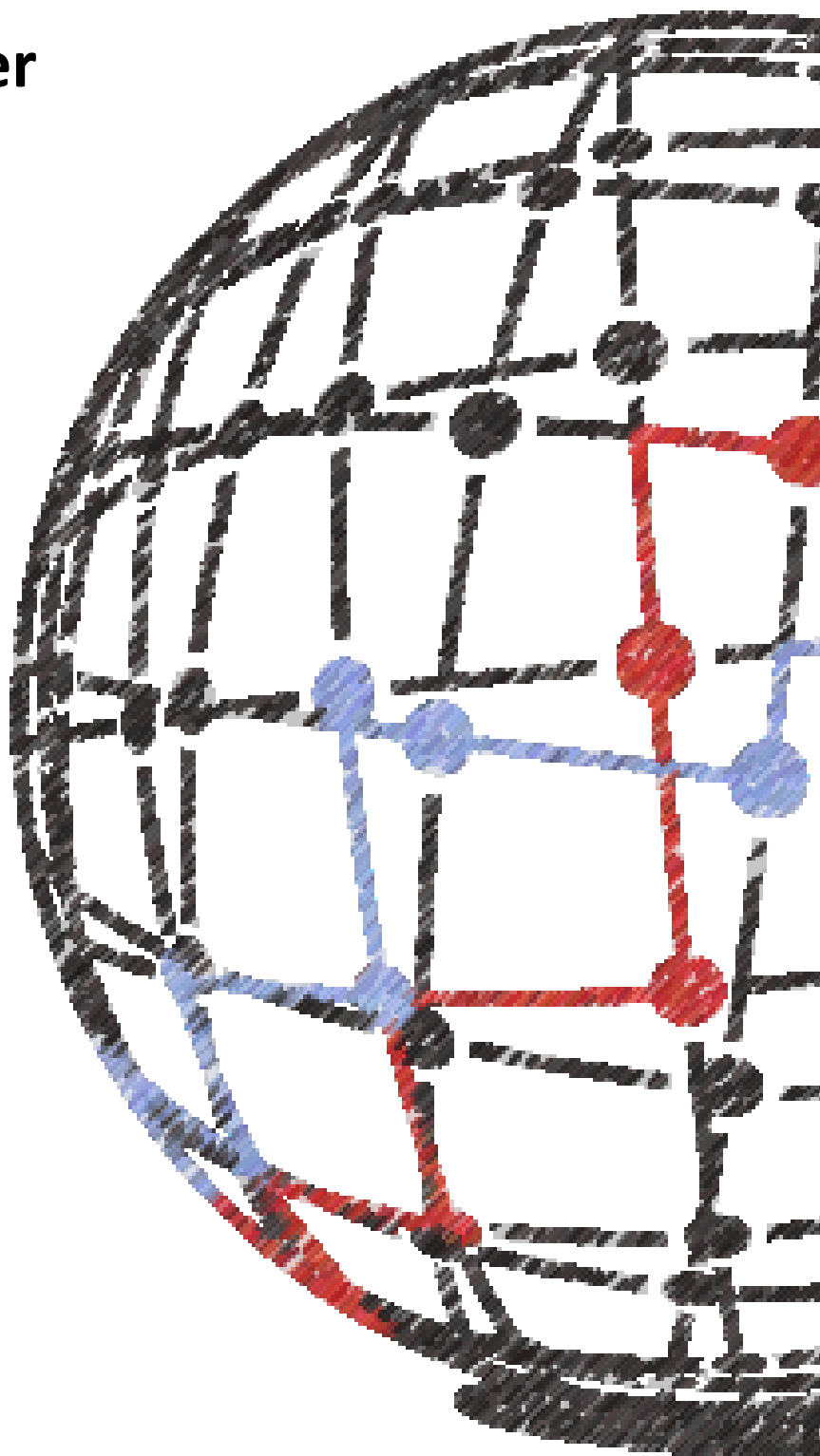


Overview of Higher Education and Research Systems in the Western Balkans

Bosnia and Herzegovina

Jelena Branković & Nina Branković



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April 2013

The views expressed in this report represent those of the authors and do not necessarily represent those of the project partner institutions or any other party.

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 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.

