



Population (2017): 7,02 million (World Bank)

GDP (2017): 41,4 billion USD (World Bank)

89th largest economy in the world in 2017 (World Bank)

Global Innovation Index (2018): 55/126 (World Intellectual Property Organization)

Global Competitiveness Index (2017-2018): 78/137 (World Economic Forum)

Gross domestic expenditure on R&D in % of GDP (2017): 0,89 (EUROSTAT)

Scientific/technical journal articles per million inhabitants (2016): 712,1 (World Bank)

Ease of Doing Business score (2018): 73,13 (World Bank)



Dam of the Iron Gates - Serbia - Rumania

@ [www.all-free-photos.com](http://www.all-free-photos.com)

# EURAXESS members in focus: Serbia

## Introduction of the national research landscape

### Outlook of R&D ecosystem

In terms of both quantity and quality, R&D landscape is dominated by **state and public research organisations**. There are seven public universities with 89 faculties acting as independent legal units involved in tertiary education and R&D. Some of the universities host research institutes, while the other organisations are either independent or affiliated to Serbian Academy of Sciences or Arts.

### Research funding

Most of the research funding comes from the Ministry of Education, Science and Technological Development which runs the framework, comprised of the basic science, technology development and interdisciplinary research actions. However, this framework is expected to be significantly revamped in 2019, as a result of recently passed legislation on National Science Fund.

Since 2011, the [Serbian Innovation Fund](#) implements various financial aid instruments for fostering the establishment of new and strengthening the existing innovative companies, by allowing them to access venture capital markets, and by attracting foreign direct investment in the high-tech research and development sectors. It also awards successful industry-academia collaborations through the Collaborative Grant Scheme for R&D Organisations and Private Sector Enterprises; it helps different stakeholders focusing on the technology transfer aspect of innovation through the Technology Transfer Facility programme; and it implements a number of mini and matching grants.

### Research impact

For years, especially since 2009, Serbia is regularly being endorsed as a rising star in different scientific fields as it has achieved the highest percentage increase in total citations, based on bi-monthly Essential Science Indicators from Clarivate Analytics. According to [Scimago Journal & Country rank](#), Serbia is ranked as 57<sup>th</sup> in number of citations, better than many European countries.

Regarding the participation in Horizon 2020 framework, Serbia is one of the top performers in the region, with 76.3 million € of net EU contribution and 158 unique participants. When considering its very low national investment in science and research (0.89% of GDP in 2017), all this can be taken as an exceptional result and reflection of its highly skilled work force in this domain.

### Open science

In 2018, Serbian government formally adopted a [national open science policy](#). The policy mandates deposits of all publicly funded research in open access (OA) repositories and recommends OA to research data. It also places a call to organisations for adopting institutional policies and repositories in the next six months. This is the latest addition to previous initiatives, such as local directories of OA journals ([doiSerbia](#) and [SCIndeks](#)) and [national open access portal for PhD theses and dissertations](#).

### About PhD studies

All public universities have accredited doctoral programmes in different scientific fields, welcoming also international students. The outlook of those programmes



### BioSense institute

[BioSense Institute](#) is one of the success stories. It is a research organisation striving at introducing advanced IT in agriculture, food safety, ecology and environmental protection. It was kicked-off in 2006 and today it is recognised as European Centre of Excellence, with 190 researchers, state of the art equipment and facilities and immense networking capital gained in multiple collaborative projects, funded by FP7, Horizon 2020 and other frameworks. BioSense has established the first Living Lab for precision agriculture which actively engages relevant domestic SMEs, companies, farmers, decision makers and other beneficiaries. It hosts many other forms of collaboration such as demonstration farms, shared research facilities, accelerator and more.

### READ OUR EURAXESS countries in FOCUS:

EURAXESS is supported by over 40 countries, of which we profile one in each of our quarterly EURAXESS LAC newsletters. In this edition, we zoom in on SERBIA.

Focuses on other EU countries are available [here](#) / PUBLICATIONS tab.

So far, we featured the following countries: Albania, the Czech Republic, Croatia, Estonia, Greece, Hungary, Iceland, Lithuania, Luxembourg, the Netherlands, Portugal, Slovakia, and Spain.

is very similar to the ones of other European academic organisations; it takes 3 years to complete, it involves attending courses (typically in the first 3 semesters) and independent research (second 3 semesters). The admission to a doctoral programme is conditioned to the completion of a master's degree programme. Typically, the successful completion is conditioned by the results published or accepted for publication in scientific journals with a given impact factor associated to it. Every doctoral student has typically one mentor. Formally, there are three committees involved in the development of a doctoral thesis. First, there is the committee approving the subject and the title of the thesis. Second, the committee responsible for evaluating the thesis, and the third committee, appointed for the defense procedure.

### Top research performers

Besides major public universities in Belgrade, Novi Sad, Kragujevac and Niš, top research performers (based on national funding) in Serbia include: [Institute of Physics](#), [Vinča Institute of Nuclear Sciences](#), [Institute Mihajlo Pupin](#), [Institute for Biological Research „Siniša Stanković“](#) and [Institute of Chemistry, Technology and Metallurgy](#).

