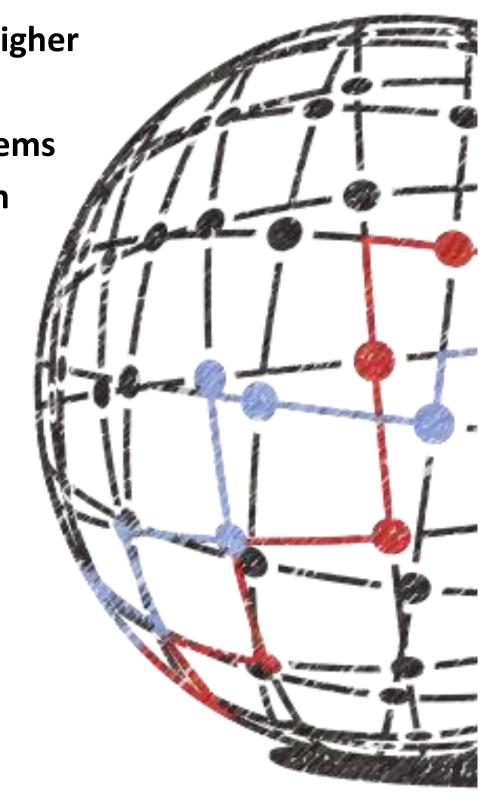
Overview of Higher Education and Research Systems in the Western Balkans

Montenegro

Jelena Branković



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About Country Reports

The series of reports entitled "Overview of Higher Education and Research Systems in the Western Balkans" is produced within the framework of the project "European Integration of Higher Education and Research in the Western Balkans" which is funded through the NORGLOBAL programme of the Norwegian Research Council. The reports cover seven higher education systems in the region – Albania, Bosnia and Herzegovina, Croatia, Kosovo*1, FYR Macedonia, Montenegro, and Serbia.

Each of the seven reports represents an overview of the higher education and research systems in the region, covering topics such as policy, governance arrangements, funding, institutional landscape, and quality, while focusing on the major reforms and trends in the recent years. Aiming to secure a minimum comparative perspective in writing the reports, their structure is built around the questionnaire produced by the project team.

Apart from striving to complement our knowledge base on the dynamics of higher education and research systems in the Western Balkan region, the purpose of the reports is to introduce these systems in a structured manner, as well as to offer a basis for prospective comparative research.

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¹ * This designation is without prejudice to positions on status, and is in line with UNSCR 1244 and the ICJ opinion on the Kosovo Declaration of Independence.

European Integration of Higher Education and Research in the Western Balkans

Overview of Higher Education and Research Systems in the Western Balkans

Country Report: Montenegro

Jelena Branković²

April 2013

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List of abbreviations

ECTS European Credit Transfer and Accumulation System
GERD Gross Expenditure on Research and Development

HE Higher education

HEI Higher education institution

ISCED-97 International Standard Classification of Education

MONSTAT Statistical Office of Montenegro
R&D Research and development
UIS UNESCO Institute for Statistics

1. Introduction

Montenegro is a country in the Western Balkans region, established as an independent state in 2006 when the union between Serbia and Montenegro officially ceased to exist. Until the dissolution of Former Yugoslavia in 1991, Montenegro one of its six republics. Currently, Montenegro is an official candidate for membership in the European Union. In terms of population, with less than 700.000 inhabitants, Montenegro is the least populous of all Western Balkan countries.

Sources & data

In principle, the MONSTAT's methodology in the field of higher education (HE) and research is aligned with the international standards (such as those given in OECD Frascati Manual for research, or the ISCED-97 system). For the purpose of producing this report, we have used the MONSTAT and Ministry of Education data, especially in the case of quantitative data, as well as other secondary sources such as reports produced by international institutions. However, certain methodological precaution when it comes to the reliability has been assumed and it is duly reported in the study. Laws and other regulatory documents relevant to HE have been used whenever needed and if available. For the purpose of gaining a better insight into the dynamics of the system and institutions, as well as for interpreting certain issues, the author has consulted individuals working at higher education institutions in the country.³

Structure of the report

The report roughly follows the structure of the questionnaire prepared by the project team which was used for all seven higher education systems. The following section focuses on the higher education system – its size, policy, governance arrangements, funding, quality and major reforms and policy trends in the recent period. Section 3 focuses on the same aspects of the research system, which, as it is the case elsewhere, to some extent overlaps with the HE system. In section 4, we move our focus to policy and governance arrangements and offer a rough interpretation of Montenegro's higher education steering model.⁴

³ See Acknowledgements.

⁴ No research organisations which specifically focus on higher education and research in Montenegro have been registered by the authors.

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The author would like to thank Biljana Mišović, Advisor for Higher Education in the Ministry of Education of the Republic of Montenegro for useful data and information. The author would particularly like thank Milika Mirković and Vojin Golubović from the Institute for Strategic Studies and Prognoses for providing data for the questionnaire and communicating with institutions in Montenegro when necessary. The views expressed in this report represent those of the author and do not necessarily represent those of the individuals consulted in the process of producing this text.

2. The Higher Education System

Size of the system

Institutions

The number of higher education institutions in Montenegro has increased in the past ten years, during which first HEIs in the private sector have been founded and which have become almost as numerous as those founded by the state. This, of course, when faculties of the University of Montenegro – the oldest and the largest HEI in the country, formerly independent legal entities, were still counted as separate institutions. In 2003, when the current law was adopted, there was only one public higher education institution operating in Montenegro – the University of Montenegro.

In 2011, all 22 institutions in the public category in Figure 1 are constituent units of the University of Montenegro without legal entity of their own (in 2002 there were 15). Similarly, in the private sector, University Donja Gorica had 2 faculties and 2006 and 6 in 2011.

