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Government budget appropriations or outlays for R&D, 2019/2020

–Research and development–

In the Republic of Serbia, in 2019 the amount of 21,856.218 thousand RSD of budgetary funds were spent for the Research and Development (R&D) activity.

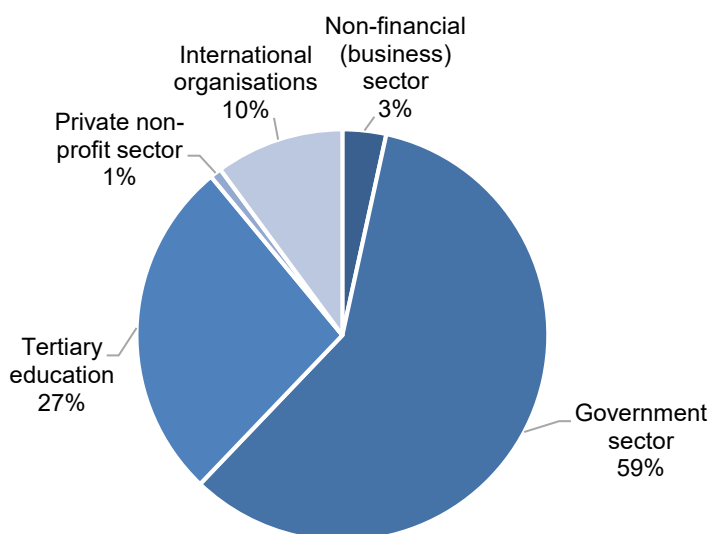
The share of total budgetary funds for R&D in GDP reached 0.40% in 2019.

The largest percentage of the budget for research and development in 2019 came from the government sector (58.7%), followed by the tertiary education sector (26.9%). In total funds for financing research and development, funds from international organizations account for around 10%. The non-financial (business) sector accounts for around 3.4%, while less than 1% 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 2019 were spent on the goal: General Knowledge Improvement - Research and Development funded from the General University Funds - GUF (25.1%). For the goal: Industrial Production and Technology 16.5% were spent, and the least funds were spent on the goal: Exploration and Exploitation of space (0.5%).

The planned government budget appropriations or outlays for the R&D activity in 2019 (before budget adjustment) amounted to 15,954,389 thousand RSD. Most of funds, 26.8%, were intended for the objective General Advancement of Knowledge: R&D financed from the General University Funds.

Graph. 1. Total expenditures for R&D in 2019, by sector (%)

