Statistical Office of the Republic of Serbia ISSN 0353-9555

STATISTICAL RELEASE IR10

Number 133 • Year LXVII, 30.06.20172017.

Statistics of science, technology and innovation SRB133 IR10 300617

Government budget appropriations or outlays for R&D, 2016/2017

–Research and development–

The presented data are the result of the survey on government budget appropriations or outlays for the R&D activity in the period from 2016 to 2017, carried out in 2017.The survey concerns institutions financing R&D activities, direct beneficiaries of budgetary funds, which have financed in 2016 or should have financed in 2017 R&D activities – direct beneficiaries of the budget of the Republic taking part in the allocation of funds for R&D in the Republic of Serbia.

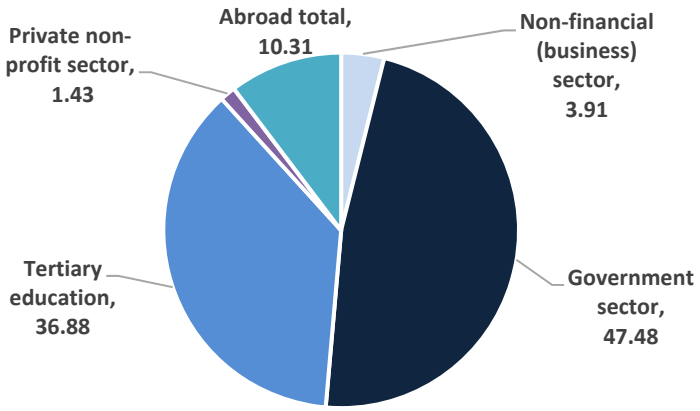
In the Republic of Serbia, in 2016 the amount of 16.312.531 thous. RSD of budgetary funds were spent for the R&D activity (after budget adjustment).

The share of budgetary funds for R&D in GDP reached 0,39% in 2016. The largest percentage of the budget for research and development in 2016 came from the state sector (47.5%), followed by the higher education sector (36.9%). In total funds for financing higher education, funds from international organizations account for around 10%. The non-financial (business) sector accounts for around 4%, while only 1.4% of the funds were allocated for the non-profit sector.

Regarding the socio-economic objectives, the highest budgetary funds allocated for research and development in 2016 were spent on the goal: General Knowledge Improvement - Research and Development funded from the University's General Funds - GUF (45.28%). For the next goal: Industrial production and technology is 15.32%, and the least funds were spent on the goal: Exploration and Exploitation of the Universe (0.08%).

The planned government budget appropriations or outlays for the R&D activity in 2017 (before budget adjustment) amounted to 13,423,913 thous. RSD. Most of funds, 43,4%, were intended for the objective General advancement of knowledge: R&D financed from GUF (from the general funds of universities).

Graph. 1. The participation of the sectors in the total expenditure (%)



