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Statistics of science, technology and innovation

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Government budget appropriations or outlays for R&D, 2017/2018

–Research and development–

In the Republic of Serbia, in 2017 the amount of 17,899,912 thousand RSD of budgetary funds were spent for the R&D activity.

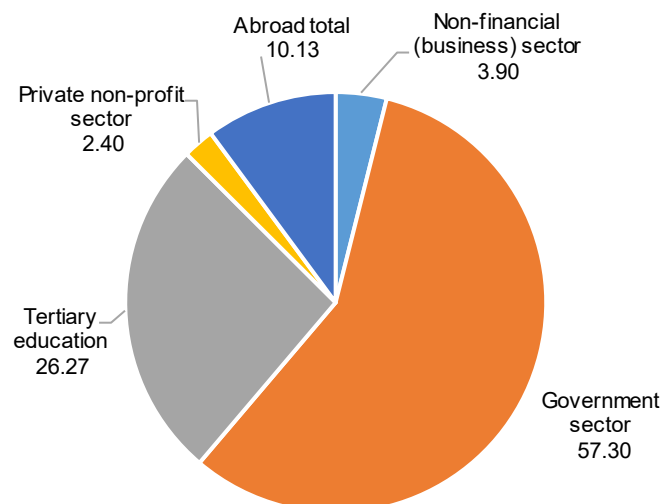
The share of total budgetary funds for R&D in GDP reached 0.40% in 2017.

The largest percentage of the budget for research and development in 2017 came from the government sector (57.3%), followed by the tertiary education sector (26.3%). In total funds for financing research and development, funds from international organizations account for around 10%. The non-financial (business) sector accounts for around 4%, while only 2.4% 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 2017 were spent on the goal: General Knowledge Improvement - Research and Development funded from the General University Funds - GUF (34.6%). For the goal: Industrial Production and Technology 19.2% were spent, and the least funds were spent on the goal: Exploration and Exploitation of the Earth (1%).

The planned government budget appropriations or outlays for the R&D activity in 2018 (before budget adjustment) amounted to 15,493,285 thousand RSD. Most of funds, 33.9%, were intended for the objective General Advancement of Knowledge: R&D financed from the General University Funds.

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 types of incentives/programmes and sectors, 2017