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: Bosnia and Herzegovina

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April 2013

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Table of contents

Table of contents	5
List of tables	6
List of abbreviations.....	7
1. Introduction	8
Sources & data	8
Structure of the report.....	9
Acknowledgements.....	9
2. The Higher Education System	10
Size of the system	10
Institutions	10
Staff	18
Students	20
Funding of higher education	24
Quality in higher education.....	26
Recent changes and specific characteristics.....	29
3. The Research System	30
Size of the research sector.....	30
Research funding	33
Quality in research activity	38
Research productivity in BiH.....	38
Recent changes and specific characteristics.....	38
4. Policy & governance.....	40
References	44
Bibliography	44
Legal documents.....	45
Country level	45
Federation of Bosnia and Herzegovina	45
Republic of Srpska	46
Internet data sources.....	46
Interviews.....	47

List of tables

Table 1. HEIs in BiH by type (2012)	12
Table 2. Public and private HEIs in BiH, by type (2013)	13
Source: BiH Statistics Agency (same reported by UIS).....	18
Table 3. Academic staff in Republic of Srpska	19
Table 4. Tertiary education students at ISCED 5 and ISCED 6 levels in FBiH	23
Table 5. Increase in student numbers in BiH between 2007/08 – 2011/2012	24
Table 6. Students in the tuition paying quota in BiH 2011/2012.....	25
Table 7. Tuition fee range in BiH.....	25
Table 8. R&D organisations in the Republic of Srpska	30
Table 9a. R&D personnel, administrative and academic	31
Table 9b. R&D personnel, administrative and academic (as categorised by the Institute of Statistics of the Republic of Srpska for year 2011 – most recent year available).....	31
Table 10. R&D personnel per million inhabitants, thousand total employment, thousand labour force, GERD per capita on BiH (partial data).....	32
Table 11. Research expenditure in RS by source of funding and sector of performance (in .000 BAM) ...	35
Table 12. GERD by type of activity (in .000 BAM).....	36
Table 13. Research projects and studies in RS.....	38

List of abbreviations

BD	Brčko District
BiH	Bosnia and Herzegovina
ECTS	European Credit Transfer and Accumulation System
ESG	European Standards and Guidelines for Quality Assurance in Higher Education
FBiH	Federation of Bosnia and Herzegovina
GERD	Gross Expenditure on Research and Development
HE	Higher education
HEA	Agency for Development of Higher Education and Quality Assurance of Bosnia and Herzegovina
HEI	Higher education institution
ISCED-97	International Standard Classification of Education
R&D	Research and development
RS	Republic of Srpska/Republika Srpska
UIS	UNESCO Institute for Statistics

1. Introduction

Bosnia and Herzegovina (BiH) is considered by far the most complex among higher education systems in the Western Balkans, mainly due to the complexity of its system of government. Under the General Framework Agreement for Peace in Bosnia and Herzegovina (GFA) (1995), two entities were established to constitute BiH, the Republic of Srpska (RS), with centralised administration, and the Federation of Bosnia and Herzegovina (FBiH), which consists of ten cantons. Apart from the two entities, there is a separate administrative unit – Brčko District.

This arrangement applies to the education sector, which is in the jurisdiction of the Republic of Srpska and Brčko District, or, in the case of FBiH, the 10 cantons. Consequently, each of these thirteen administrative units enforces legislation in the area of higher education (HE), which is operating under the Framework Law on Higher Education of BiH, which applies to the whole country. Given that the Framework Law is rather general and that the country-level authority responsible for HE (Ministry of Civil Affairs) has virtually no competence apart from coordination and international representation, it is often difficult to refer to the HE system in BiH as a single system.

Sources & data

The arrangement outlined in the previous section is also relevant for the official data collection practices. Namely, each of the two entities has its own official statistics agency, while the third operates at the country (BiH) level. Interestingly, even though their respective methodologies in HE and research are in principle aligned with the international standards (such as those given in OECD Frascati Manual for research, or the ISCED-97 system), in practice their data collection, aggregation and publication can be different, posing significant difficulties once one tries to compile data at the country level.

For the purpose of producing this report, we have used the official data from official statistics agencies, especially in the case of quantitative data. However, certain methodological precaution when it comes to the reliability has been assumed, in particular due to the reasons given in the previous paragraph, and it is duly reported in the study. Laws and other regulatory documents at all administrative levels relevant to HE have been used whenever needed and if available. It is worth noting here that in some cases documents could not be obtained, while some of the quantitative data were simply not available. Last but not least, for the purpose of gaining a better insight into the dynamics of the system and institutions, as well as for interpreting certain phenomena, the authors have consulted individuals working at higher education institutions in the country.⁴

⁴ See Acknowledgements.