1. Budgetary funds of the Republic of Serbia for R&D (actual outlays) by socio-economic objectives and sectors, 2016

thous.RSD

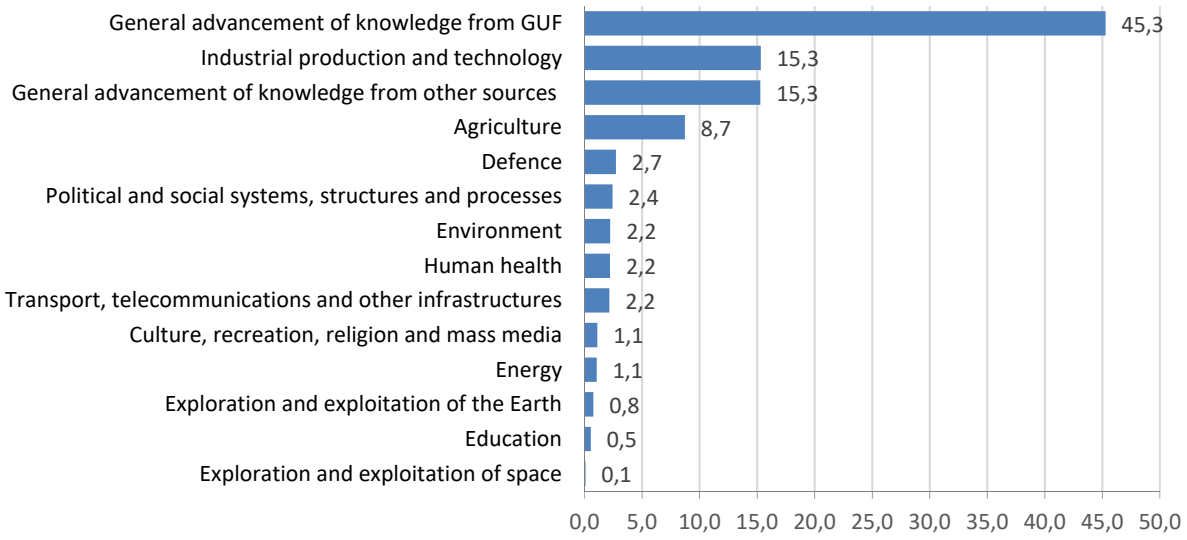
Socio-economic objectives of researches	Sectors, total	Non-financial (business) sector	Government sector	Tertiary education	Private non-profit sector	Abroad total
TOTAL	**16312531**	**638057**	**7744423**	**6015353**	**232918**	**1681780**
Basic researches	4958581	217079	1831945	2907457	2100	-
Research in technological development	3483329	268642	1561512	1653175	-	-
Co-financing of integral and interdisciplinary researches	3185232	109859	1820633	1254740	-	-
Innovation projects	56587	29200	27387	-	-	-
Other support programmes for innovation activities	10000	10000	-	-	-	-
R&D work of SANU and Matica srpska	107620	-	72120	35500	-	-
R&D work of centres of excellence	10000	-	10000	-	-	-
Procurement and maintenance of R&D equipment and space for R&D work	6360	-	-	6360	-	-
Investments in R&D equipment	1262857	-	1259857	3000	-	-
Investments in the space for R&D work	314072	-	314072	-	-	-
International scientific co-operation of interest for the Republic of Serbia	*1743042*	*32*	*27771*	*33459*	-	*1681780*
Obligations of the State to participate in EU programmes	1459698	22	16577	22727		1420372
Obligations of the State in bilateral scientific programmes	21926	-	11194	10732	-	-
Other obligations towards international organisations	261418	10	-	-	-	261408
Development of informatics society	10990	-	6290	4700	-	-
Vocational training of personnel for R&D work	75015	-	38391	36624	-	-
Motivation and scholarships for gifted youth for R&D work	250899	-	7111	35188	208600	-
Purchase of scientific and specialised literature from abroad and access to scientific and specialised databases	5500	-	3000	2500	-	-
Publication of scientific publications and organisation of scientific events	80796	3245	21388	33945	22218	-
Encouraging activities of scientific and professional societies, associations and similar organisations to promote science and technology	8705	-	-	8705	-	-
Co-financing of the construction of dwellings for young researchers and scientists	249161	-	249161	-	-	-
Priority programmes according to the Strategy	44914	-	44914	-	-	-
Other programmes according to the Strategy and Law	448871	-	448871	-	-	-

2. Budgetary funds of the Republic of Serbia for R&D (actual outlays) by socio-economic objectives and sectors, 2016

thous.RSD

Socio-economic objectives of researches	Sectors, total	Non-financial (business) sector	Government sector	Tertiary education	Private non-profit sector	Abroad total
TOTAL	**16312531**	**638057**	**7744423**	**6015353**	**232918**	**1681780**
Exploration and exploitation of the Earth	124800	46068	78732	-	-	-
Environment	365021	14111	350910	-	-	-
Exploration and exploitation of space	13729	-	13729	-	-	-
Transport, telecommunications and other infrastructures	353732	140348	213384	-	-	-
Energy	174226	34647	139579	-	-	-
Industrial production and technology	2498832	216338	2282494	-	-	-
Human health	362014	29091	332923	-	-	-
Agriculture	1423357	72172	1351185	-	-	-
Education	88667	3246	62320	23101	-	-
Culture, recreation, religion and mass media	182811	50542	82749	47420	2100	-
Political and social systems, structures and processes	398414	258	398156	-	-	-
General advancement of knowledge: from general university funds	*7387039*	-	*1949706*	*5206515*	*230818*	-
R&D related to natural sciences	440939	-	430688	10251	-	-
R&D related to engineering and technology	2865396	-	1269857	1386939	208600	-
R&D related to medical and health sciences	1738850	-	-	1716632	22218	-
R&D related to agricultural sciences	691399	-	-	691399	-	-
R&D related to social sciences	748986	-	249161	499825	-	-
R&D related to humanities	901469	-	-	901469	-	-
General advancement of knowledge: from other sources – not from general university funds	*2493332*	*31205*	*42030*	*738317*	-	*1681780*
R&D related to natural sciences	2447868	-	27771	738317	-	1681780
R&D related to engineering and technology	45432	31205	14227	-	-	-
R&D related to medical and health sciences	32	-	32	-	-	-
Defence	446557	31	446526	-	-	-