### International cooperation

International cooperation is one of the top priorities of the national R&D ecosystem. All universities have very active international cooperation offices, while there are also similar institutional initiatives on the faculty level. Serbia is associated to the European research funding frameworks since FP7 (2007) and it is considered as an equal opportunity stakeholder in ERA. It participates in the H2020 programme development (19 Programme Committee members), it is committed to supporting local scientists in grant development through the network of National Contact Points (17 NCPs) and mobility (5 EURAXESS Centres). For years, Serbian government maintains its own fund of science collaboration grants with a number of countries. Bilateral cooperation with People Republic of China is one of the recent additions to this programme and it has shown to be quite successful in the first round of funding (2017-2019).

### Serbian participation in Marie Skłodowska-Curie Actions (MSCA)

According to [MSCA Country profile](#), 40 foreign researchers have been hosted by Serbian R&D organizations in period 2014-2020, most of them in RISE actions. However, as the interest in national R&D landscape for participation is growing (68 different organizations have participated in some MSCA action in the period above), this number is expected to significantly increase in the future.

### Working as a researcher and living in Serbia

Since 2013, Serbian organisations are involved in achieving the highest level of commitment to the principles of [The European Charter and Code for Researchers](#) (so called, Charter and Code), demonstrating their care for human resources as the Country's most valuable asset. In the period of 2013-2019, all public universities have been awarded HR Excellence in Research label by the European Commission as an endorsement to successfully implemented HR management policies.

Work culture in Serbia is similar to the one dominant in Mediterranean countries. People prefer informal behaviour and open communication; they cherish personal relationships. Serbs tend to respect the deadlines, agreements and obligations. Fluency in foreign language (especially English) is very high.

According to the [statistical office of Republic of Serbia](#), out of 16,000 researchers employed in different R&D organisations (including industry), 50.04% are women. Some under-representation is visible at management layers though: 38.3% of all managers of R&D organisations are women.



Despite the rising quality of living and modern facilities, Serbia is still a cheap country to live in. Based on [Numbeo online service](#) index, it is ranked 89<sup>th</sup> of 119 countries, more expensive than Turkey, Philippines, Mexico and India, slightly cheaper than Russia, Bulgaria, Poland and China. According to Numbeo crowd-sourced data, the typical basket of goods and services for 3-member household with apartment rent costs approx. 1,600 EUR (for comparison, the cost of the same basket in Amsterdam is 5,000 EUR, in Boston, USA: 6,400 EUR).

On the latest release of the Transparency International corruption perception indexes, Serbia takes 72<sup>nd</sup> position (of 176 countries), with the global average score.

### EURAXESS Serbia

Serbia joined EURAXESS in 2009. Since 2011, 5 EURAXESS Service Centres are continuously providing support to researchers on the topics such as relocation and career development. Since 2017, two Career Development centers (in Belgrade and Niš) are actively involved in the network. EURAXESS Serbian coordinator (Faculty of Mechanical Engineering, University of Niš) is continuously and actively engaged in network collaboration, especially in EURAXESS portal development (leader of TOPIV WP8 Open EURAXESS portals) and Open Science initiative, HRS4R assessment, different think-tanks (WG Network Management) and service data analysis (EURAXESS Service Data tool).



### Serbian researchers in Brazil (success stories)



[Vanja's LinkedIn](#)

**Vanja Dakic** earned her bachelor and master's degrees in Molecular Biology at the University of Novi Sad, Serbia. In 2017, she earned a PhD in Biomedical Sciences from the Federal University of Rio de Janeiro, working with Prof. Stevens Rehen. In her thesis, she used different models of the human nervous system to explore the effects of psychoactive substances *in vitro*. Currently, she is a researcher at L'Oréal Brasil Research and Innovation, working on the production and development of reconstructed skin models to predict the safeness of ingredients and products. One of the main research projects she is part of seeks to better understand skin physiology and wants to develop a model with enhanced neuro-inflammation predictivity that would facilitate the development of next generation beauty products for sensitive and aged skin.



[Milica's LinkedIn](#)

**Milica Markovic** holds a PhD in Biotechnology, with focus on Microbiology, from the University of Novi Sad, Serbia. Thanks to the Collaborative Research Programme (CRP) – ICGEB Research Grants, she moved from Serbia to Brazil and started her postdoctoral research at the Laboratory of Environmental Molecular Biology from the Federal University of Rio de Janeiro (UFRJ), as well as at Bio Bureau Biotecnologia, a biotech company hosted by UFRJ. She has been working on a wide range of R&D projects, dealing with genetically modified bacteria for industrial purposes, genetically modified microorganisms for the cosmetics' industry, and mollusc infestation control by genetic induction of infertility. Her current role in the local team is to upscale processes and she has been directly involved with the lab's quality performance, including its own management.