

**Deloitte.**

Researchers' Report 2014

**Country Profile:  
Montenegro**



## TABLE OF CONTENTS

<b>1. KEY DATA</b>	<b>3</b>
<i>Stock of researchers</i>	3
<b>2. NATIONAL STRATEGIES</b>	<b>3</b>
<b>3. WOMEN IN THE RESEARCH PROFESSION</b>	<b>4</b>
<b>4. OPEN, TRANSPARENT AND MERIT-BASED RECRUITMENT</b>	<b>4</b>
<i>Recruitment system</i>	4
<i>Open recruitment in institutions</i>	4
<i>EURAXESS Services Network</i>	5
<b>5. EDUCATION AND TRAINING</b>	<b>5</b>
<i>Measures to attract and train people to become researchers</i>	5
<i>Doctoral graduates by gender</i>	5
<i>Funding of doctoral candidates</i>	5
<i>Measures to increase the quality of doctoral training</i>	6
<b>6. WORKING CONDITIONS</b>	<b>6</b>
<i>Measures to improve researchers' funding opportunities</i>	6
<i>Remuneration</i>	6
<i>'European Charter for Researchers' &amp; 'Code of Conduct for the Recruitment of Researchers'</i>	6
<i>Autonomy of institutions</i>	6
<i>Shift from core to project-based funding</i>	7
<i>Social security benefits (sickness, unemployment, old-age)</i>	7
<b>7. COLLABORATION BETWEEN ACADEMIA AND INDUSTRY</b>	<b>7</b>
<b>8. MOBILITY AND INTERNATIONAL ATTRACTIVENESS</b>	<b>8</b>
<i>Measures aimed at attracting and retaining 'leading' national, EU and third country researchers</i>	8
<i>Inward mobility (funding)</i>	8
<i>Outbound mobility</i>	8
<i>Access to cross-border grants</i>	8

# 1. Key data

## 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	Montenegro	EU Average/Total
Head Count per 1 000 active labour force (2011)	N/A	10.55
Head Count (2011)	1 546	2 545 346
FTE per 1 000 active labour force (2011)	N/A	6.75
Full time equivalent (FTE) (2011)	406	1 628 127

Source: Deloitte

Data: Eurostat

## 2. National strategies

The table below presents key programmes and initiatives intended to implement the strategic objectives to train enough researchers to reach Montenegro's R&D targets, to promote attractive working conditions and to address gender and dual career issues.

Table 2: National strategies

Measure	Description
<b>Action Plan for implementation of the Strategy for Scientific Research Activities 2012-2016</b>	The Action Plan was adopted by the Government of Montenegro on March, 2013. The activities based on the Strategy goals area: Development of the Scientific Community (Development of Scientific Research Infrastructure, Human Resource Development, Improvement of research and development policies and science in society); Fostering bilateral and multilateral cooperation (support for participation in EU and International Programmes and fostering mobility of researchers); and cooperation between the scientific research community and the business sector (establishing the first Science and Technology Park in Montenegro, support to SMEs to conduct research and innovation and improvements to legislation in the field of innovation).
<b>Amended Higher Education Act (2010, 2011)</b>	The amended Higher Education Act (replacing that of 2003) introduced the following changes: the integrated university, the three-cycle educational system, the European Credit Transfer System (ECTS), the Diploma Supplement and the Council of Higher Education and Quality Assurance (internal and external). The amended Act also inserted changes related to the composition of the Council of Higher Education and its role. Finally, it also introduced the idea of State financing of study programmes proposed either by public or private HEIs if they are of public interest. Students at private HEIs can also apply for student loans.
<b>Amendments to the Law on Scientific Research Activities (2010)</b>	The Law on Scientific Research Activities aims to promote integration with the ERA and EU framework programmes for research and development, and other international programmes, introduce international quality standards as well as increase R&D investment and promote networking of researchers at national and international levels. The new instruments introduced by the Law are: <ul style="list-style-type: none"> <li>- Programmes of public interest (14 programmes);</li> <li>- Legal regulation for the first time of the possibility of achieving the status of the Centre of Excellence; and</li> <li>- Facilitated conditions for licensing scientific research institutions (both private and public).</li> </ul>
<b>Amendments to the Strategy for Scientific and Research Activity 2012-2016 (2012)</b>	In 2011, the Ministry of Science published a call for co-financing of national scientific research projects in the 10 priority research areas (cycle 2012-2015) of the Strategy for Scientific and Research Activity 2012-2016. A total of EUR 5 million was available and 104 research projects received funding. <p>The Government of Montenegro in December 2012 adopted Amendments to the Strategy for Scientific and Research Activities (2012-2016), which set three strategic goals:</p> <ul style="list-style-type: none"> <li>- Development of the scientific research community;</li> <li>- Strengthening multilateral, regional and bilateral cooperation; and</li> <li>- Cooperation between the scientific research community and the business sector.</li> </ul> <p>The Strategy recognises ten priority research fields: Energy; Identity; ICT;</p>