Graph. 2 The share of budget resources for R&D, by the socio-economic objectives (actual expenditure), in the total budgetary expenditure on R&D in 2016 (%)

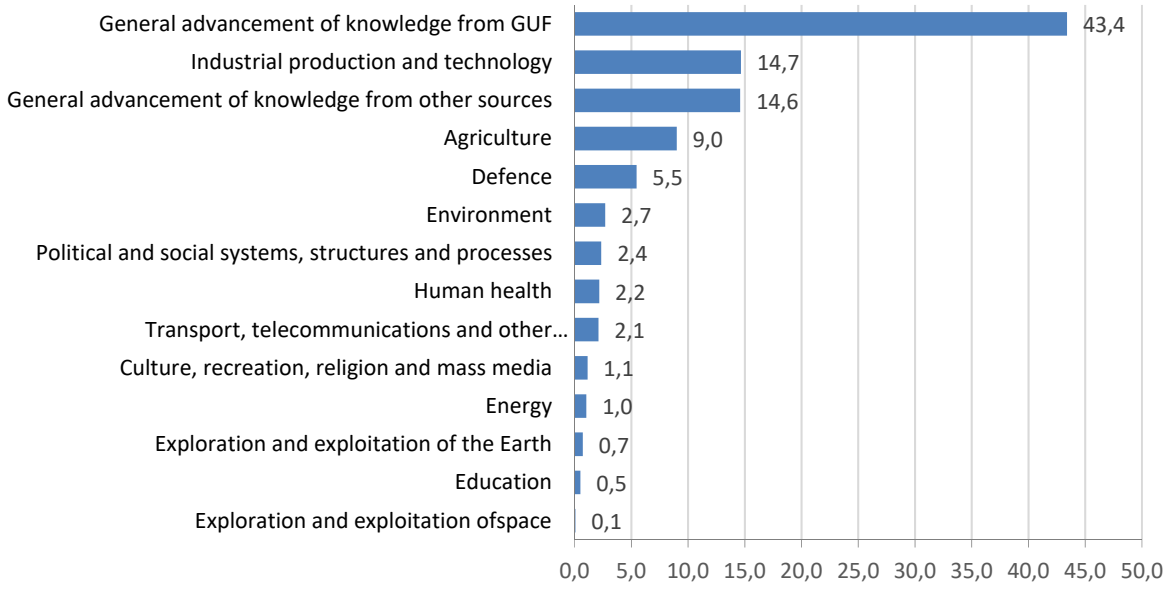


3. Budgetary funds of the Republic of Serbia for R&D by socio-economic objectives, (adopted budget, prior to budget adjustment), 2017

thous.RSD

Socio-economic objectives of researches	Planned budget for 2017
TOTAL	**13423913**
Exploration and exploitation of the Earth	98094
Environment	362368
Exploration and exploitation of space	10863
Transport, telecommunications and other infrastructures	283589
Energy	139368
Industrial production and technology	1969283
Human health	292317
Agriculture	1208835
Education	69692
Culture, recreation, religion and mass media	154087
Political and social systems, structures and processes	316417
General advancement of knowledge: from general university funds	5825960
R&D related to natural sciences	349577
R&D related to engineering and technology	2258241
R&D related to medical and health sciences	1371231
R&D related to agricultural sciences	545722
R&D related to social sciences	591316
R&D related to humanities	709873
General advancement of knowledge: from other sources – not from general university funds	1959800
R&D related to natural sciences	1924040
R&D related to engineering and technology	32184
R&D related to humanities	3576
Defence	733240

Graph. 3. The share of planned budget funds for R&D (adopted budget before adjustment) in the total budgetary outlays on R&D, by the objectives, 2017 (%)



Methodological explanations and definitions

Data source

Data are the result of the processing of the survey on overall budgetary appropriations and outlays for science over 2016-2017 in the Republic of Serbia. The data were collected by means of reports of the competent ministries, participating in the allocation of budgetary funds for R&D(filling in the form BIN).

