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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 | - | - |
| Оther 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 | - | - | - |
| *International scientific co-operation of interest for the Republic of Serbia* | *1898387* | *1* | *38078* | *47408* | *-* | *1812900* |
| Оbligations of the State to participate in EU programmes | 1584165 | - | 21352 | 26279 | - | 1536534 |
| Оbligations 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 |
|  |  |  |  |  |  |  |
| **ТОТАL** | **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 | - | - | - |
| *General advancement of knowledge: from general university funds* | *6200782* | *1* | *47128* | *4340753* | *-* | *1812900* |
| 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 | - | - |
| *General advancement of knowledge: from other sources – not from general university funds* | *610145* | *21889* | *326525* | *261731* | *-* | *-* |
| 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 |
|  |  |
| **ТОТАL** | 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 |
| *General advancement of knowledge: from general university funds* | *5248265* |
|  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 |
| *General advancement of knowledge: from other sources – not from general university funds* | *523290* |
|  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 (%)**

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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 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 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, ЕU, etc.

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