

**Deloitte.**

Researchers' Report 2014

**Country Profile: Serbia**



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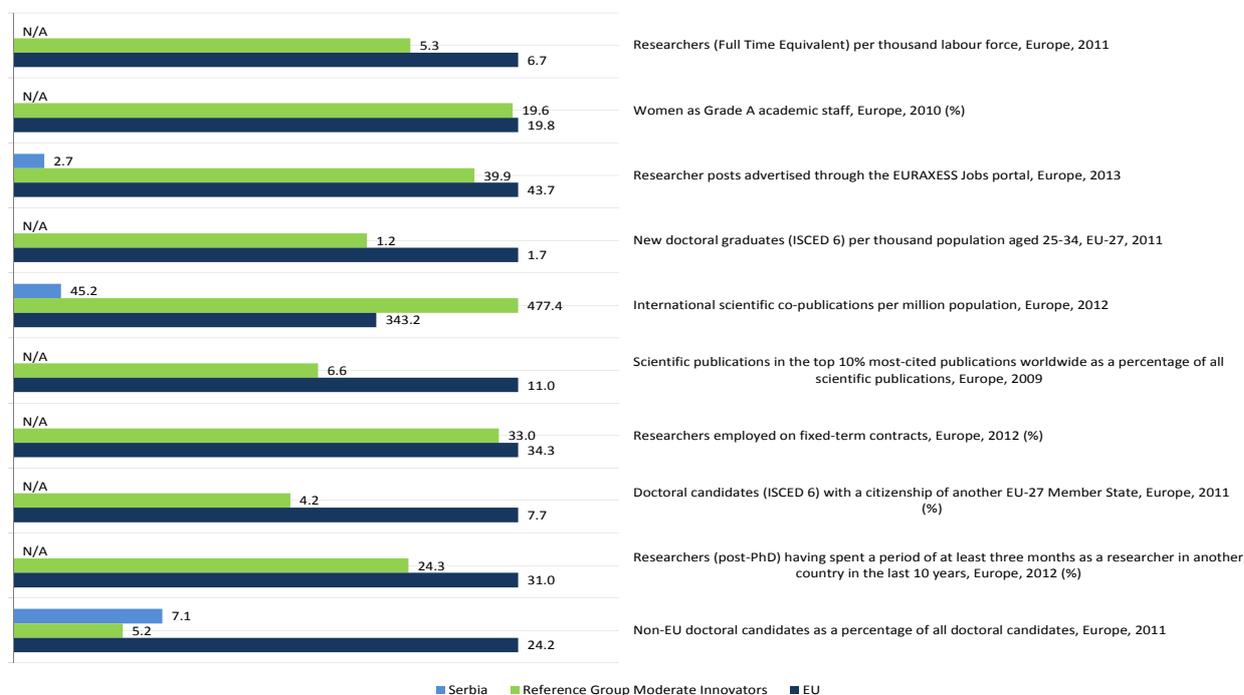
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## 1. Key data

### Key indicators measuring the country's research performance

The figure below presents key indicators measuring Serbia's performance on aspects of an open labour market for researchers against a reference group and the EU average<sup>1</sup>.

Figure 1: Key indicators – Serbia



Source: Deloitte

Data: Eurostat, SHE Figures, EURAXESS Jobs Portal, UNESCO OECD Eurostat education survey, Innovation Union Scoreboard 2014, MORE2.

Notes: Based on the average innovation performance, Serbia belongs to the group of "Moderate innovators" showing a performance below that of the EU average<sup>2</sup>.

### Stock of researchers

The table below presents the stock of researchers by Head Count (HC) and Full Time Equivalent (FTE) and in relation to the active labour force.

Table 1: Human resources – Stock of researchers

Indicator	Serbia	EU Average/Total
Head Count per 1 000 active labour force (2011)	N/A	10.55
Head Count (2011)	13 609	2 545 346
FTE per 1 000 active labour force (2011)	N/A	6.75
Full time equivalent (FTE) (2011)	11 720	1 628 127

Source: Deloitte

Data: Eurostat

## 2. National strategies

The Republic of Serbia is an associate country of the European Union and by signing the Memorandum of Understanding in 2007, Serbian candidates acquired access to European funding, for instance under the 7th Framework Programme.