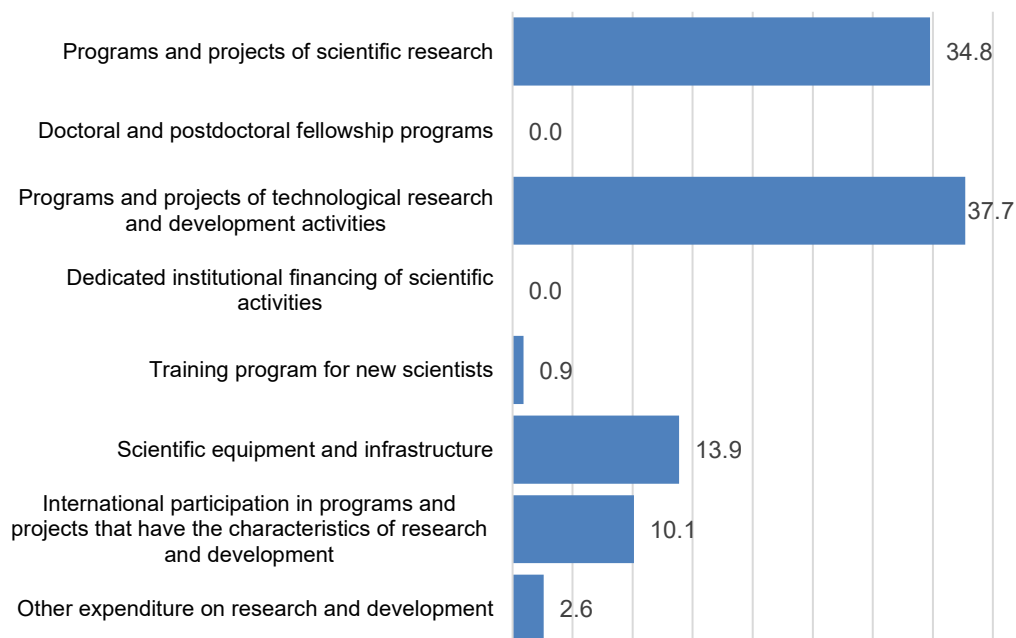


1. Budgetary funds of the Republic of Serbia for R&D (actual outlays) in 2019, by types of programmes and sectors

thous. RSD

Programmes	Total	Non-financial (business) sector	Government sector	Tertiary education	Private non-profit sector	International organisations
Total	21856218	750159	12831293	5868633	198825	2207308
Programs and projects of scientific research						
Doctoral and postdoctoral fellowship programs	7599693	214581	4273943	2779939	1230	-
Programs and projects of technological research and development activities	5967	-	5967	-	-	-
Dedicated institutional financing of scientific activities	8241736	535578	4622246	3083912	-	-
Training program for new scientists	4782	-	-	4782	-	-
Scientific equipment and infrastructure	197595	-	-	-	197595	-
International participation in programs and projects that have the characteristics of research and development	3032376	-	3032376	-	-	-
National contributions to transnational public R&D contractors	2207308	-	-	-	-	2207308
National contributions to transnational public R&D programs across Europe	336427	-	-	-	-	336427
National contributions to bilateral or multilateral public research and development programs established between the governments of EU countries, candidate countries and EFTA countries	336427	-	-	-	-	336427
National contributions to other international programs and projects that have the characteristics of research and development	4934	-	-	-	-	4934
Other expenditure on research and development	78735	-	-	-	-	78735

Graph. 2 The share of budget funds for R&D in 2019 according to programs, %

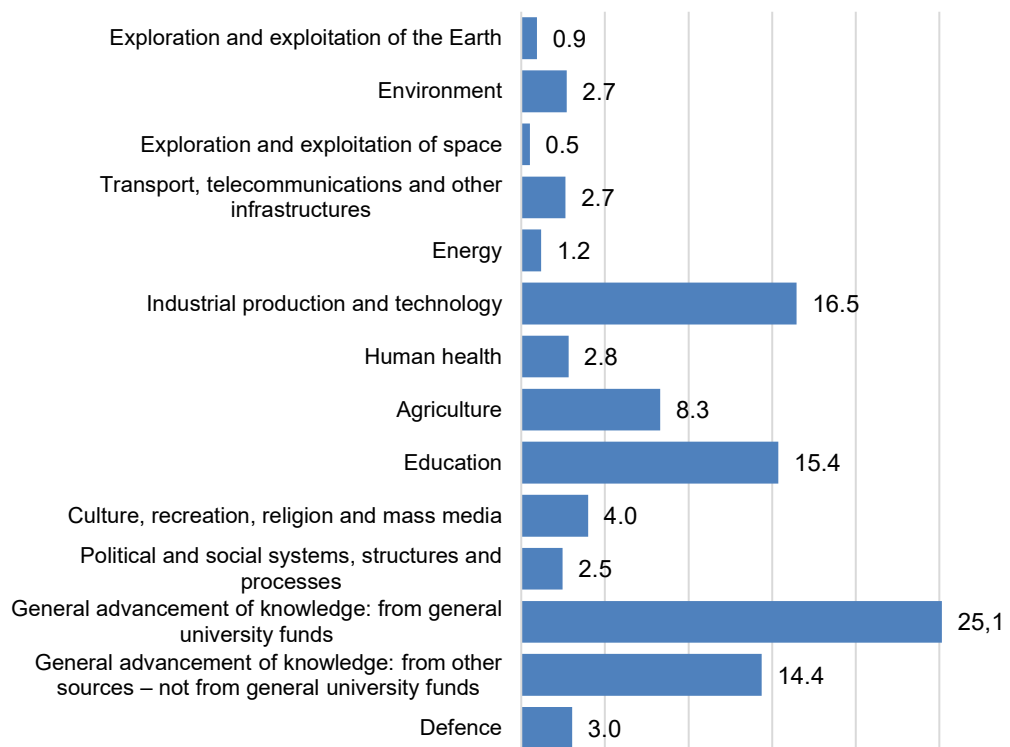


2. Budgetary funds of the Republic of Serbia for R&D (actual outlays) in 2019, by socio-economic objectives and sectors

thous. RSD

Socio-economic objectives of researches	Total	Non-financial (business) sector	Government sector	Tertiary education	Private non-profit sector	International organisations
TOTAL	21856218	750159	12831293	5868633	198825	2207308
Exploration and exploitation of the Earth	205018	25623	179395	-	-	-
Environment	595615	16928	59687	-	-	-
Exploration and exploitation of space	111104	-	111104	-	-	-
Transport, telecommunications and other infrastructures	579347	187639	389923	1785	-	-
Energy	261439	6095	255344	-	-	-
Industrial production and technology	3597877	333929	3261683	2265	-	-
Human health	617261	10845	606415	-	-	-
Agriculture	1816859	105179	1711680	-	-	-
Education	3357750	-	3155373	4782	197595	-
Culture, recreation, religion and mass media	873033	29073	834377	8353	1230	-
Political and social systems, structures and processes	541043	-	541043	-	-	-
General advancement of knowledge: from general university funds	5496401	7311	52833	5436257	-	-
R&D related to natural sciences	23315	300	590	22425	-	-
R&D related to engineering and technology	1570915	2593	17085	1551237	-	-
R&D related to medical and health sciences	1626277	2936	10430	1612911	-	-
R&D related to agricultural sciences	782795	1481	4608	776705	-	-
R&D related to social sciences	603606	-	1881	601726	-	-
R&D related to humanities	889492	-	18238	871254	-	-
General advancement of knowledge: from other sources – not from general university funds	3140125	27536	490089	415191	-	2207308
R&D related to natural sciences	2624572	45	2027	415191	-	2207308
R&D related to humanities	515553	27491	488062	-	-	-
Defence	663346	-	663346	-	-	-