thous. RSD

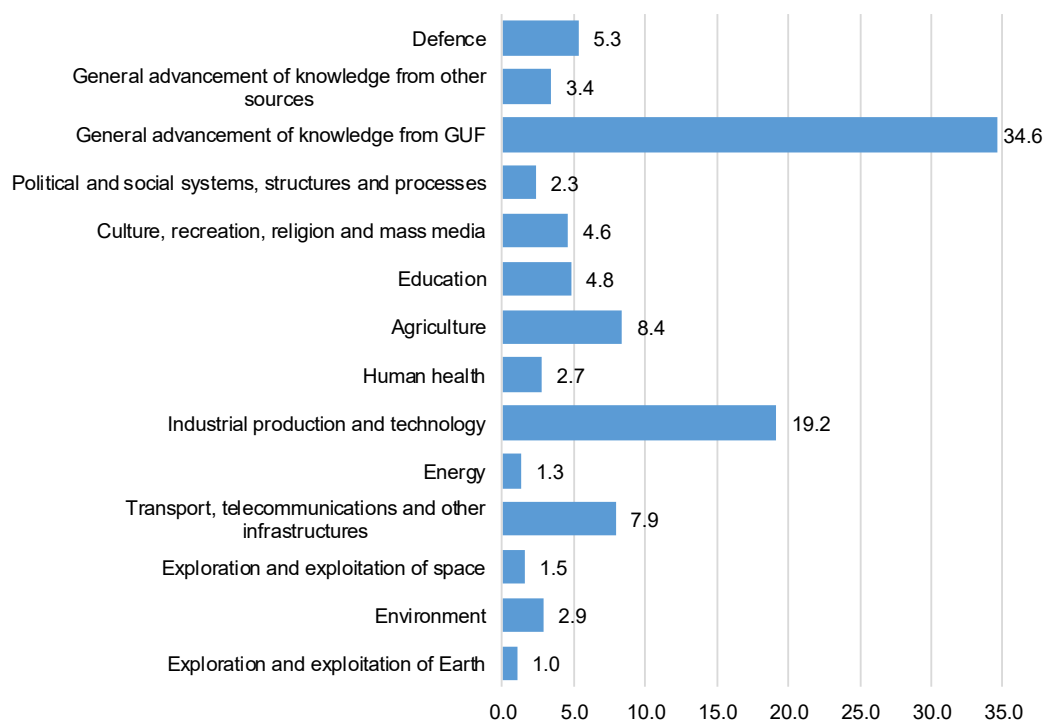
Programmes	Total	Non-financial (business) sector	Government sector	Tertiary education	Private non- profit sector	International organisations
TOTAL	17899912	698631	10256579	4701656	430146	1812900
Basic researches	5130576	167050	2935169	2028007	350	-
Research in technological development	4047831	310673	2470646	1266512	-	-
Co-financing of integral and interdisciplinary researches	3290785	116122	2025655	1149008	-	-
Innovation projects	163224	89883	59341	14000	-	-
Other support programmes for innovation activities	30000	10000	20000	-	-	-
R&D work of SANU and Matica srpska	272364	-	67964	22750	181650	-
R&D work of centres of excellence	10000	-	10000	-	-	-
Procurement and maintenance of R&D equipment and space for R&D work	45300	-	-	45300	-	-
Investments in R&D equipment	6000	-	-	6000	-	-
Investments in the space for R&D work	511671	-	511671	-	-	-
<i>International scientific co-operation of interest for the Republic of Serbia</i>	<i>1898387</i>	<i>1</i>	<i>38078</i>	<i>47408</i>	<i>-</i>	<i>1812900</i>
Obligations of the State to participate in EU programmes	1584165	-	21352	26279	-	1536534
Obligations of the State in bilateral scientific programmes	314222	1	16726	21129	-	276366
Vocational training of personnel for R&D work	74726	-	36090	38636	-	-
Motivation and scholarships for gifted youth for R&D work	259698	-	3450	45389	210859	-
Purchase of scientific and specialised literature from abroad and access to scientific and specialised databases	265714	-	261114	4600	-	-
Publication of scientific publications and organisation of scientific events	95747	4902	33262	34046	23537	-
Encouraging activities of scientific and professional societies, associations and similar organisations to promote science and technology	13750	-	-	-	13750	-
Priority programmes according to the Strategy	43500	-	43500	-	-	-
Other programmes according to the Strategy and Law	1740639	-	1740639	-	-	-

2. Budgetary funds of the Republic of Serbia for R&D (actual outlays) by socio-economic objectives and sectors, 2017

thous. RSD

Socio-economic objectives of researches	Sectors, total	Non-financial (business) sector	Government sector	Tertiary education	Private non-profit sector	International organisations
TOTAL	17899912	698631	10256579	4701656	430146	1812900
Exploration and exploitation of the Earth	181504	22213	159291	-	-	-
Environment	513753	11677	502076	-	-	-
Exploration and exploitation of space	273350	-	273350	-	-	-
Transport, telecommunications and other infrastructures	1415776	200203	1215273	-	-	-
Energy	231610	5843	225767	-	-	-
Industrial production and technology	3432022	314951	3116920	151	-	-
Human health	491802	13760	478042	-	-	-
Agriculture	1498558	70937	1427621	-	-	-
Education	859967	4904	531891	89471	234001	-
Culture, recreation, religion and mass media	822757	31985	585077	9550	196145	-
Political and social systems, structures and processes	416914	268	416646	-	-	-
<i>General advancement of knowledge: from general university funds</i>	<i>6200782</i>	<i>1</i>	<i>47128</i>	<i>4340753</i>	<i>-</i>	<i>1812900</i>
R&D related to natural sciences	1872256	1	22724	36631	-	1812900
R&D related to engineering and technology	1259808	-	23966	1235842	-	-
R&D related to medical and health sciences	1341048	-	438	1340610	-	-
R&D related to agricultural sciences	598057	-	-	598057	-	-
R&D related to social sciences	507576	-	-	507576	-	-
R&D related to humanities	622037	-	-	622037	-	-
<i>General advancement of knowledge: from other sources – not from general university funds</i>	<i>610145</i>	<i>21889</i>	<i>326525</i>	<i>261731</i>	<i>-</i>	<i>-</i>
R&D related to natural sciences	261731	-	-	261731	-	-
R&D related to social sciences	348414	21889	326525	-	-	-
Defence	950972	-	950972	-	-	-

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 2017 (%)