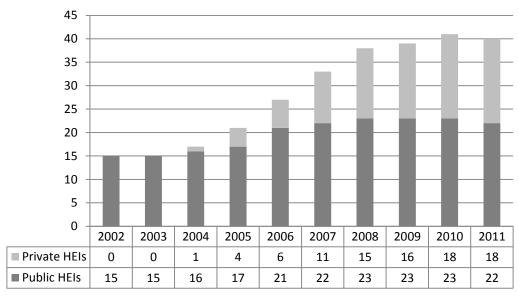


Figure 1. HEIs by type of ownesrhip

Source: MONSTAT

When we take universities to be single HEIs, the institutional landscape in Montenegro looks as given in Table 1. Comprising 10 HEIs in total (and, as we shall see later, a bit over 22.000 students), it is the smallest system in the region and one of the smallest in Europe.

Table 1. Higher education institutions by type (2011)

	Public	Private	Total
number of non-			
university/vocational/professional HE	0	7	7
institutions			
number of universities	1	2	3
		Source: Minis	try of Education

It is important to emphasise here that the 2003 only recognised a university as an integrated higher education institution, i.e. the faculty it comprises could not act as legally independent any longer. This integration – much resisted in other countries in the region, also meant less autonomy for faculties, both in academic and management matters. Montenegro was the first country in the region to actually enact such a legal provision. In Bosnia and Herzegovina (though differently in each entity) and Macedonia this was enacted later, after much debate and resistance, especially from large comprehensive universities whose faculties had long enjoyed an autonomous status. Most state universities in Croatia and Serbia, however, still operate without being formally integrated.

Under the Law on Higher Education (2003, amended in 2010), a higher education institution can have the status of a university if it provides a minimum of five different study programmes at undergraduate level and out of these five at least one study programme must have undergraduate, postgraduate and doctoral studies. According to the law (article 19), institutions in higher education are entitled to the following: (i) to innovate higher education within its license; (ii) to provide a study program of any educational level for obtaining the necessary or adequate knowledge in view of accomplishing higher education aims; (iii) to develop independently and apply curricula and research projects; (iv) determine curricula to be realized and subjects to be studied; (v) determine conditions for student admission and methods of teaching and assessment of students' knowledge; (vi) select management and governing bodies and determine their composition, scope of activities and mandate; (vii) select academic and other staff; (viii) award honorary titles.

The University of Montenegro is the only public higher education institution in Montenegro and it comprises 20 faculties and 3 scientific-research institutes and 1 independent study programme at the university level. The university established braches of some of its faculties in other cities: Faculty of Economy in Bijelo Polje, Faculty of Law in Bijelo Polje and Budva; Faculty of Electrical Engineering — Applied Computer Science in Berane, Faculty of Mechanical Engineering in Pljevlja; Biotechnical Faculty has branches in Bar and Bijelo Polje, Medical Faculty has branch in Berane (Higher Medical School). Faculty of Philosophy from Nikšić has branches in Berane: Faculty for Teachers and Faculty of English language. Also, Faculty of Maritime Studies from Kotor has branches in Budva and Bar.

The first private university, the University Mediteran started to operate in 2006 and it comprises six faculties: Faculty for Tourism, Faculty for Business Studies "Montenegro Business School", Faculty for Information Technologies, Faculty for Visual Arts, Faculty of Law, and Faculty for Foreign Languages.

In 2010, the second private university was established – University of Donja Gorica, which now consists of 7 faculties. Faculty for International Economics, Finance and Business. Faculty of Law, Humanities studies, Faculty for Information Systems and Technologies, Faculty for Art, Faculty for Polytechnics (started from 2011/2012) and Faculty of Food Technology, Food Safety and Ecology (started from 2012/2013). Apart from the private universities, there are also 7 individual private faculties in Montenegro, enrolling about 1333 (2011/2012) students at undergraduate studies.

Other HE institutions in Montenegro are the following: Faculty for Business Management, College of Sisterhood "Kraljica Jelena", Faculty of Administrative and European Studies, Faculty for Traffic and Transport Management, Algonquin Faculty for International Hotel and Tourist Management, Faculty for Mediterranean Business Studies and Faculty for Management.

At the outset, private universities were more oriented towards social sciences (e.g. economics, law, management). However, in the recent years, study programmes in engineering, such as computer science and technology⁵, have been established in the private sector as well. The orientation to applied social sciences is, however, one of the private sector's main characteristics, as well as their focus on the student market. They also tend to be smaller in size (both in terms of student and staff numbers), as well as to embrace a more flexible and less of a collegial bottom-up management style typical for traditional state faculties, among others. Private HEIs tend to have higher tuition fees, which can be can be categorised as a weakness if we take this to be an obstacle to access, they do not enjoy the financial support from the state as much as public ones do (there are exceptions which are mentioned later in the text), but they have more freedom in, e.g., in terms of setting tuition and prices for other services provided. As elsewhere in the region and other countries which have undergone transition in the last two decades, private provider in HE tend to have a lower reputation for quality compared to public ones and are often regarded as profit oriented even when there is no evidence for this. However, analyses comparing private and public sector HEIs in Montenegro, especially when it comes to the quality of provision, are lacking. Hence, no definite conclusions can be drawn on this and certainly further analysis is needed.

In parallel with the growth of the private sector, the public one has also grown significantly, in particular in terms of enrolments. Since 2003, when the current law was passed, the number of study programmes in the field of social sciences has increased, as well as the number of students in some existing programmes, such as economics, management, business, law, diplomacy, languages (Table 2).

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⁵ E.g. Faculty of Food Technology, Food Safety and Ecology at the University Donja Gorica.