Graph. 3 The share of budget resources for R&D in 2019, by the socio-economic objectives (actual expenditure), %

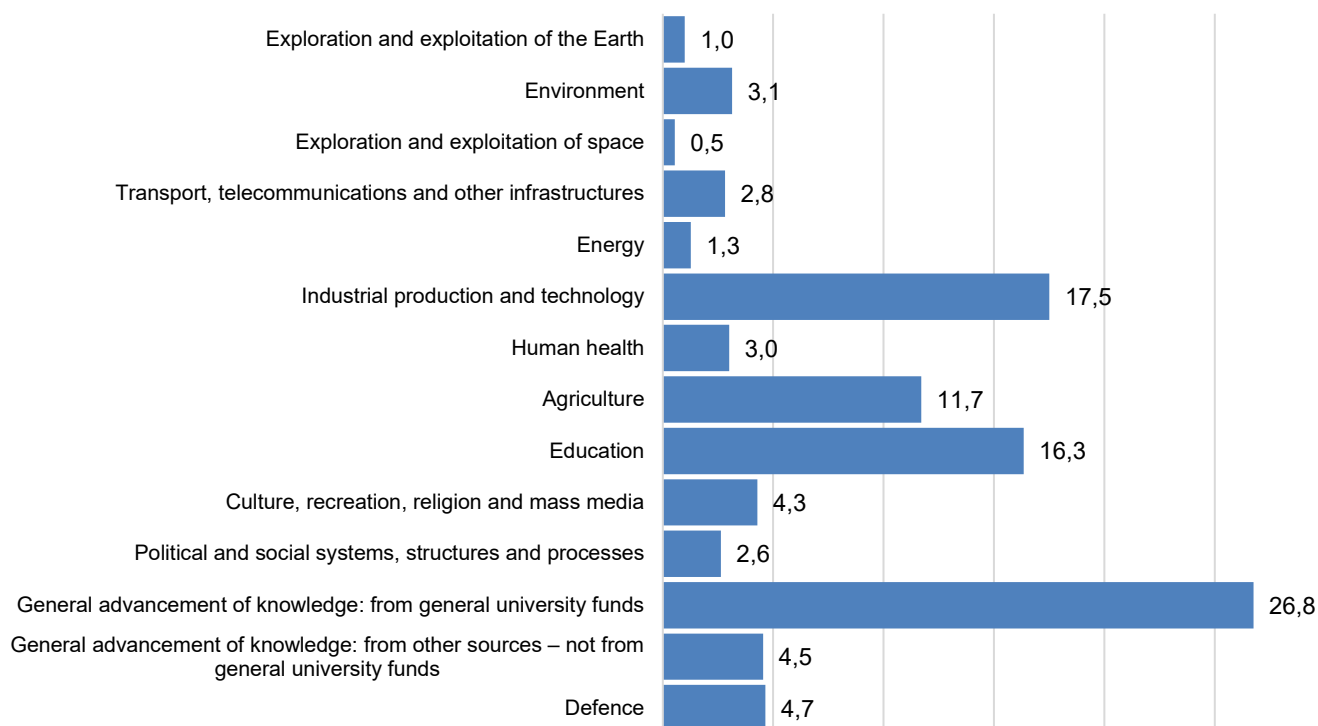


3. Planned budgetary funds of the Republic of Serbia for R&D by socio-economic objectives, (adopted budget, prior to budget adjustment), 2020

thous. RSD

Socio-economic objectives of researches	Planned budget for 2020
TOTAL	15954389
Exploration and exploitation of the Earth	159194
Environment	500825
Exploration and exploitation of space	86270
Transport, telecommunications and other infrastructures	449854
Energy	203003
Industrial production and technology	2793697
Human health	479294
Agriculture	1866951
Education	2607242
Culture, recreation, religion and mass media	683559
Political and social systems, structures and processes	420112
<i>General advancement of knowledge: from general university funds</i>	<i>4267872</i>
R&D related to natural sciences	18104
R&D related to engineering and technology	1219792
R&D related to medical and health sciences	1262779
R&D related to agricultural sciences	607828
R&D related to social sciences	468691
R&D related to humanities	690677
<i>General advancement of knowledge: from other sources – not from general university funds</i>	<i>724318</i>
R&D related to natural sciences	323999
R&D related to humanities	400319
Defence	742200

Graph. 4. The share of planned budget funds for R&D (adopted budget before adjustment), by the objectives, 2020 (%)



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 2019-2020 in the Republic of Serbia. The survey refers to institutions that finance the R&D activity, direct budgetary funds beneficiaries, which financed in 2019 or were expected to finance the R&D activity in 2020 – direct budgetary funds beneficiaries taking part in the allocation of financial resources for R&D in the Republic of Serbia. Based on the legislation, which has been changed, the calculation period for this research was 13 months (December 1, 2018 - December 31, 2019).

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 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).

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 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 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 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 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.