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 an interpretation of BiH’s higher education steering model.⁵

When it comes to the structure of the report in terms of which of the “(sub-)systems” we are referring to, in principle, the authors have strived to look at the whole country and only when the issue in question was considerably distinct in the two entities and Brčko District, all three were to be addressed separately. However, as most of the sources and data cover one or all three but separately, providing a country-level analysis will be rather an exception than a rule.

Acknowledgements

The authors would like to thank Jelena Rožić from the University of Banja Luka for taking part in the interview and providing data, relevant documents and information. The authors would also like to thank Zlatko Jakšić for providing data and relevant documents. The views expressed in this report represent those of the authors and do not necessarily represent those of the individuals consulted in the process of producing this text.

⁵ No research organisations which specifically focus on higher education and research in BiH have been registered by the authors.

2. The Higher Education System

Size of the system

Institutions

With regards to the institutional landscape, the total number of higher education institutions in BiH has been increasing in the last decade. According to the BiH Statistics Agency, the total number of HEIs in BiH in 1997 was 94 and in 2006 there were 158. However, in order to better understand what exactly has been changing and why, one needs to take a better look at what these figures refer to.

First, while this rising trend could be noted for entity FBiH in the period 1997-2010, during which the number of HEIs went from 55 to 93, while in RS entity the number doubled - from 32 in 1997 to 64 in 2005. In 2006, the Institute of Statistics of the Republic of Srpska recorded the number of HEIs being 21 and eventually 24 in 2010. Second, what was being considered a HEI in RS changed after the law officially integrated universities in 2008. In other words, faculties in the public sector, once being independent legal entities within one university, were not independent any longer and were thus counted differently. Consequently, in the case of the University of Banja Luka, what was once thirteen HEIs was now only one. Meanwhile, in the case of FBiH, the level of institutional independence of faculties vis-à-vis the universities they are part of varied across cantons. For instance, some universities, such as the University of Sarajevo have remained highly decentralized, with faculties still being largely autonomous and retaining their legal and financial independence, while others, such as the University of Tuzla, have become more centralized (EACEA, 2012).

The largest university is the University of Sarajevo, which is also the oldest university in the country. In the academic year 2010/2011, the university had 34.117 students⁶, which accounts for about one third of the entire student body in the country. In terms of enrolments, University of Sarajevo is followed by the University of Banja Luka (17.926 in 2010/2011, Statistics Yearbook of RS, 2012), University of Mostar (about 16.000⁷), University of Tuzla (about 16.000⁸), University Džemal Bijedić in Mostar (about 12.000 in 2008/2009⁹), University of East Sarajevo (about 11.972 in 2010/2011, Statistics Yearbook of RS, 2012). Other public universities, somewhat smaller in terms of enrolments, are University of Bihać and University of Zenica.¹⁰

⁶ HEI website - http://unsa.ba/s/index.php?option=com_content&task=blogcategory&id=13&Itemid=43, last retrieved on 20 April 2013

⁷ HEI Wikipedia page: http://en.wikipedia.org/wiki/University_of_Mostar, last retrieved on 20 April 2013

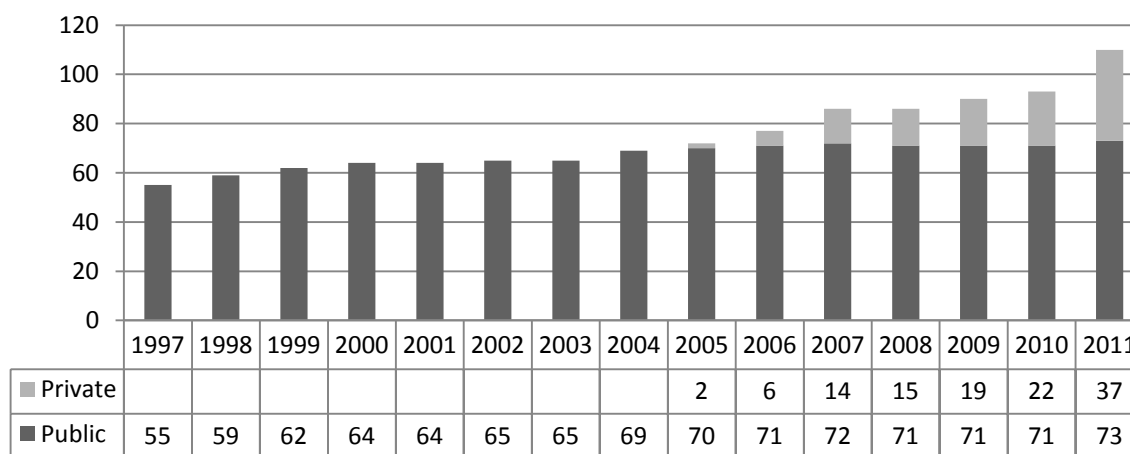
⁸ HEI Wikipedia page: http://en.wikipedia.org/wiki/University_of_Tuzla, last retrieved on 20 April 2013

⁹ HEI website - <http://www.unmo.ba/univerzitet.aspx>, last retrieved on 20 April 2013

¹⁰ NOTE: the figures other than those of the RS Statistics Agency are only approximate, based on the best sources available.