Table 2. Students in different study programmes at the University of Montenegro

	2003/2004	2010/2011	2003/2004	2010/2011
University of Montenegro	Number o	of students	Share in total num	ber of students ⁶
Faculty of Economics	1762	4033	18.21	22.71
Faculty of Law	1713	3198	17.70	18.01
Faculty of Political Sciences	-	872	-	4.91
Faculty of Electrical Engineering	890	1353	9.20	7.62
Faculty of Sciences and Mathematics	456	510	4.71	2.87
Faculty of Metallurgy and Technology	89	242	0.92	1.36
Faculty of Architecture	-	249	-	1.40
Faculty of Mechanical Engineering	89	266	0.92	1.50
Medical Faculty	266	618	2.75	3.48
Faculty of Philosophy	2860	2257	29.56	12.71
Faculty for Maritime Studies	585	961	6.05	5.41
Faculty for Tourism and Hotel Management	258	1098	2.67	6.18
Biotechnical Faculty	-	420	-	2.37
Faculty of Civil Engineering	340	603	3.51	3.40

Shaded cells indicate the increase in student numbers between 2003/2004 and 2010/2011

Source: MONSTAT

International partnerships and cooperation

With respect to the international partnerships, no partnerships between Montenegrin and foreign universities have been established in Montenegro to date. However, the Law on Higher Education defines conditions for the organisation of study programmes in cooperation with other universities (Article 40). The university founded by the government may, with the consent of the government, organise studies in cooperation with a domestic or a foreign institution or an international organisation. In organising studies, a public university can provide a programme of double or joint degrees.

Moreover, a private institution, which is accredited by another state or organization, is obliged to submit a certificate on that accreditation to the Higher Education Council, which carries out the procedure of its assessment, in accordance with its enactment (Law on Higher Education, Article 43). So far, no such initiatives have been registered.

⁶ Not including arts programmes where no significant changes have been recorded.

Structure of educational provision

Educational activities of higher education institutions are carried out through academic and applied study programmes. Only academic study programmes can lead to the diploma of doctoral studies, while applied study programmes can lead to the level of master. The study programmes are organised as undergraduate, postgraduate and doctoral studies.

Since 2004, the principles of ECTS as an accumulation and transfer system for undergraduate, postgraduate (specialist and master studies) and doctoral studies are compulsory for all universities and higher education institutions in Montenegro. Courses are limited to one term and each course is graded in accordance with ECTS points.

According to the law, 60 (ECTS) credits represent the workload in a single academic year. Undergraduate academic studies (bachelor) are foreseen as taking three or four years (180 or 240 ECTS credits), whereas undergraduate applied studies three years (180 ECTS credits). Medical studies are integrated and they take six years (360 ECTS credits), while in the case of dentistry and pharmacy, the integrated studies last five years (300 ECTS credits). Postgraduate specialist studies are designed as one year course (60 ECTS credits), which can lead to the postgraduate master studies (both academic and applied) of one year (60 ECTS credits). One can enrol only two year master studies (120 ECTS credits) directly after obtaining bachelor degrees. (Table 2)

The second cycle of academic study programmes gives direct access to the third cycle. In order to gain entry to doctoral studies, for most study programmes students must have accumulated at least 300 ECTS credits and at least 360 credits for medical sciences. Within the doctoral programmes, students must earn a minimum of 180 credits to obtain the degree. Doctoral programmes include obligatory course work and individual research. The doctoral dissertation is the final part of the study programme, except in arts, which is an artistic programme. The scientific contribution of the doctoral candidate is also evaluated based on number of the scientific publications.

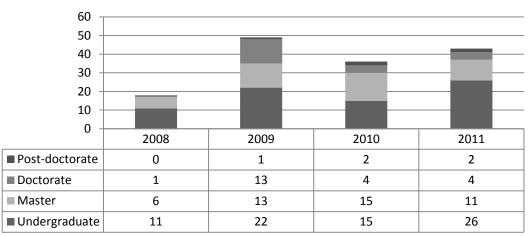
Table 3. Study programmes in Montenegro

PhD Studies		8 years			
		7 years			
	3 years - 180 ECTS		6 years		
	TS	Master Studies 1 year- 60 ECTS	Specialist/Master Studies	5 years	Specialist/Master Studies
(4+1) or (3+2)	Minimal 300 ECTS		1/2 years - 60/120 ECTS	4 years	1/2 years - 60/120 ECTS
4+1) 0	nimal	Undergraduate	Undergraduate	3 years	Undergraduate
	Ē	4 years - 240 ECTS		2 years	
			3 years - 180 ECTS	1 year	3 years - 180 ECTS
	Academic study programmes			Applied study programmes	
				S	Source: Ministry of Education

Since 2003, the number of study programmes increased significantly, both in public and private sector. Additionally, introduction of the new degree structure went in parallel with the intensification of mobility of the students and staff (there are no indications of causality in this case, however). The number of students participating in exchange programmes was rather low (only few of them) and nowadays this number is substantially higher (the number of students who are at programs for studying abroad is above 300, source: Ministry of Education). However, the higher education system is still considered not competitive and attractive on the international scene, due to a number of reasons, to which lack of courses taught in English, accommodation capacity, or even size of the system have probably contributed.

Formally, the change from the old-style programmes to the Bachelor-Master structure has made mobility more feasible to organise for HEIs, which was further facilitated by the exchange schemes such as Central European Exchange Programme for University Studies (CEEPUS, since 2005/2006), Erasmus Mundus External Cooperation Window (2008-2009) and later on Erasmus Mundus II. EU programmes such as Tempus have further contributed to international cooperation, yet mainly at the level of academic staff interaction. According to the EACEA report, up to 2012, more than 200 students and academic staff participated in mobility under the CEEPUS programme. Figure 2 provides the number of Montenegrin students using one the EU Erasmus Mundus mobility scheme (EACEA, 2012).

Figure 2. Participation of Montenegro in Erasmus Mundus— Partnerships (External Cooperation Window, Action 2)



Source: EACEA, 2012

Professional and academic programmes

Universities in Montenegro deliver academic and applied study programmes, as foreseen by the law. University of Montenegro (public university) offers both types of programs (15% are applied studies and 85% are academic; source: Ministry of Education). In terms of types of HEIs, Montenegro also has institutions in non-university sector, albeit only private ones. The system can be categorised as a binary one therefore (Kyvik, 2004), although the university sector dominates in terms of enrolments.

Staff

According to the data collection technique applied by MONSTAT, the only available figures on the academic stuff is the total number (expressed in head count - HC) and the number of those employed full-time (also in HC). Therefore, we cannot determine the number of staff expressed in full-time equivalent units (FTE). Moreover, no data on the administrative staff is being collected (c.f. Form SV-21 used by MONSTAT), therefore, the only available is for the academic staff and the type of staff termed "experts" which refers to teaching staff without academic rank ("lektor," "viši lektor"). The data on academic staff is given in tables 3 and 4.

