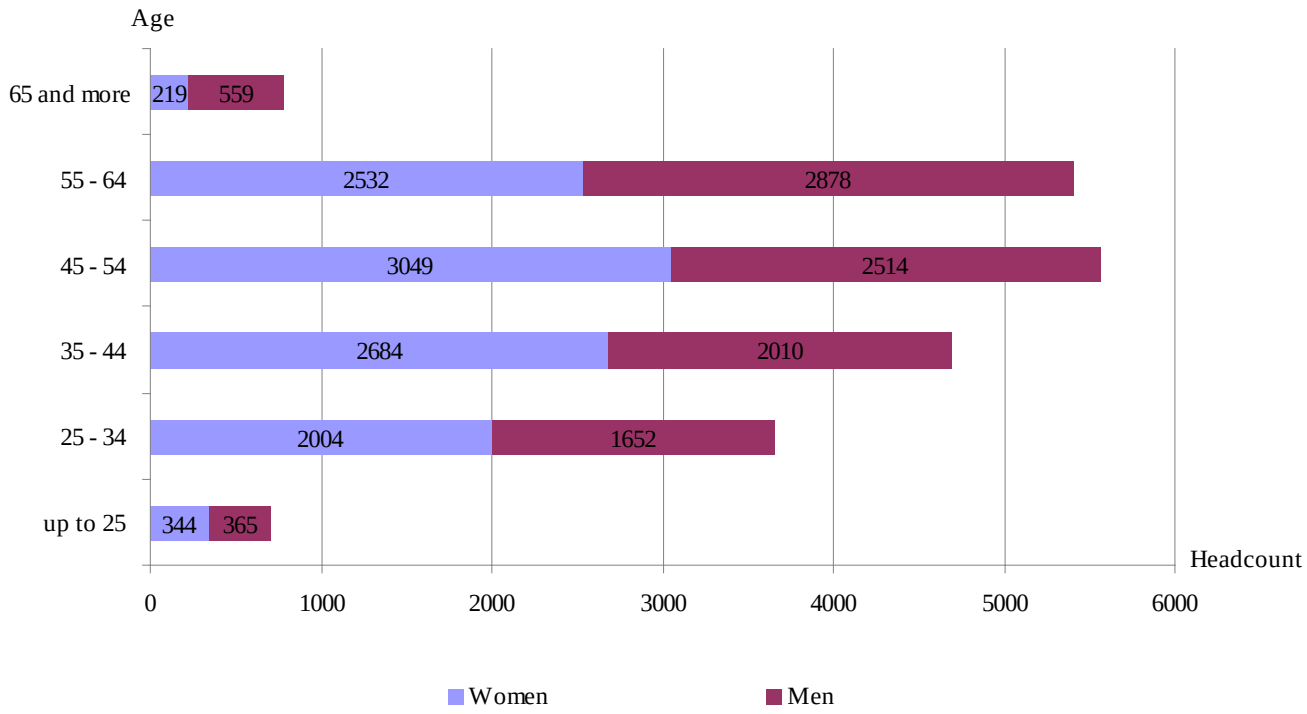
Figure 4. R&D personnel (in full-time equivalent)



In 2011, there was no significant change in the structure of the R&D personnel by institutional sectors compared to that of 2010. The main part of the scientific staff was concentrated in the government sector - 9 238 employees (in full-time equivalent) which formed 54.4% of the total staff. The personnel engaged with scientific research and development in higher education sector was significantly less number - 5 216 persons, as their relative share was 30.7%. In the business enterprises sector 2 439 employees were dealing with scientific activity or 14.4% of the total personnel, engaged with R&D.

The age structure of R&D personnel as of 31.12.2011 showed that 43.5% of the scientific staff was at the age up to 45 years, as the share of employee in this age group increased by 1.1 percentage points in comparison with 2010 (Figure 5).

Figure 5. Age structure of R&D personnel by sex as of 31.12.2011



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.