The first private HEI in BiH was established in 2000¹¹ (Banja Luka College of Communications Kappa Phi), while the first private university was recorded in official statistics for the academic 2003/2004 (University “Slobomir P”). Around the same period, the first private HEIs also appeared in FBiH and as the Figure 1 below illustrates for this entity, the following period was marked by a steady rise in the number of private HE providers. Simultaneously, the 2006 law on HE in RS declared public and private HEIs as equal under the law, which facilitated the further booming of the private sector in this entity as well. In terms of size, private HEIs tend to be much smaller than public ones.

Figure 1. Number of HEIs in Federation of BiH entity by type of ownership



Source: Federal Office of Statistics

With regards to the university and non-university sector, the former has traditionally been the one enrolling more students, while the latter has been larger in terms of the total number of free-standing HEIs. Since 2006, non-university HEIs offering 2-year programmes (“više škole”) ceased to exist. Most of them were closed (all in FBiH), two remained in RS (and are now called “visoke škole” under RS law on HE, here translated as professional colleges), while one became a faculty of the University of East Sarajevo (College of Traffic in Dobož). According to the official statistics (Institute of Statistics of the Republic of Srpska), in 2000 there were four non-university HEIs in RS in total. Apart from universities, faculties and professional colleges, a number of HEIs in BiH are categorised as religious faculties¹² and in the context of this study we consider them to be non-university HEIs. In Table 1 we give an overview of the HEIs by type for year 2012.

¹¹ HEI website - http://www.kfbl.edu.ba/O_Koledzu.php, last retrieved on 26 February 2013

¹² Religious faculties or faculties of theology are normally affiliated with a religious institution in BiH.

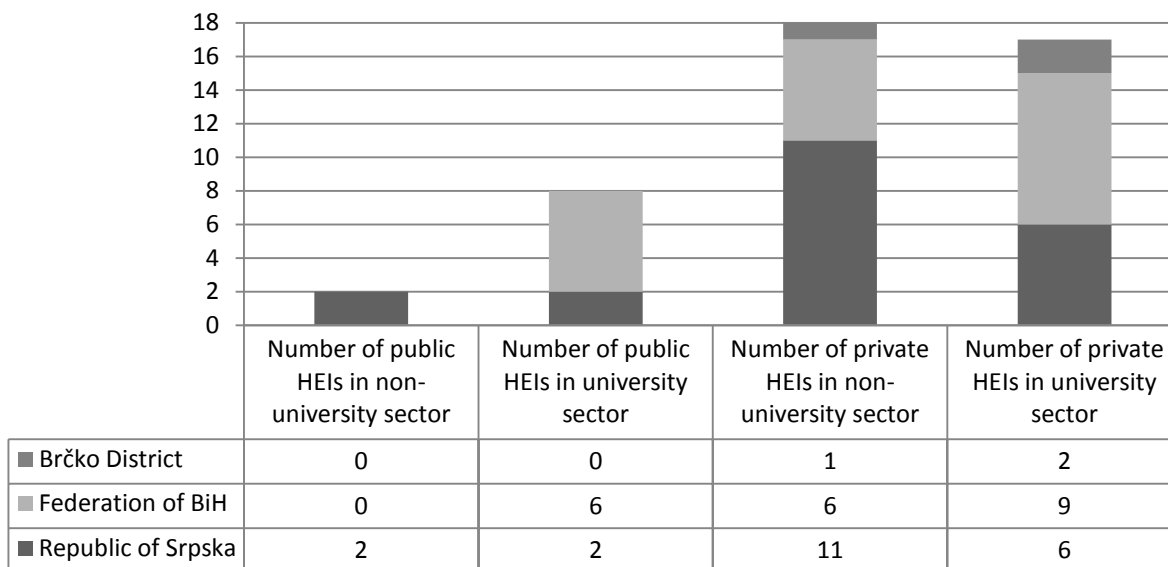
Table 1. HEIs in BiH by type (2012)

Colleges (“visoke škole”)	Universities		Religious faculties ¹³
19	25		4
	Faculties	Academies	
	177	10	

Source: HEA

Figure 2 gives an overview of the number of institutions in the public private, university and non-university sector. Private non-university HEIs are by far the most numerous ones across the country, with 11 institutions in RS only, followed by private universities, which conversely are more numerous in FBiH than in RS. Unlike RS, FBiH does not have any HEIs in public non-university sector.