Table 4. Staff, administrative and academic

Year	Total number staff (HC)
2007/2008	1241
2008/2009	1606
2009/2010	1749
2010/2011	1839
2011/2012	1842
Growth 2007/08-2011/12	67.37%

Table 5. Staff (HC)

		Academic Staff			Experts	
	total	female	male	total	female	male
2007/2008	879	362	517	295	157	138
2008/2009	1151	455	696	254	153	101
2009/2010	1232	517	715	290	178	112
2010/2011	1274	565	709	257	155	102
2011/2012	1266	576	690	281	166	115

Source: MONSTAT

According to the Law on Higher Education (article 19), academic and other staff are hired by HEIs. Salaries are defined by the Collective Agreement (Collective Agreement for the University of Montenegro, 2006), in whose negotiations also the Ministry of Education representatives take part. It is worthwhile mentioning that hiring "visiting" academic staff from other countries in the region is a well-known practice (not only in Montenegro, but across the whole region).

Students

In Montenegro, both the total number of students and Gross Enrolment Ratio (GER) have been on the increase since 2000 (Figure 3; Table 5).

50% 45% 40% 35% 30% 25% 20% 15% 10% 5% 0% 2001 2002 2003 2004 2005 2006 2007 2008 2009 2010

Figure 3. Gross Enrolment Ratio (ISCED 5 and 6)

Source: UNESCO Institute for Statistics

According to the data given in the review of HE system n Montenegro (EACEA, 2010; data provided by the Ministry of Education), in 2005/2006, the number of students enrolled in undergraduate study programmes increased substantially in comparison with 2003/2004, which indicates that the progression rate for the students studying in accordance with the Bologna system has increased, but there is no evidence suggesting a causal relationship between efficiency and the study programmes reformed in line with the new law. However, the report further emphasises that this is a substantial improvement and one of the most pronounced positive results of the implementation of the Bologna principles.

Table 6. Overall student data

Gross Enrolment Ratio (2011/2012)	About 48%
Completion Rate (2011/2012)	44.4% - undergraduate, 75% - specialist studies, 25% Master
Drop-out Rate (2011/2012)	55.6% - undergraduate, 25% - specialist studies, 75% Master

Source: Ministry of Education for completion rate; UNESCO Institute for Statistics for GER

Access to higher education is based exclusively on the academic merit during secondary school. The exception is architecture, arts academies and sports. It would be worthwhile mentioning that even though it is assumed that the expansion has increased diversity of the student body, in terms of socioeconomic background in the first place, yet we have not come across any analysis on this particular aspect.

As indicated earlier, University of Montenegro is the single largest HEI in the country, enrolling more than 80% of the total student body in the country (Figure 4; Table 6).

2007/08 2008/09 2009/10 2010/11 2011/12 ■ University of Montenegro ■ University Mediteran ■ University of Donja Gorica - UDG ■ Other academic institutions

Figure 4. Students by HEI of enrolment

Source: MONSTAT

Funding of higher education

Public university is free to generate financial resources from various sources and there are no constraints in terms of maximum amount public HEIs can accumulate relative to the amount it receives from the government (source: Ministry of Education). Public university is free to internally allocate state grants, yet it can undergo internal (internal accounting) as well as external control - state audit for which purpose must justify the spent resources. The own revenue of the University of Montenegro is about 40% of total revenues (total revenues do not involve loans, revenues from sales of assets etc.). (estimation by the Ministry of Education).

The government, taking into account the opinion of the Council of Higher Education, adopts the measures for the financing of higher education and, also, prescribes the mechanism for the allocation of these funds (Rulebook on norms and standards, 2012). Accordingly, the government decides on the number of students to be financed from the state budget, following the number prescribed in the applicable public institution licence and recommendations from the Ministry of Education. Hence, funding is not allocated for the fulfilment of specific targets (Ministry of Education), but is input-based and follows a formula based on student enrolments.

The expansion of higher education in the previous decade resulted in, among other things, the reduction of the level of government support. However, the tuition fee policy of the government allowed HEIs, also in the public sector, to charge for tuition. Thus, the funds from the state budget and local

community budget, as well as from tuition fees represent basic sources of financing (Strategy of Development and Financing of Higher Education in Montenegro 2011-2020, hereinafter "the Strategy").

HEIs often have other type of own revenue apart from tuition or administrative fees charged to students, however, this in most cases does not represent comparatively significant part of HEI's total budget (the Strategy). Faculties and departments engage in research projects, consultancy services, donations, lease premises and equipment, etc. Overall, HEIs, both public and private struggle when it comes to funding which arguably affects the quality of teaching provided and research conducted.

Table 7. Level of investment into the HE system

Year	Public investment into higher education, as proportion of GDP (%)
2008	0.55%
2009	0.55%
2010	0.46%
2011	0.42%

Source: Ministry of finance (Budget – expenditure for the University of Montenegro as a public university) and MONSTAT (GDP)

From the perspective of students, in public higher education institutions, tuition fees normally include only basic activities (studies and exams) and do not cover all costs, hence, they are required to contribute additionally in the form of different administrative fees for particular services, such as obtaining certificates, etc. In the case of some private HEIs, paying tuition fee even secures books for students, yet these fees are higher than at public HEIs. In Montenegro, tuition fee at private institutions varies from €1,350 to €2,500, whereas at most faculties of the University of Montenegro, the tuition fee amounts to €500, and at a smaller number of faculties it is €1,000 (architecture, faculties of art and programmes which are organised exclusively as self-financing). (Table 6)

HEIs, however, retain the right to their own policies of rewarding their best students by exempting them from tuition fees, as well as the right to introduce variable tuition fees in accordance with students' accomplishments during studies (the Strategy).