The Serbian research system is centralised and governed by the Ministry of Education, Science and Technological Development<sup>3</sup>. The Ministry was established in March 2011 and is the legal successor of the previous Ministry

<sup>1</sup> The values refer to 2013 or the latest year available

<sup>2</sup> European Commission (2014), "Innovation Union Scoreboard 2014"

<sup>3</sup> Available at: <http://www.mpn.gov.rs/sajt/>

of Science and Technological Development. The table below presents key programmes and initiatives intended to implement the strategic objectives of training enough researchers to reach Serbia's R&D targets, promoting attractive working conditions, and addressing gender and dual career issues.

**Table 2: National strategies**

Measure	Description
<b>Human Resource Development Programme 2010-2015</b>	<p>The investment priorities of this Ministry programme for the period 2010-2015 are:</p> <ul style="list-style-type: none"> <li>– A human resources programme which will engage individuals in the Serbian scientific diaspora in joint projects and other initiatives;</li> <li>– The <i>Petnica</i> research centre which welcomes young trainees, many of whom become leaders of science research in Serbia;</li> <li>– The <i>Mathematics</i> high school campus in Belgrade, which enrolls the most talented young mathematicians and others interested in natural sciences from across Serbia;</li> <li>– The new science and innovation centre in Belgrade for popularisation of science in the general public, including young people.</li> </ul> <p>The total budget of the programme is approximately EUR 33 million.</p>
<b>Strategy on Science and Technological Development of the Republic of Serbia for the period 2010-2015</b>	<p>The overall objective of the Strategy is to develop a national innovation system where scientists reach European standards and to promote technological development of the economy. The strategy defines seven national priorities in the area of science and technology. It aims to deal with the fact that a significant number of highly qualified young scientists and engineers leave the country and to attract students to opt for technology and mathematics studies. Finally, the strategy encourages partnership between academia and industry through an Innovation Fund<sup>4</sup>, a new and ongoing legal framework for intellectual property, incentives and support for innovation activities.</p>
<b>Strategy on Development of Vocational Education in the Republic of Serbia (2005)</b>	<p>The strategy provides a complete picture of the further development of vocational education and training in Serbia. It contains a number of recommendations to be implemented by the Government and the Ministry of Education, Science and Technological Development in legislative activity, institutional development, human resources, gathering information from the labour market, the modernisation of the educational curriculum, the organisation of educational processes and modernisation of schools management.</p>
<b>National reports and legislation, including provisions on the profession of researcher</b>	
National Youth Strategy, Strategy on Adult Education Development in the Republic of Serbia, Strategy on Career Guidance and Consulting in the Republic of Serbia, Adult Education Development Strategy, Regulatory Reform Strategy in the Republic of Serbia, etc.	
Law on Higher Education (2005), Law on Innovative Activities (2010), Law on Copyright and Related Rights (2012), Law on Scientific and Research Activities (2010)	

Source: Deloitte

### 3. Women in the research profession

#### Measures to support women researchers in top-level positions

Serbia does not have concrete measures to support women in top-level positions in research, technology and innovation. However, the government supports advancement of women in the economy as a whole through the National Strategy for the Advancement of Women and Promoting Gender Equality adopted in 2009 and its Action Plan to implement the National Strategy for the Advancement of Women and Gender Equality for the Period 2010-2015 drawn up by the Ministry of Labour, Employment and Social Policy.

#### Parental leave

In Serbia, women researchers with open-ended employment contracts are paid from social security funds, during their maternity leave. Researchers with fixed-term contracts are also paid during their maternity leave; however, they lose those benefits after expiry of the contract.

Researchers on stipends may interrupt their stipends for up to one year (and continue their stipend after that period). The duration of maternity leave is up to 365 days for both permanent employment contracts and stipends.