Measure	Description
	Competitiveness of the National Economy; Human Medicine and Health; Science and Education; New materials, products and services; Sustainable Development and Tourism; Agriculture and Food; and Transport.  All projects are financed by the Ministry of Science in cooperation with the Ministry of Agriculture and Rural Development, Ministry of Health, Ministry of Information Society, Ministry of Sustainable Development and Tourism, Ministry of Education and Ministry of Culture.
<b>Programme of accession of Montenegro to the European Union for period 2014-2018</b>	The programme of accession of Montenegro to the European Union for the period 2014-2018 includes Chapter 25 "Science and Research" with strategic, legislative, administrative and financial implications.

Source: Deloitte

### 3. Women in the research profession

Some 50%<sup>1</sup> of all researchers in Montenegro are women. The Plan for achievement of gender equality 2013–2016 foresees policy measures to promote gender equality, by engaging more women in science and supporting campaigns for removing cultural and social barriers, and achieving equal opportunities in all research sectors.

The Law on Higher Education (2013) states that Universities are autonomous in the election of their academic and scientific staff. This includes rectors, vice-rectors, deans, vice-deans and directors of research institutes. Based on the opinion of the Council for Higher Education, the Senate of the University adopts a set of criteria for the election. These apply equally to men and women.

The Labour Law (2011) states that employed women are entitled to go on maternity leave for 45 days before giving birth and must stop work 28 days before giving birth. The total duration of maternity leave is one year.

Publicly funded projects/grants allow women researchers to interrupt and extend their contract to go on maternity leave. As soon as the maternity leave comes to an end, the researcher has to continue the research.

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

#### Recruitment system

Higher education and research institutions in Montenegro enjoy full autonomy over the recruitment of all their staff.

The principles of (open and transparent) recruitment are defined in the Statutes of the three Universities, while the Senates of the Universities, based on the opinion of the Council for Higher Education, adopt the criteria for the election of scientific and academic staff.

#### Open recruitment in institutions

The University of Montenegro, the Mediterranean University and the University of Donja Gorica publish calls for vacancies on their own web pages, in daily newspapers, while the University of Montenegro also publishes the vacancies in its own newsletter.

Table 3: Open recruitment in higher education and public research institutions<sup>2</sup>

Do institutions in the country currently have policies to ...?	Yes/No	Description
– publish job vacancies on relevant national online platforms	No	However, it is considered good practice.
– publish job vacancies on relevant Europe-wide online platforms (e.g. EURAXESS)	No	-
– publish job vacancies in English	No	-
– systematically establish selection panels	Yes	The establishment of the selection panels is defined in

<sup>1</sup>According to the data of the new statistical survey implemented by Statistical Office of Montenegro and Ministry of Science, there are in total 1699 researchers in Montenegro, of whom 852 are women