Table 8. The average amount of tuition fees in EUR (2012/2013)

	Universities		
Bachelor	Public university – 500€ per year, private universities and		
Dactieioi	professional HE 1500-2000€ per year		
Master	1500-2000€ per year		
Integrated	N/A		
PhD	1200-2000€ per semester or 2400-4000€ per year		

Source: Ministry of Education

In accordance with the adopted amendments to the Law on Higher Education, private higher education institutions can also receive funds from the government, albeit for enrolling students in study programmes which are determined to be of public interest. The government, with the consultation of the Council, determines the number of students and the amount of funds to finance those students.

In Montenegro, all students (budget-financed students and self-financed students) have the right to apply for scholarships and loans. Scholarships are assigned to the "talented students" defined as students with excellent grades and special preferences for scientific or artistic work, and those who had won rewards at national and international competitions. With regards to the system of loans for scholarships, in Montenegro, 11.66% of students benefit from student loans (which is not a the type of the loan system encountered in Western countries) and less than 10% of students (8.46% in 2011/2012) live in subsidised student accommodation.

All students (undergraduate) whose tuition is financed from the state budget study at the public university (University of Montenegro). All students at postgraduate and doctoral studies (public university and private universities and faculties) are self-financed. The related figures are given in tables 8 and 9.

Table 9. Students by source of financing and sex

	financed from the budget				self-financed	
	Total	Female	Male	Total	Female	Male
2007/2008	4891	2898	1993	13118	6753	6365
2008/2009	4599	2818	1781	15891	8230	7661
2009/2010	4300	2597	1703	16899	8671	8228
2010/2011	4369	2650	1719	17794	9098	8696
2011/2012	4670	2933	1737	17557	9023	8534

Source: MONSTAT

Source: MONSTAT

Table 10. Students by source of financing (% of the total number)

	Financed from the state budget	Self-financed
2007/2008	27.2	72.8
2008/2009	22.4	77.6
2009/2010	20.3	79.7
2010/2011	19.7	80.3
2011/2012	21.0	79.0

25000 20000 15000 10000 5000 0 2007/2008 2008/2009 2009/2010 2010/2011 2011/2012 ■ Number of students in self-13118 15891 16899 17794 17557 financed quota ■ Number of students in state 4891 4599 4300 4369 4670 budget quota

Figure 5. Students by tuition fee category

Source: MONSTAT

While the total number and percentage of students in the self-financed quota increases in the period 2007/2008 – 2011/2012, the number of students in the budget quota remains at more or less the same level and – relative to the total number of students, decreases (Figure 5).

The government determines the minimum cost per student for the ongoing year for students of liberal arts and social sciences of I, II and III cycle, which are not budget-financed, considering primarily the opinion of the Council of Higher Education. However, the current financing model used by the University of Montenegro is designed to cover running costs, related to permanently employed teachers, administrative workers and material costs.

Currently, following the classification of funding mechanisms by Jongbloed & Koelman (2000, p. 14), Montenegro can be categorised as a HE system with centralized system of funding which is input based and is also known to be a traditional type of budgeting, "where allocations are based on requests (activity plans, budget proposals,) submitted to budgetary authorities, known as negotiated funding."

Quality in higher education

For the purpose of accreditation, the Council for Higher Education (hereinafter: the Council) establishes a special committee for evaluation and accreditation of institutions or programmes from a list of experts for accreditation produced by the Ministry.⁷

⁷ "Ministarstvo prosvjete i sporta je utvrdilo listu eksperata za akreditaciju ustanova visokog obrazovanja i studijskih programa" http://www.mpin.gov.me/rubrike/visoko-obrazovanje/105908/Ministarstvo-prosvjete-i-sporta-je-utvrdilo-listu-eksperata-za-akreditaciju-ustanova-visokog-obrazovanja-i-studijskih-programa.html, last accessed on 9 March 2013.

The quality assurance system is based on continuous monitoring, controlling and reporting on the implementation of the educational process, as follows:

- The results achieved in all courses (subjects),
- The work of teachers,
- Conditions for realisation classes (library, laboratory equipment, presentation tools, information technology).

The most important international documents used for the preparation of the rules are:

- Framework for Accreditation Programs, (Council on Higher Education);
- ENQA Standards and Guidelines for Quality Assurance in the European Higher Education Area (Conference of European ministries Responsible for Higher Education, Bergen, 19-20 May 2005);
- A Good Practice Guide for Quality Management of Research for Higher Education Institution (Council on Higher Education).

Each faculty appoints a person responsible for quality assurance. The Law on Higher Education prescribes that HEIs evaluate and assess the quality of their own work. Self-evaluation is foreseen as continuous activity by the law, which is further laid down in the statutes of HEIs. According to the law, the self-evaluation methods are determined according to the curricula, teaching equipment, qualification of academic staff, teaching method, pass rate percentage, percentage of graduates and other necessary indicators of the work of the institution. Students are involved in the self-evaluation procedures (either directly – at faculty level all students are involved, or indirectly – at university level participation is via student representatives) and this evaluation is conducted through questionnaire. Self-evaluation is an integral part of the accreditation and re-accreditation procedures.

Recent changes and specific characteristics

The Montenegrin Law on Higher Education was adopted in October 2003, in the same year that Montenegro officially became a Bologna signatory country. The changes and amendments of the Law on Higher Education were adopted in Parliament of Montenegro on 27 July 2010. The Strategy of Development and Financing of HE in Montenegro is adopted for the period 2011-2020.

The 2003 law called for the reform of higher education, principally for the purpose of increasing efficiency of studies and alignment of the system with the European trends in higher education based on the principles of the Bologna Declaration and the Lisbon Convention. Obligations arising from joining the Bologna process and the implementation of the Lisbon Convention as follows: (i) adopting a system based on the three cycles of studies - undergraduate, postgraduate and doctoral, (ii) Introducing ECTS – European Credit Transfer System as a measure of volume of studies; (iii) Adopting a system of easily understandable and comparable academic titles; (iv) Introducing diploma supplement as a supporting document which describes the completed programme; (v) Introducing joint degree issued by two or more institutions; (vi) Promoting European cooperation in providing quality; (vii) Promoting student and teaching staff mobility; (viii) Defining the procedure of recognition of the acquired qualifications and

degrees in accordance with the Lisbon Convention; (ix) Establishing accreditation agency; (x) Introducing quality assurance system; (xi) Engaging students as partners in educational process; (xii) Establishing university as the only legal entity (request of the Magna Charta Observatory); (xiii) Establishing possibilities for implementation of lifelong learning.