Figure 2. HEIs in Bosnia and Herzegovina by ownership and type (2013)



Source: FMON 2012¹⁴

In Table 2 we provide aggregated figures for the whole country for 2013 (February).

¹³ Note: A typical classification of HEIs in BiH is state, private and religious. In this report, whenever religious are not listed separately, they are treated as public.

¹⁴ <http://unsa.ba/s/images/stories/AMOB/FMON.pdf>. Last retrieved on 26.2.2013

Table 2. Public and private HEIs in BiH, by type (2013)

	Public	Private	Total
Nb. of non-university/vocational/professional HEIs	2	18	20
Nb. of universities	8	17	25

Source: HEA

Private HEI are free to establish programmes in any discipline, according to the law. However, most of the programmes are concentrated in the soft-applied areas, such as management, business, ICT and media. An analysis of the offer given on private HEIs websites, one can also come across economics, law, communications, tourism, engineering, electro-technical sciences. There are also programmes in nursing, healthcare, and pharmacy. As it is the case elsewhere in the transition countries, the study programmes in private universities tend to be more interdisciplinary and applied than this is the case in traditional public universities. However, as they are not eligible for any financial support from the public budget, they tend to rely on tuition fees as their core funding source.

International partnerships and cooperation

There are several universities established on the basis of international partnership. The International University of Sarajevo was established by the Foundation for Education Development Sarajevo, established by “a group of businessmen from Turkey and several intellectuals from Bosnia and Herzegovina”¹⁵. Another HEI, the American University in BiH is based on the American education system and hires teachers with experience in the US education system¹⁶. As an example of institutional cooperation in programme delivery, the International Burch University cooperates, amongst others, with Romania’s University “1 Decembrie 1918” of Alba Iula, USA’s Texas A&M University-Commerce and Turkey’s Ataturk University, Erzurum.

Majority of universities in BiH enter into partnerships with universities from abroad, giving their students the opportunity for their diploma to be accredited at those universities. For example, the Faculty of Economics at the University of Sarajevo offers joint Masters Programmes in cooperation with Adizes Graduate School, Santa Barbara, California, USA, the University of Melbourne, Australia, the University of Zagreb, Croatia, and the Economics Faculty of Ljubljana, Slovenia¹⁷. The University of Vitez cooperates, amongst others, with the Faculty of Economics in Rijeka, Croatia, the Medical School of Osijek, Croatia, and the Faculty of Organizational Studies in Belgrade, Serbia¹⁸.

In the period of 1975-2009, the University of Banja Luka and its faculties/Academy of Arts have concluded over 100 contracts of cooperation with higher education institutions and scientific

¹⁵ HEI website <http://www.ius.edu.ba/Default.aspx?tabid=29>, last retrieved on 25.2.2013

¹⁶ HEI website <http://aubih.edu.ba/en/about/index.php>, last retrieved on 25.2.2013

¹⁷ HEI website <http://www.efsa.unsa.ba/ef/ba/adizes-school-of-management>, last retrieved on 25.2.2013

¹⁸ HEI website <http://unvi.edu.ba/index.php/medunarodna>, last retrieved on 25.2.2013

institutions from the Republic of Srpska, Federation of Bosnia and Herzegovina and other countries: Bulgaria, Italy, Japan, Macedonia, Norway, Poland, Russia, Slovenia, Serbia, Thailand, Ukraine, Finland, France, Croatia, Montenegro and Spain. On the basis of joint participation in TEMPUS projects and FP6 and FP7 projects, the University of Banja Luka cooperates also with other higher education institutions and scientific institutions from Europe¹⁹.

Since BiH joined Tempus programme, all public universities have appointed staff for international cooperation at the university level. These staff members are responsible for all affairs related to cooperation agreements, mobility, coordination, information provision, promotion and related. In time, as the international activities intensified, so have the activities of university level structures in this respect. Consequently, all public universities have established official international relations officers, employing at least one FTE staff member. For instance, University of Sarajevo has five staff members²⁰, while University of Banja Luka has one staff member at the university level and both universities who have a network of faculty level associates (academic or administrative staff members appointed by the dean) who also work in international relations matters²¹.