<sup>2</sup> Data referring to the University of Montenegro

Do institutions in the country currently have policies to ...?	Yes/No	Description
		the Statutes of the Universities.
– establish clear rules for the composition of selection panels (e.g. number and role of members, inclusion of foreign experts, gender balance, etc.)	Yes	However, the involvement of foreign experts is not compulsory.
– publish the composition of a selection panel (obliging the recruiting institution)	Yes	The composition of a selection panel is published in the monthly Bulletin of the Universities.
– publish the selection criteria together with job advert	No	The criteria are available online in the Act: criteria for the election to scientific and academic ranks.
– regulate a minimum time period between vacancy publication and the deadline for applying	No	-
– place the burden of proof on the employer to prove that the recruitment procedure was open and transparent	Yes	The Statutes of the Universities call for the publication of the complete report of the selection committee in the Universities' Bulletins.
– offer applicants the right to receive adequate feedback	No	However, it is considered good practice.
– offer applicants the right to appeal	Yes	Applicants are offered the right to appeal, in accordance with the General Administration Law (2011).

Source: Deloitte

### EURAXESS Services Network

EURAXESS Montenegro promotes and facilitates researchers' mobility. The University of Montenegro acts as the national EURAXESS Bridgehead organisation<sup>3</sup>.

## 5. Education and training

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

In 2011, Montenegro there were 1699 researchers (1546 full-time and 153 part-time and external associates) employed in the country's higher education, business enterprise, government and private non-profit sectors.<sup>4</sup>

In order to attract young people to pursue a scientific career, the Government has developed a number of activities and programmes, targeting pupils from elementary schools through to university students, by engaging them in the regular teaching programmes as well as in national competitions on different topics, camps and visits to great European and world research institutions.

The number of students enrolled in tertiary education at the three universities and other Higher Education institutions is 26 054 in the academic year 2012-2013<sup>5</sup>.

### Doctoral graduates by gender

In 2011, there were 11 doctoral graduates in Montenegro: seven men and four women<sup>6</sup>.

### Funding of doctoral candidates

The Ministry of Education publishes an annual Call for co-financing Master and PhD Studies in Montenegro and abroad. The Ministry supported 14 doctoral candidates financially during the academic year 2011-12.

The Ministry of Science also publishes an annual Call for co-financing of scientific research activities and supporting Masters and PhD studies. The Ministry supported 42 doctoral graduates financially in the period 2011-12.

<sup>3</sup> Montenegro Country Page. Erawatch, Available at: [http://erawatch.jrc.ec.europa.eu/erawatch/opencms/information/country\\_pages/me/country?section=Overview](http://erawatch.jrc.ec.europa.eu/erawatch/opencms/information/country_pages/me/country?section=Overview) Accessed 19.04.2012

<sup>4</sup> Source: Statistical Office of Montenegro

<sup>5</sup> Compared to 22 227 in the academic year 2011-12.

<sup>6</sup> Ibid

The Ministry of Science also supports the involvement of PhD students indirectly through its involvement in projects funded under calls for national scientific research projects.

A Higher Education, Research and Innovation for Competitiveness (HERIC) project financed by the World Bank, by establishing Centre of Excellence and financing collaborative research grants, will provide full-time project-based employment and higher remuneration to young researchers.

### Measures to increase the quality of doctoral training

In Montenegro, universities are responsible for the development of high standards of teaching and learning as well as for the career development of students.

Higher Education Institutions (HEIs) continuously conduct self-evaluation, and evaluate and assess the quality of their courses and working conditions. Self-evaluation must involve stakeholders from the institution's management, academic staff and students (at faculty level all students are involved; at university level, participation is organised via student representatives)<sup>7</sup>.

## 6. Working conditions

### Measures to improve researchers' funding opportunities

The Ministry of Science funds national, bilateral and multilateral scientific and research projects and supports the involvement of the Montenegrin scientific research community in international programmes, such as FP7, COST, EUREKA, IAEA, JRC, UNESCO, NATO SPS, etc., as well as international initiatives (Danube Strategy, CEI).

In the light of the positive experience of Montenegrin researchers in EU Programmes, the Ministry of Science in January 2013 expressed interest in participating in the new Framework Programme for Research and Innovation "Horizon 2020". Following inputs from the European Commission ("Minimum of Standards and Key principles") Montenegro completed the NCP list for "Horizon 2020" topics. NCPs from Montenegro have completed their training in Brussels for the area of the Programme for which they are nominated. It is assumed that Montenegro and the EU will reach agreement on a Memorandum of Understanding on associate status under "Horizon 2020".