Even though the higher education system in Montenegro is a rather small one, it has been exposed to the same challenges larger systems in the region (and elsewhere) have been exposed to in the recent years. These undoubtedly include massification, privatisation, both in terms of private providers and increased contribution by students, also marketisation and increasing difficulties in meeting the labour market needs.

In the meantime, as it has been earlier indicated, these changes were accompanied by a rapid growth in number of higher education institutions and number of students, while the highest expansion of the study programs were in economy, law, tourism, information technology. On the other hand, the system of financing has remained essentially the same. At the moment, a new funding formula is being developed in cooperation with the World Bank and it is based on the cost per student (project title: Higher Education and Research for Innovation and Competitiveness Project (HERIC)).

The main aim of this project is to strengthen the quality and relevance of higher education and research in Montenegro through reforming the higher education finance and quality assurance systems and by strengthening research and development capabilities. The project has four main components, the first being higher education finance reforms and implementation of quality assurance norms, the second component is the human capital development through internationalisation, the third component is the establishing a competitive research environment and the fourth refers to the project management and monitoring and evaluation.⁸

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⁸ "Higher Education Research for Innovation and Competitiveness Project"

http://www.worldbank.org/projects/P122785/higher-education-innovation?lang=en, last accessed on 9 March 2013

3. The Research System

Size of the research sector

The total number of licensed scientific institutions at the beginning of 2013 was 45, according to the official document of the Ministry of Finance. According to the MONSTAT data (most recent available), the total number of research organisations in Montenegro was 42 in 2010, most of which being higher education institutions, including research units within them (Table 11).

Table 11. Size of the research sector (2010)

Sector	Number of research organisations
Business enterprise (experimental-development units)	3
Government (scientific-research institutes)	7
Higher education (faculties)	32
Total	42
	Source: MONSTAT

According to the data provided in Figure 6, the number of R&D organisations has been doubled between 2000 and 2010.

Figure 6. Total number of R&D organisations

Source: MONSTAT

⁹ "Lista licenciranih naučnoistraživačkih ustanova" http://www.mna.gov.me/ResourceManager/FileDownload.aspx?rid=101045&rType=2&file=Licencirane_naucne_ustanove%20v3.pdf, last retrieved on 9 March 2013

The total number of research staff, as it is the case in the official statistics on higher education, is only collected in terms of HC and not as FTE. Unlike, HE statistics, in R&D data there are figures also for administrative staff (Table 12).

Table 12. R&D personnel, administrative and academic (HC)

Year	HC ¹⁰	HC administrative	HC research	Total number staff
2007/2008	1344	397	947	1344
2008/2009	1462	390	1072	1462
2009/2010	1512	405	1107	1512
2010/2011	1780	492	1288	1780
2011/2012	N/A	N/A	N/A	N/A
(estimated) increase in	75.5%			

Source: MONSTAT

In terms of trends, the total number of R&D personnel has increased in the period 2003-2010, in all categories of staff (Figure 7).

1,800 1,600 1,400 1,200 1,000 ■ Other supporting staff (HC) - Total ■ Technicians (HC) - Total ■ Researchers (HC) - Total

Figure 7. Total R&D personnel by type

Source: UNESCO Institute for Statistics (2003-2007) and MONSTAT (2008-2010)

Relatively, the number of personnel per million of inhabitants has also marked an increase in the period 2003-2007 and has likely increase afterwards (Figure 8).

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 $^{^{10}}$ No data for FTE

2.200.00 2,140.26 2,150.00 2,100.00 2,050.00 1,988.07 2,000.00 1,966.28 1,955.38 1,950.00 1,914.14 1,900.00 1,850.00 1,800.00 2003 2004 2005 2006 2007

Figure 8. Total R&D personnel per million inhabitants (HC)

Source: UNESCO Institute for Statistics

Research funding

With regards to the total investment in R&D relative to GDP, an upwards trend has been noted in the period 2003-2007 (Figure 9; more recent data not available) and is comparatively one of the highest in the region. Still, Montenegro suffers from a lack of modern research infrastructure and state-of-the-art equipment, which hampers its involvement in research activities and research cooperation with the EU (The Researchers Report, 2012). According to the Strategy, the financial support from the state is less than 1% of GDP. In 2011 some 0.4% of GDP was invested in research and development, compared to 0.1% a year before.

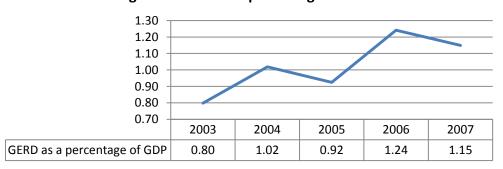


Figure 9. GERD as a percentage of GDP

Source: UNESCO Institute for Statistics

According to the European Commission Report on Montenegrin progress in 2012, the level of investment in research has increased from 0.13% to 0.45% of GDP. However, the EU has criticised Montenegro for the level of investment by the private sector which remains very low.

In terms of different R&D sectors, higher education is marked for being most research intensive, if we take the total amount of finances spent in this sector for R&D purposes (Figure 10). On the other hand, research in both government and business sector appears to be far less prominent.

35,000.00 30,000.00 25,000.00 20,000.00 15,000.00 10,000.00 5,000.00 0.00 2003 2004 2006 2005 2007 ■ Business enterprise ■ Government ■ Higher education

Figure 10. GERD by sector of performance (in '000 local currency)

Source: UNESCO Institute for Statistics

However, most of the resources are internally allocated to current expenditure, such as salaries, while little is left for capital investments (Figure 11).

