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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 | - | - | - |
| Оther 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* |
| Оbligations of the State to participate in EU programmes | 1459698 | 22 | 16577 | 22727 |  | 1420372 |
| Оbligations of the State in bilateral scientific programmes | 21926 | - | 11194 | 10732 | - | - |
| Оther 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 | Abroadtotal |
|  |  |  |  |  |  |  |
| **ТОТАL** | **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 |
|  |  |
| **ТОТАL** | **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, ЕU, etc.

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