### Remuneration

For information, see the country profile on remuneration of researchers from the MORE2 study on the EURAXESS website.<sup>8</sup>

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

The 'Charter & Code' has been signed by all three universities in Montenegro. The University of Montenegro has applied to obtain the status of HR Excellence and in 2013 launched the process of designing its internal HR strategy and procedures.

### Autonomy of institutions

The Constitution of Montenegro (*"Official Gazette of Montenegro", no 01/07*) guarantees the autonomy of scientific research institutions (*Article 75*) and freedom of scientific research (*Article 76*).

In addition, the Law on Scientific Research Activities (*"Official Gazette of Montenegro", no 80/10*) stipulates that the freedom and autonomy of scientific work are independent, morally and intellectually, of every political authority and economic power and to be performed with respect for ethical standards and principles of scientific truth and critical thinking (*Article 7*).

The Law on Higher Education (2010) states that "a university is an autonomous institution that, in performing its activities, combines educational, scientific research and artistic work, as the components of the unique process of higher education" (*Article 36*).

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<sup>7</sup> Ibid

<sup>8</sup> <http://ec.europa.eu/euraxess/index.cfm/services/researchPolicies>

### Shift from core to project-based funding

Research activity in Montenegro is primarily conducted by licensed scientific research institutions registered in the Register of the Ministry of Science, i.e. 56 universities, institutes, faculties and companies.

Since the vast majority of public research institutions belong to the Higher Education sector, researchers employed in these institutions are paid from the core university budget (covering teaching, research and administration). There are only a very few researchers who are paid from projects (national or international).

The HERIC project will be a source of project-based funding in future (see chapter 5 “Working Conditions”).

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

Social security issues are determined by general Labour Law. All employed researchers (full time, or part time, paid from core or project funding) are entitled to receive full social benefits.

## 7. Collaboration between academia and industry

In the last few years, the Government of Montenegro has initiated the establishment of links between national SMEs, and scientific and research institutions<sup>9</sup>. The Action Plan on Increasing Researchers’ Mobility (2011-12)<sup>10</sup> set the following goals:

- Strengthening the basis for outgoing mobility;
- Improvement of incoming mobility; and
- Strengthening inter-sectoral mobility.

In 2012, Montenegro became a member of EUREKA and is currently involved in three ongoing projects.

There is also a possibility of cooperation between scientific institutions and companies through joint bilateral calls. Specifically, there are two cooperation projects between a scientific institution from Montenegro and a company from Slovenia (the first implemented in the period 2010/2011, the second implemented in the period 2012/2013).

Also planned are:

- Montenegro’s first Centre of Excellence<sup>11</sup> (within the HERIC project), which will:
  - o Provide strong links between knowledge, research, innovation, i.e. strong links between research and the economy; and
  - o Establish a new generation of talents, who will be employed in the Centre of Excellence and conduct research activity.
- A programme of collaborative grants (also under HERIC). The Ministry of Science announced a Call for collaborative research grants on October 18th, 2013, with deadline for submission December 17th, 2013. A total of 29 research institutions applied. The evaluation process of project applications is still in process. The total amount of funds for the implementation of research grants, for the three years period, amounts up to EUR 2.1 million, while financing of the individual projects would be from EUR 150 000 up to EUR 400 000. This Call is opened to all national licenced scientific research institutions from Montenegro (public and private). However, in order for these research institutions to apply, they need to partner with an institution from abroad as well as a partner from the business sector (industry).
- Montenegro’s first Scientific Technological Park. The Government of Montenegro adopted a Strategic Plan for establishing the first Science and Technology Park in December, 2012, and activities to establish the first Impulse Center “Technopolis” in Nikšić have started. The establishment of a science park in Montenegro is expected to stimulate the development of

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<sup>9</sup> Ibid

<sup>10</sup> This Action Plan was the only one drafted, adopted and fully implemented.