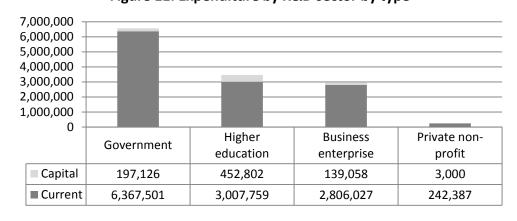


Figure 11. Expenditure by R&D sector by type

Source: MONSTAT

The scientific activity lies in the domain of the Ministry of Science and the funding of research activity is organised through the allocation of grants, upon an open competition. In 2011, the Ministry of Science (in association with Ministry of Agriculture and Rural Development, Ministry of Health, Ministry for Information Society and Telecommunications, Ministry for Tourism and Sustainable Development,

Ministry of Education and Ministry of Culture) announced a call for co-financing of national research projects starting in 2012 (the total amount of funds was 5,000,000 € for the implementation and co-financed research projects). The subject of the competition was co-financing of projects, and basic and applied research and development, in line with the Strategy for Scientific Research 2008-2016 (2008). The call addressed scientific research institutions that perform research activity, and which work meet the requirements in accordance with the Law on Scientific Research Activity and were entered in the register of licensed research institutions in the Ministry of Science of Montenegro.

Ministry of Science partially finances the scientific and research activities through call for co-financing different activities in order to stimulate participation in FP7, stimulate participation in the program COST, stimulate the promotion of science and research in Montenegrin society and education system. Ministry also partially finances the cooperation with scientific diaspora, PhD studies, study visits on scientific trainings abroad, participation at scientific congresses, organization of scientific congress in Montenegro, publishing scientific papers in the reference scientific journals, patents and innovative solutions, disclosure of scientific journal, etc. For each grant the Council determines the success based on the assessment of evaluation committee conducted from experts (this also includes an international review).

The Ministry of Science, with the support of the World Bank, commenced the project on higher education research for innovation and competitiveness. The Ministry also supported five initiatives by Montenegrin teams to participate in EU research projects. The ministry also co-financed scientific professional training abroad, doctoral and master studies institutions have started to participate more actively in European research programmes although private sector participation still remains insufficient.

Quality in research activity

The Law on Scientific Research Activity (2010) aims to promote integration into the European Research Area (ERA) and framework programmes, introduce international quality standards as well as increase investments in scientific and research activities, connecting researchers. Also, the quality assurance of research is introduced, but not as quality assurance in higher education (external and internal). According to the Law on Scientific and Research Activity (Article 19), the Ministry of Science i.e. the Council for Scientific Research Activity encourages the quality assurance of scientific research through:

- Awarding prizes for scientific achievements to researchers;
- Realising programmes of public interest by which scientific productivity in the form of publication of scientific works in referent scientific publications and other forms is stimulated;
- And giving the status of the Centre of Excellence to the scientific research institution or group of researchers in an institution.

Research productivity in Montenegro

Existing data on research productivity, in terms of bibliometrics or patents, are rather limited. Below, figures on published papers across disciplines are given. However, little can be concluded on research intensity and productivity from the available data.

Table 13. Published papers and monographs in 2011

	Scientific articles published in periodical publications			Published scientific monographs		
	Total	in Montenegro	abroad	Total	in Montenegro	abroad
Total	1051	547	504	131	98	33
Natural sciences	215	164	51	7	3	4
Technical and technological sciences	286	121	165	17	10	7
Medical sciences	60	10	50	9	6	3
Agricultural sciences	51	12	39	4	4	0
Social sciences	340	154	186	70	51	19
Humanities	99	86	13	24	24	0

Source: MONSTAT

Major reforms and policy trends

In the area of science and research legal system is aligned with the Lisbon Treaty and goals, objectives and priorities of the EU in this area are accepted. The priority activity relates to the positioning of the Montenegrin research community within the European Research Area, and further involvement in international scientific programs.

New legislative and strategic framework is also adopted in the area of research activities. The Law on Scientific Research Activity was adopted in 2005, and amended law is adopted in 2010. Also, Strategy on Scientific Research Activity is brought for the period 2008-2016. Revised strategy is expected to cover period 2012-2016. Also, there is a Law on the Montenegrin Academy of Science and Arts.

Research policy in Montenegro is carried out: through inclusion of research institutions and researchers in the European research area and international scientific programmes; through national and international research projects (basic, applied and developmental research); in premises and using the necessary; equipment for research; by qualifying staff for scientific work and training researchers; by making the results of scientific work accessible in the country and throughout the world, and through fostering programmes which contribute to raising overall standards among the public and help build a

knowledge-based society. Research activities are funded from the state budget, but mainly through various international programmes. One of the most important instruments is FP7 programme. ¹¹

Montenegrin research institutions and researchers participate in the Seventh EU Framework Programme for Research, Technological Development and Demonstration Activities (2007-2013) - FP7, as well as in programs: COST and EUREKA. Montenegro actively participates in the work program committees and bodies in ERA and FP7 program through its members appointed to the committees and bodies.

The government Strategy for Scientific and Research Activity (2008-2016), including the action plan, identifies two key priorities to facilitate integration into the European Research Area:

- 1. Increasing research cooperation with the EU;
- 2. Reforming the national scientific community.

The Strategy put forward the following objectives for the development of the research system:

- Implementation of measures for strengthening human resources for scientific and research activity by increasing the number of researchers and providing better working conditions;
- Strengthening the research infrastructure through regular investments in the modernisation of the existing facilities;
- Application of measures for connecting the research sector with the economy by means of joint development projects;
- Increase of investments in research in the business sector.

The action plan includes a roadmap for increasing investment in science and research, both by the public and private sector.

According to the Strategy (revised strategy to be prepared soon), scientific research activity is carried out through the research institutions such as: Montenegrin Academy of Sciences and Arts, licensed scientific research institutions registered with the Registry of the Ministry of Science, scientific and technological parks, centres of excellence, etc.