<sup>4</sup> <http://www.innovationfund.rs/>

## 4. Open, transparent and merit-based recruitment

### Open recruitment in institutions

Table 3: Open recruitment in higher education and public research institutions

Do institutions in the country currently have policies to ...?	Yes/No	Description
– publish job vacancies on relevant national online platforms	No	-
– publish job vacancies on relevant Europe-wide online platforms (e.g. EURAXESS)	No	-
– publish job vacancies in English	No	-
– systematically establish selection panels	Yes	-
– establish clear rules for the composition of selection panels (e.g. number and role of members, inclusion of foreign experts, gender balance, etc.)	Yes	Typically, the selection panel is composed of 3-5 experts, of whom at least one works in another institution. No gender balance is required.
– publish the composition of a selection panel (obliging the recruiting institution)	Yes	-
– publish the selection criteria together with job advert	Yes	-
– regulate a minimum time period between vacancy publication and the deadline for applying	Yes	Typically, the period between vacancy publication and the deadline for applying is of only 15 days.
– place the burden of proof on the employer to prove that the recruitment procedure was open and transparent	No	-
– offer applicants the right to receive adequate feedback	Yes	-
– offer applicants the right to appeal	Yes	-

Source: Deloitte

### EURAXESS Services Network

In 2013, the number of researcher posts advertised through the EURAXESS Jobs portal per thousand researchers in the public sector was 66.0 in Norway compared with 39.9 among the Innovation Union reference group and an EU average of 43.7<sup>5</sup>.

Approximately 25 research institutions have joined the Serbian Mobility Network by signing the Declaration of Commitment. The portal is fully operational<sup>6</sup>.

## 5. Education and training

### Measures to attract and train people to become researchers

In Serbia, there are many activities aimed at popularising science among young people. For example, the Ministry of Education, Science and Technological Development has a programme offering young researchers the possibility of participating in knowledge Olympiads and other forms of competition. Since 2010 the Centre for the Promotion of Science has been actively engaged in bringing the science community closer to a wider public, with the ambition of becoming the leading institution in terms of bringing together, and providing help and support for all science popularisation organisations and initiatives across Serbia.

### Funding of doctoral candidates

The estimated proportion of the total population of doctoral candidates receiving funding in 2013 is 70%. In 2013, a total of 623 doctoral candidates received stipends.

<sup>5</sup> See Figure 1 “Key indicators – Norway”

<sup>6</sup> Overall progress in EPR implementation, 2009, Annex II

### Measures to increase the quality of doctoral training

In the Republic of Serbia, some EUR 60 million was allocated (in 2006 under the umbrella of FP6) to establish Centres of Excellence in priority research fields, such as:

- Energy and environment (national energy institute and national laboratories for water, soil and air quality);
- Materials science (National Physics, Materials Science and Nanotechnology Laboratory – using the existing Institute of Physics infrastructure);
- Agriculture and food (Centre of excellence in Novi Sad using the capacities of the Institute for food technologies)<sup>7</sup>.

## 6. Working conditions

### Measures to improve researchers' funding opportunities

The Ministry of Education, Science and Technological Development is implementing the following programmes to boost research careers and support researchers financially:

- Programme supporting basic research for the research cycle 2011-14 (BR programme);
- Programme supporting research in the field of technological development for the research cycle 2011-14 (TD programme);
- Programme of co-funding for integrated and interdisciplinary research for the research cycle 2011-14 (IIR programme) to support the integration of basic, applied and development research as well as to utilise R&D resources fully, emphasising commercialisation of R&D activities and results;
- Programme of providing and maintaining scientific research equipment and scientific research facilities for the research cycle 2011-14 (SREF programme)<sup>8</sup>.

### Remuneration

For information, see the country profile on remuneration of researchers from the MORE2 study on the EURAXESS website.<sup>9</sup>

### Researchers' Statute

In Serbia, researchers have the same rights as other employees, with one exception. These are researchers with a temporary contract for three to five, with extension made conditional on the scientific results produced in the previous period.

### 'European Charter for Researchers' & 'Code of Conduct for the Recruitment of Researchers'

The Ministry of Education, Science and Technological Development, together with the Bridgehead Organisation, organise 'info days' to promote the 'Charter & Code'. As of early 2014, four institutions had signed Declarations of endorsement of the Charter & Code.

### Autonomy of institutions

There are seven public universities with 89 faculties, and 10 private universities with 60 private faculties. R&D activities in the higher education sector are mostly financed from the government budget.

The autonomy of the higher education system is guaranteed by the Law on Higher Education (2005), which fully implements the Bologna Declaration. Key features of the autonomy are:

- Academic autonomy – right of teachers to decide on what to teach, how to enroll students, organise the programme of study and organise the Higher Education Institution internally;
- Political autonomy – the right to create statutes and other legal documents, the power to appoint the heads of different units (rector, dean, head of department, etc.) and to deal with internal policy conflicts;

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<sup>7</sup> Ministry of Science and Technological Development, Republic of Serbia, "Europe and Serbia – Equal Opportunity Partners in ERA", PPT presentation, EURAXESS in Serbia – European, regional, and national perspectives, March 7, 2011, Kopaonik.