<sup>11</sup> A Call for proposals for the establishment of the first centre of excellence (CoE) was published in June 2013. A pilot CoE would be awarded for a three-year-period, starting from March – April 2014 up until March 2017, at the latest. The overall value of the project is up to EUR 3.7 million. The Call was closed on September 20th, 2013 and a total number of 10 research institutions applied. At the end of December 2013, a two-stage application evaluation process, conducted by external experts, was completed.

knowledge-based entrepreneurship by integrating and connecting small and medium-sized enterprises in cooperation with scientific research institutions to facilitate technology transfer, produce innovations and foster economic development.

- A grant scheme for knowledge transfer between academia and the private sector is planned within the Operational Programme for the 4th Instrument for Pre-Accession Assistance (IPA IV Operational Programme for Human Resource Development). The Ministry of Science is also involved in the activities on Programming IPA II-Financial Perspective 2014-20.

## 8. Mobility and international attractiveness

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

Montenegro has been taking action in many ways to improve and increase the mobility of researchers through: research projects with researchers from abroad; bilateral cooperation with 13 countries; visits and lectures of researchers from abroad during Open Days that the Ministry of Science organises annually, etc.

### Inward mobility (funding)

Since the 1990s, Montenegro has been suffering from a brain drain. The Government has launched some measures to attract young researchers, in particular PhD students, to the University of Montenegro, such as the adoption of the Revision of the Strategy on Scientific and Research Activity (2012-2016).

Researchers' mobility is the responsibility of the Ministry of Science and is implemented by the Ministry's Department for Science, Research and Technological Development and the Department for Higher Education. The University of Montenegro, through its Office for International Cooperation, is in charge of providing administrative support for mobility opportunities.

Montenegro has signed 13 and implemented 5 bilateral agreements (with Austria, Bosnia and Herzegovina, PR of China, Croatia, and Slovenia) for short-term stays (up to 14 days) and long-term stays (from 1 to 3 months). The total number of bilateral projects financed to date is 102: five projects with Austria in 2011-12 and 11 projects in 2013-14; 15 projects with Bosnia and Herzegovina in 2012-13; six projects with PR China for the forthcoming period 2013-14; 12 projects with Croatia in 2011-12 and 15 projects in the 2013-14 cycle; and 14 projects with Slovenia over the period 2010-11 and 24 projects during 2012-13.

### Outbound mobility

The Government funds doctoral students to spend at least one semester at a foreign university during their studies. In addition, PhD graduates, especially those aged 27-34, have the opportunity of spending up to one semester working at a European university on 'unpaid leave'. Universities encourage mobility, and provide mobility opportunities up to one year. However, special approval (from the Rector or the Governing Board) is needed for stays of more than 30 days within a year.

The Ministry of Science also stimulates outbound mobility by offering PhD students, whose mentors are from abroad, a stay abroad to carry out part of their research in the institutions of their mentors. Moreover, the Ministry of Science finances study visits for scientific training abroad; participation in scientific conferences abroad; and co-financing of Master and PhD studies abroad.

Another step towards increasing outbound mobility was the visa liberalisation for Montenegrin citizens, i.e. abolition of visas for the Schengen area (Recommendation of the EC to the Council of Ministers EU, July 2009)<sup>12</sup>.

### Access to cross-border grants

Montenegro made use of EU grants through its participation in the CARDS programme during the period 1998-2006 (over EUR 277 million). In December 2010, Montenegro became a candidate Country, enabling it to have access to IPA funds allocated under the IPA Assistance in its entirety.

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<sup>12</sup> <http://ec.europa.eu/euraxess/index.cfm/services/researchPolicies>

From July 1, 2012 until November 2013, the Ministry of Science of Montenegro was a partner in the “Mechanism for fostering innovation in South East Europe – FINNO” project (component II-Cross border cooperation) with a total budget of EUR 79 791. Finally, the Ministry of Science participates in the activities of the Danube Steering Group for Priority Area 7: Higher education, research and ICT, which opens up cooperation opportunities within Danube Region.