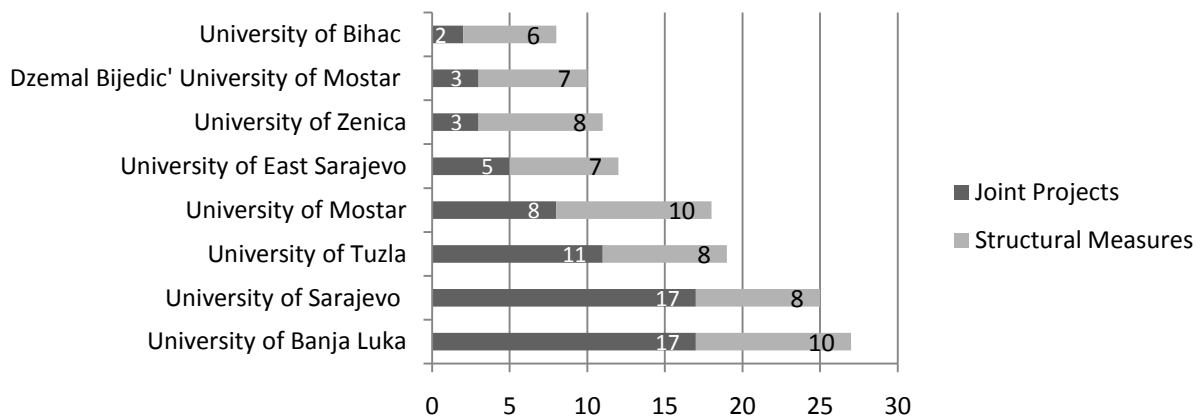
Figure 3 below ranks HEIs in BiH by the total number of partnerships they have established under the EU TEMPUS scheme in the last 5 years. It is interesting to note that all HEIs listed are public universities, which could imply that private universities (or non-university HEIs for that matter) do not see EU as a facilitator in establishing international cooperation or that they are not competitive enough when it comes to these funds. On the other hand, as we have seen earlier in this section, private HEIs do engage in international partnerships, yet it seems that these partnerships are of different kind that those promoted through programmes such as Tempus and Erasmus Mundus. One could argue that while the focus of public HEIs is on funds for cooperation as a means of development and modernisation, the focus of private HE providers may be the attractiveness or better accessibility which would position them better on the student market.

¹⁹ HEI website <http://www.unibl.rs/en/page/Cooperation/29>, last retrieved on 25.2.2013

²⁰ HEI website http://unsa.ba/s/index.php?option=com_content&task=blogcategory&id=122&Itemid=177, last retrieved on 26.2.2013

²¹ HEI website http://unsa.ba/s/index.php?option=com_content&task=blogcategory&id=122&Itemid=177, last retrieved on 25.2.2013

Figure 3. Higher education institutions with highest participation in TEMPUS IV (2008-2012)



Source: EACEA, 2012

Structure of educational provision

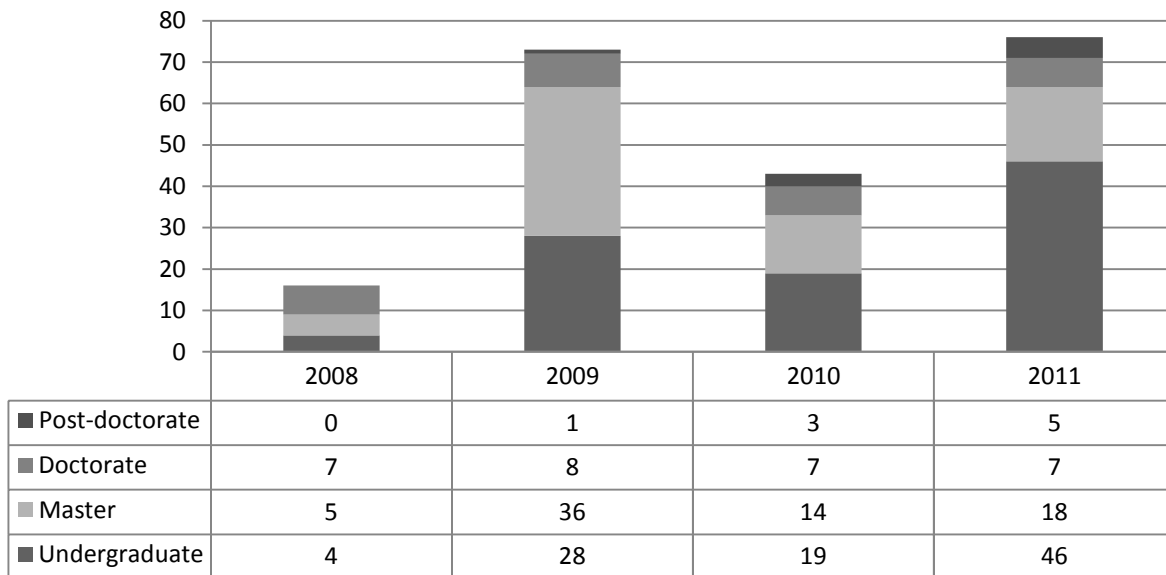
No law regulating HE at any level in BiH prevents a HEI from determining, implementing and developing its own educational, scientific, art and expert programmes and research projects. On the other hand, in order to conduct these activities in particular when it comes to issuing credentials such as diplomas, a HEI needs to obtain a licence for which purpose it undergoes the process of accreditation.