<sup>8</sup> Serbia Country Report. Erawatch, Available at:

[http://erawatch.jrc.ec.europa.eu/erawatch/opencms/information/country\\_pages/rs/country?section=Overview](http://erawatch.jrc.ec.europa.eu/erawatch/opencms/information/country_pages/rs/country?section=Overview) Accessed 23.04.1012.

<sup>9</sup> <http://ec.europa.eu/euraxess/index.cfm/services/researchPolicies>

- Financial and managerial autonomy – freedom to decide on salaries, tuition fees, allocation of governmental funds, look for additional funds, as well as recruit teaching staff, researchers and other staff<sup>10</sup>.

### Career development

Serbia offers clear career prospects to researchers. The advancement of researchers in their career is defined by the “Rules of procedure and method of evaluation and quantitative expression of scientific results of researchers” issued by the Ministry for Education, Science and Technological Development. There are five stages:

1. Apprentice (novice) researcher;
2. Associate researcher;
3. Research associate;
4. Senior research associate;
5. Principal research fellow.

All researchers have fixed-term contracts. These are for three years for young researchers and five for scientists. Only scientific advisors have permanent contracts. Once the contract expires, a public competition has to be published for researchers in the same or higher rank.

### Social security benefits (sickness, unemployment, old-age)

All researchers, regardless of the type of contract or age, are entitled to sickness benefits. However, researchers receiving stipends do not enjoy health cover.

Only researchers with permanent contracts have access to unemployment benefits.

## 7. Collaboration between academia and industry

The Mini Grants programme, funded by the Innovation Fund, aims to stimulate the creation of innovative enterprises and expand employment opportunities for young graduates. The scheme provides support of up to EUR 100 000 per grant for developments in life sciences, new materials and nanotechnologies, environmental and climate protection, energy and energy efficiency, food and agriculture, and information and communication technologies (ICT)<sup>11</sup>.

## 8. Mobility and international attractiveness

In 2011, the percentage of non-EU doctoral candidates as a percentage of all doctoral candidates was 7.1% in Serbia compared with 5.2% among the Innovation Union reference group and an EU average of 24.2%<sup>12</sup>.

The Republic of Serbia runs bilateral cooperation programmes with a number of countries (Belarus, China, Croatia, France, Germany, Hungary, Slovakia, Slovenia and Switzerland). This has resulted in the co-financing of R&D projects carried out by teams consisting of researchers from both countries.

Cooperation agreements are ongoing with Austria, Czech Republic, Greece, India, Portugal, Russia, Spain and US<sup>13</sup>.

### Measures aimed at attracting and retaining ‘leading’ national, EU and third country researchers

The Ministry of Education, Science and Technological Development has programmes for co-financing researchers from abroad to come and work in Serbia. In 2013 the Ministry awarded 29 scholarships to foreign students and supported visits by 120 professors from abroad.

There are also many bilateral programmes, mainly with European countries, to finance short-term stays of researchers in Serbia.

<sup>10</sup> Serbia Country Report. Erawatch, Available at: [http://erawatch.jrc.ec.europa.eu/erawatch/opencms/information/country\\_pages/rs/country?section=Overview](http://erawatch.jrc.ec.europa.eu/erawatch/opencms/information/country_pages/rs/country?section=Overview) Accessed 23.04.1012.

<sup>11</sup> Ibid

<sup>12</sup> See Figure 1 “Key indicators – Serbia”

<sup>13</sup> Serbia Country Report. Erawatch, Available at: [http://erawatch.jrc.ec.europa.eu/erawatch/opencms/information/country\\_pages/rs/country?section=Overview](http://erawatch.jrc.ec.europa.eu/erawatch/opencms/information/country_pages/rs/country?section=Overview) Accessed 23.04.1012.

**Inward mobility (funding)**

Serbia does not provide funding for inward mobility including the return of its own researchers from abroad.

**Outbound mobility**

The Ministry of Education, Science and Technological Development has programmes for co-financing study visits by graduate students and scholars abroad.