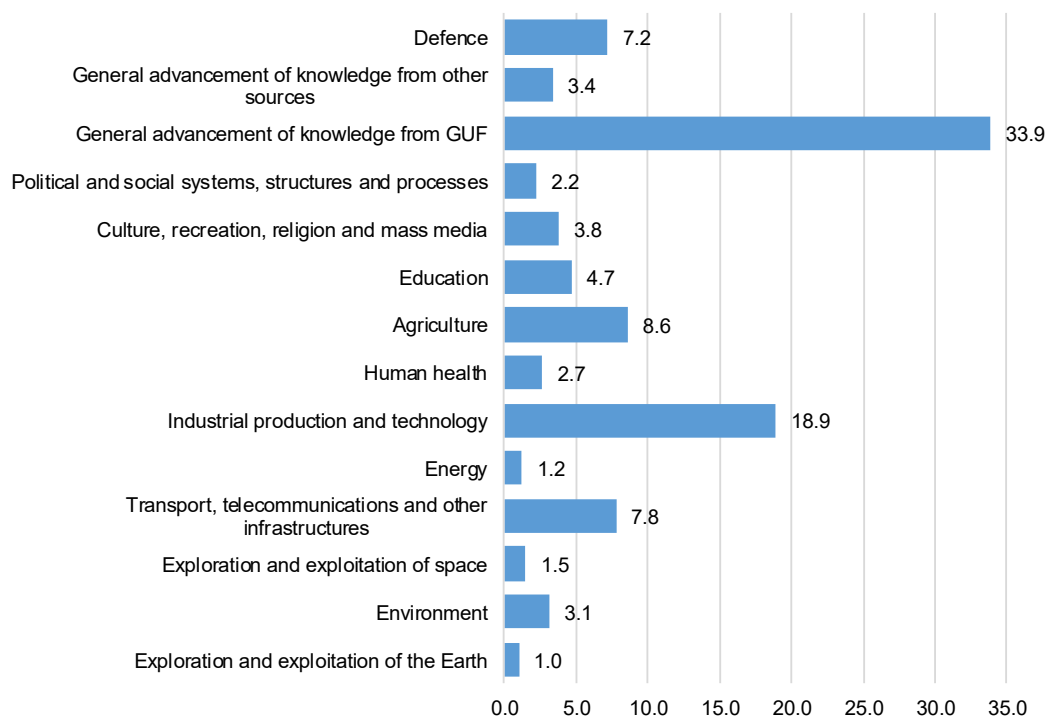


3. Budgetary funds of the Republic of Serbia for R&D by socio-economic objectives, (adopted budget, prior to budget adjustment), 2018

thous. RSD

Socio-economic objectives of researches	Planned budget for 2018
TOTAL	15493285
Exploration and exploitation of the Earth	155667
Environment	485262
Exploration and exploitation of space	234438
Transport, telecommunications and other infrastructures	1203184
Energy	192428
Industrial production and technology	2930262
Human health	411916
Agriculture	1330400
Education	726763
Culture, recreation, religion and mass media	588377
Political and social systems, structures and processes	345533
<i>General advancement of knowledge: from general university funds</i>	<i>5248265</i>
R&D related to natural sciences	1594847
R&D related to engineering and technology	1056453
R&D related to medical and health sciences	1130039
R&D related to agricultural sciences	507638
R&D related to social sciences	428975
R&D related to humanities	530313
<i>General advancement of knowledge: from other sources – not from general university funds</i>	<i>523290</i>
R&D related to natural sciences	224473
R&D related to social sciences	298817
Defence	1117500

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, 2018 (%)



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 2017-2018 in the Republic of Serbia. The survey refers to institutions that finance the R&D activity, direct budgetary funds beneficiaries, which financed in 2017 or were expected to finance the R&D activity in 2018 – direct budgetary funds beneficiaries taking part in the allocation of financial resources for R&D in the Republic of Serbia.

Coverage and comparability

The survey is intended to collect data on budget appropriations and outlays for R&D by socio-economic objectives, including all financing of R&D international programmes or institutions abroad. The survey measures R&D government policy through its financing of R&D activities.

The report was filled in by all the institutions (direct budgetary funds beneficiaries) that financed in 2017 or were expected to finance the R&D activities in 2018 – direct beneficiaries of budgetary funds of the Republic of Serbia taking part in the allocation of financial resources for R&D in the Republic of Serbia.

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 Research and Experimental Development - Frascati Manual, 2002 and 2007; 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 R&D in 13 categories.

Definitions of main concepts

Science is 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 whose 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 to use 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 are 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 economic 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 political boundaries 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.