Adoption of curricula for undergraduate, postgraduate and doctoral studies is the responsibility of the highest academic body at a HEI – the Senate. Upon becoming signatory to the Bologna declaration, BiH restructured its studies in line with the three cycle system promoted by the Bologna process. However, there is no systemic data on the total number of study programmes, nor on the effect of the reforms on the efficiency of studies.

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 2007²²), 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. Figure 4 provides the number of BiH students using one the EU Erasmus Mundus mobility scheme (EACEA, 2012).

²² CEEPUS website - http://www.ceepus.info/public/nco/ncoinformation_main.aspx?Country=BA, last retrieved on 25.2.2013

Figure 4. Participation of BiH in Erasmus Mundus– Partnerships (External Cooperation Window, Action 2)

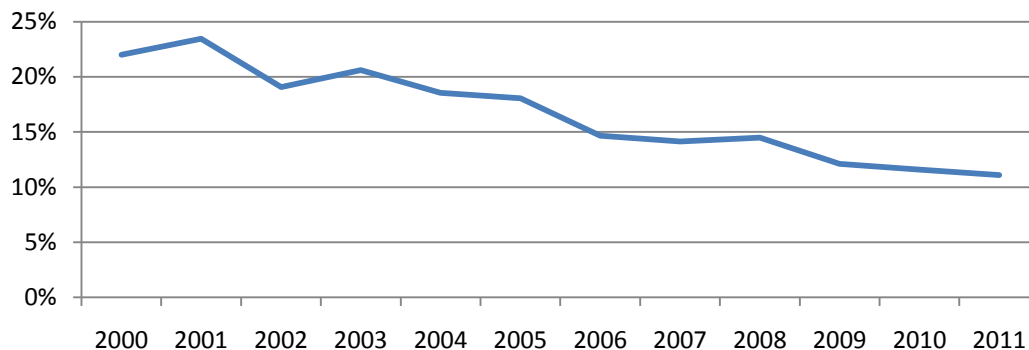


Source: EACEA, 2012

According to UIS database (estimation), the number of international (or internationally mobile) students in 2011 was 5188 (the inbound mobility rate for the year being 4.82%). 2011 was also the first year for which when data on this indicator was available on UIS database. However, it would be worthwhile reflecting on the figures UIS estimates are on the outbound mobility ratio in BiH (i.e. “the number of students from a given country studying abroad, expressed as a percentage of total tertiary enrolment in that country,” UIS definition), as well as compare them to the ratio on incoming students.

The trend shown in Figure 5 indicates a decreasing percentage of BiH students going to study abroad (presumably for both full degree and non-degree). At first, the figure is striking for two reasons. First, the level of outbound mobility in 2000, which was comparatively high and second, the downward trend in the subsequent years. One possible explanation for the former could be the number of BiH citizens emigrating to other countries after the war, or, to probably a lesser extent, students from BiH enrolling at HEIs in other republics of the former Yugoslavia (e.g. in academic 2000/2001, the number of BiH citizens at HEIs in Serbia was 4068, in 2004/2005 and in 2010/2011 - 4796) , while for the latter part we could guess that as the BiH system expanded, its absorption capacity grew, hence more and more BiH students end up studying in their home country instead of going abroad.

Figure 5. Outbound mobility rate



Source: UIS; Data for 2000-2006 calculated combining UIS data on mobility and BiH Statistics on total enrolments

However, these figures tell us little of the mobility in relation to the Bologna process related reforms, of which, only perhaps, the data in Figure 4 could be somewhat more indicative.