Coverage and comparability

The methodology for the survey is harmonised with the international standards set up by OECD and published by the latter in the Frascati Manual*(*The Measurement of Scientific and Technological Activities - Proposed Standard Practice for Surveys of Researchand Experimental Development - Frascati Manual, 2002 and2007; publisher: OECD).

The Nomenclature for the Analysis and Comparison of Scientific Programmes and Budgets – NABS 2007, which is linked with the Frascati Manual, was used in monitoring the allocation of the Government Budget appropriations or outlays according to the socio-economic objectives. This Nomenclature classifies the socio-economic objectives as well as the purpose of the spent funds for the R&D in 13 categories.

The survey “Report on Government Budget Appropriations and Outlays for Research and Development, 2016 – 2017” collects data on R&D on budget appropriations and outlays for research and development, by socio-economic objectives, including all financing of international R&D programmes or institutions abroad. The survey is aimed at monitoring R&D government policy through its financing of R&D activities.

This survey concerns institutions that finance R&D activity. The data refer to actual outlays in 2016 (actual money paid out during the year) and to the planned budget for 2017 (amount voted before budget adjustment).

The report is to be filled in by all institutions (direct budget beneficiaries) that financed in 2016 or were expected to finance R&D activities in 2017 – direct beneficiaries of the budget of the Republic of Serbia participating in the allocation of funds for research and development in the Republic of Serbia.

Definitions of main concepts

Scienceis a set of systematised and argument-based knowledge, i.e. facts, concepts, principles, data, information, theories, laws and patterns in a selected historical period about objective reality, i.e. nature and society, obtained through the application of objective scientific methods, and which main purpose and objective is to apprehend the laws and patterns about the past, the present and future of natural and social phenomena, as well as to improve efficient work in all fields of human activities.

Scientific research is theoretical or experimental work undertaken for acquiring new scientific knowledge and increasing human stock of knowledge. Scientific research implies basic and applied research.

Basic research implies research that increases the general stock of scientific facts and knowledge, and determines new fields of human knowledge and perception, but not involving or not necessarily involving any direct application of the obtained results.

Applied research is a theoretical or experimental work undertaken in order to acquire new knowledge, and directed towards resolving any practical task, i.e. achieving any practical objective.

Experimental (development) research is systematic work, based on knowledge acquired through basic or applied research, i.e. practical experience, which is primarily directed towards introducing new processes, products and services.

Scientific development work is a systematic activity which, through the application of scientific methods, brings new scientific knowledge, i.e. uses creatively existing knowledge for new applications. This is creative work on acquiring new knowledge, which is aimed to raise the general civilization level of society and touse that knowledge in all fields of socio-economic development.

Expenditure on research and development by types are divided into current costs and capital expenditures.

Current costs include: labour costs; other R&D employees' remuneration costs, other current costs (material costs for R&D work – raw materials, supplies, energy; payments based on work by contract and work for hire; daily allowances, travel costs, representation, etc).

Capital expenditures include expenditures on land and buildings; machines and equipments; patents, licences, studies and projects; software and hardware (implying total expenditures related to the purchase of computers, devices, systems, components and equipment, as well as purchase costs or costs for software development for own account), and other expenditures.

Non-financial (business) sector includes business entities and organizations which primary activity is the market production of goods and services and theirs ale at economically significant prices, as well as R&D incorporated units.

Tertiary education includes higher schools and universities within corporate units, faculties, academies and R&D institutes, whatever the sources of finance and legal status. This sector covers also research institutes and clinics under the direct control or administration of a tertiary education organisation.

Government sector includes organisations, offices and other bodies, except tertiary education, furnishing to the community free common services which could not be provided under market conditions, and which reflect the economical and social policy of the society; by definition this sector covers the activities of the administration, defence and public order enforcement; health, education, culture, recreation and other social services.

Non-profit sector includes non-market private non-profit organisations serving households without charging or at a low price. Those organisations may be founded by citizens' associations, for providing goods and services to the members or for general purposes.

Sector abroad includes organizations and individuals being outside the politica lboundaries of a country, as well as corresponding land owned by those organisations. It covers also all international organisations, including their buildings on domestic territory. Are to be excluded from the sector Abroad general contributions to organizations such as: UN, OECD, EU, etc.

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Published and printed by: Statistical Office of the Republic of Serbia, Belgrade, Milana Rakica 5,
Phone: +381 11 2412922 ● Fax: +381 11 2411260 ● www.stat.gov.rs
Responsible: Miladin Kovačević, PhD, Director
Circulation: 20 ● Issued annually