According to the Law on Scientific and Research Activity, the Council for Scientific and Research Activity proposes strategies for research and development to the government, monitors the implementation of the strategy, provides professional proposals and has an advisory role. The Council monitors and analyses the status and achievements in the scientific research activity, gives expert suggestions and in that view it has the special authority of:

1.	Preparation	and ni	nnncing	of the	Strateou.
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¹¹ Ibid.

- 2. Proposing the priorities from the Strategy and programmes of public interest for the actual year;
- 3. Giving opinion on the criteria for election into research and scientific ranks;
- 4. Giving opinion on laws and other regulations in the area of scientific research activity and other areas, which ensure general conditions for the stimulation of scientific research activity and exploitation of its results;
- 5. Giving opinion in the process of determining the levels of financing of priorities determined in the Strategy;
- 6. Proposing to the Ministry the decision about assigning the status of a Centre of Excellence;
- 7. Monitoring the realisation of the Strategy;
- 8. Nominating the committees for the realisation and monitoring of the activities defined by the Strategy, as well as for the quality control of the scientific research activity;
- 9. Cooperating with the Council for Higher Education; and
- 10. Performing other tasks prescribed by this law and the act on the establishment of the Council.

The Council has 11 members appointed by the government. Four members of the Council are nominated from the representatives of the bodies of public administration in charge of science, higher education, economy and financial sector. Seven members are nominated from the distinguished experts who contribute to the development and application of scientific research activity, from scientific research institutions, higher education institutions, Montenegrin Academy of Sciences and Arts and the economy. The principle of equal representation of all the fields of science needs to be respected.

The Act on the establishment of the Council determines closer composition, mandate of the Council members, procedure for election and dismissal and other issues relevant to the Council's work. The funds for the work of the Council are provided in the state budget.

According to the strategy, the most appropriate version is that program financing should be provided by the respective ministries on the basis of defined activities that research institutions permanently perform for the ministry. Project financing should be realized in the area of scientific research. In this regard, institutes have priority, but would act under the same conditions as other entities in Montenegro, depending on their resources and market conditions.

The Strategy of Scientific and Research Activity 2008-2016 (2008) determined the approximate amount of funding for priorities, and plan of funding. There is a need for substantially increased financial support from the state since current amounts related to the research are significantly below the 3% of GDP (less than 1%).

4. Policy & governance

The Ministry of Education of Montenegro is the highest authority responsible for overall education policy in the country. The Law on Higher Education foresees the Council of Higher Education (hereinafter: the Council) as the national body responsible for higher education, appointed by the government for four-years period. The key role of the Council is to monitor the state and achievements in higher education, to function as the national accreditation body, as well as to give professional proposals to the government for the improvement of higher education policy. For this and other purposes, the Council may establish working bodies, commissions and independent expert groups. It has 13 members and is responsible for assuring high quality higher education in Montenegro. Apart from advising the government, the Council also assists the institutions in improving and sustaining the quality of their activities. The work of the Council is financed by the state. Foreign experts may be appointed as members of special commissions for evaluation and accreditation of institutions and study programmes. For instance, the Council appointed a commission for the reaccreditation of the University of Montenegro, which consisted of experts from the European University Association.

Council members are appointed from among prominent experts in the field of higher education, science, technology, arts, economy, social services and other relevant areas, as well as from the students, in accordance with the Act on the Appointment of the Council (2012). A maximum of one half the membership of the Council may be reappointed in accordance with the Act on the appointment of the Council.

The governing body of a university is the Governing Board, and its main roles are defined by the Statute of the university. It is responsible for the following tasks:

- Establishing educational, research, scientific and policy development;
- Applying the Statute of the University;
- Considering and defining the university budget;
- Setting tuition fees, with the approval of the Ministry of Education and Science;
- Adopting the rulebook on the allocation of the state budget;
- Appointing and dismissing rectors, vice-rectors, deans and directors of organisational units of the university.

The Governing Board consists of 13 members – 7 academic staff representatives, 3 external members, two students' representatives and one non-academic representative (Statute of the University of Montenegro). The rector is responsible for managing the university.

The Senate is the professional body at the university level and it convenes the rector, vice-rectors, representatives of all faculties, academies, institutes, professional colleges, such as the medical school and students. Students represent 15% of the whole Senate. It is prescribed that there should be undergraduate, postgraduate and doctoral students in the Senate. As the supreme academic body, the

Senate is responsible to all decisions on the academic matters, such as general university policy and strategy on the development of academic activities, adopting study programmes, internal quality at the institution, promotions and academic titles, etc. The Senate is chaired by the rector and it has three permanent professional councils - the Council for social sciences, the Council for the arts and the Council for natural and technical sciences. The powers, composition, duration of mandates, manner of work and decision making of the Senate are closely defined by the Statute of the University.

The professional body of a faculty is the council. The professional council is composed of the dean, vice-deans, professors and students' representatives (not less that 15% of the overall number of members). Professional councils are responsible for monitoring of students' work at the faculty or academy, making proposals to the Senate related to changes in the structure and contents of study programmes and subjects, and appointing members of the Senate and Senate Councils. The faculty leader is the dean. A faculty may have up to three vice-deans.

According to the law, students are represented on the university governing board, senate and faculty bodies; at least 15% of each decision-making body consists of student representatives.

Montenegro can be described as predominantly embracing the sovereign, rationality-bounded steering model in both higher education and science, which can be seen both in the current strategic documents for higher education and science (Gornitzka & Maassen, 2000). The elements of the institutional steering model can also be noted, given that university enjoys autonomy, especially with regards to the academic issues in which the state in principle does not interfere. The idea of the "special" place university has in society may, however, be slightly tilted given the dominant role of one public institution – University of Montenegro. The growth of the private sector and increasing cost-sharing noted in the last decade between, in the first place, the state and the students, points to the presence of competition, first of all between institutions of the public and private sectors. The state, however, seems to be less conservative to the private institution's role in the public domain comparing to e.g. Serbia, and does not rule them out from the right to the public funds. Still, the guiding principle in this is the pursuance of national interest. Last but not least, the establishment of the Council for HE and student representation through university parliaments, or presence of international experts in accreditation panels, is indicative of the emergence of pluralism in decision making and perhaps slightly reduced role of the state.

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