In 2011, the University of Banja Luka recommended faculties to foresee a so-called “mobility window” in developing new study programmes, i.e. a possibility for students to study for a period of one or two semesters, which this window would allow, at some other HEI abroad²³. Simultaneously, in what seems a complementary measure, in 2012 government of RS allocated 56.250 EUR for student mobility activities in 2013 which students can use to support themselves in any kind of non-degree international academic exchange.²⁴

However, given that BiH’s joining the Bologna process and consequent increased attention of policy makers to mobility coincided with the increase in opportunity for mobility provided by EU schemes or CEEPUS, it is difficult to determine whether restructuring of the study programmes as such contributed to enhancement of student and staff mobility.

Professional and academic programmes

According to the Framework Law on HE (2007), HEIs in Bosnia and Herzegovina can be either universities (Univerzitet) or “professional colleges” (visoka škola). University is defined as a higher education institution which organises both teaching and research activity and offers academic degrees in all three cycles, and which offers a minimum of five study programmes in at least three different subject areas.

²³ http://www.unibl.org/uni/sajt/doc/File/dokumenti/Uputsvo_za_izradu_studijskih_programa.pdf, p. 19, last retrieved on 25.2.2013

²⁴ Budget of the Republic of Srpska for 2013 <http://www.vladars.net/sr-SP-Cyrl/Vlada/Ministarstva/mf/Servisi/Poslovanje/Documents/Budzet%20RS%20za%202013.%20godinu.pdf>, last retrieved on 25.2.2013

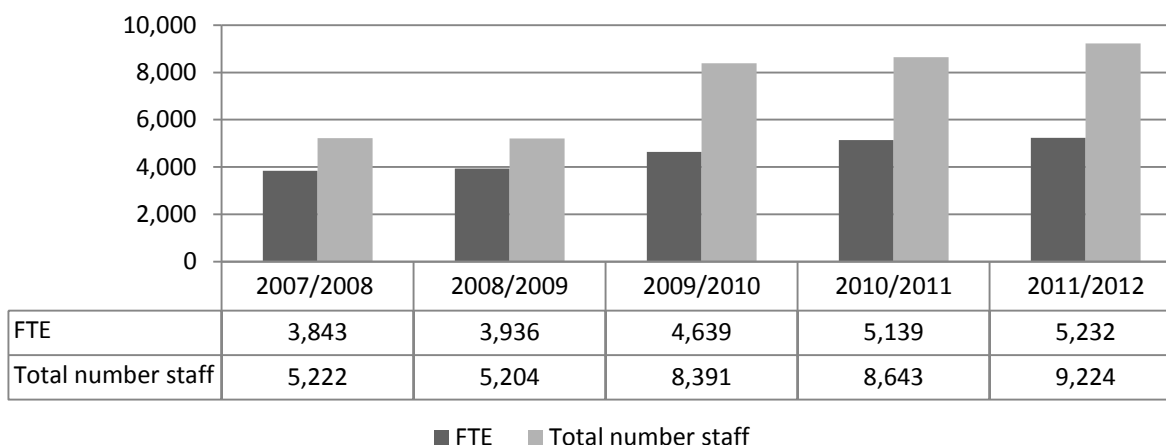
Colleges, on the other hand, are HEIs offering degrees of the first cycle in at least one study programme and at least one subject area. Hence, in terms of the classification of HE systems by (Kyvik, 2004), the HE system of BiH can be classified as a typical binary system. However, in principle, universities are not supposed to offer professional programmes. In practice, market needs and professional relevance are taken into account in developing study programmes, the latter being particularly paid attention to in the recent years (UBL-1-JB).

Interestingly, according to the Strategy for the Development of Republic of Srpska 2010-2014 (2009), some private universities did not deliver all the study programmes for which they have received licence, which in practice meant that they do not fulfil the basic requirements a HEI needs to fulfil in order to obtain the status of a university – at least five different study programmes from at least three scientific fields.

Staff

The total number of staff at HEIs in BiH has been increasing in the past several years – 33% across the period 2007/2008 – 2011/2012 (Figure 6). However, while this increase has been more notable in terms of total staff number, the number of full-time equivalent staff members has increased only slightly. Moreover, the percentage of female teachers has remained at the same level in this period – between 38 and 40% (UIS). The data presented here refers to both administrative and academic staff, while separate data for both are not available, not even at the entity statistics agencies’ websites.

Figure 6. Academic and administrative staff in BiH



Source: BiH Statistics Agency (same reported by UIS)

In the case of Republic of Srpska (Table 3), a similar trend can be noted in terms of total number of academic staff (data for administrative staff not available) – both teaching and associate teaching staff (the categorisation in official use by Institute of Statistics of the Republic of Srpska).

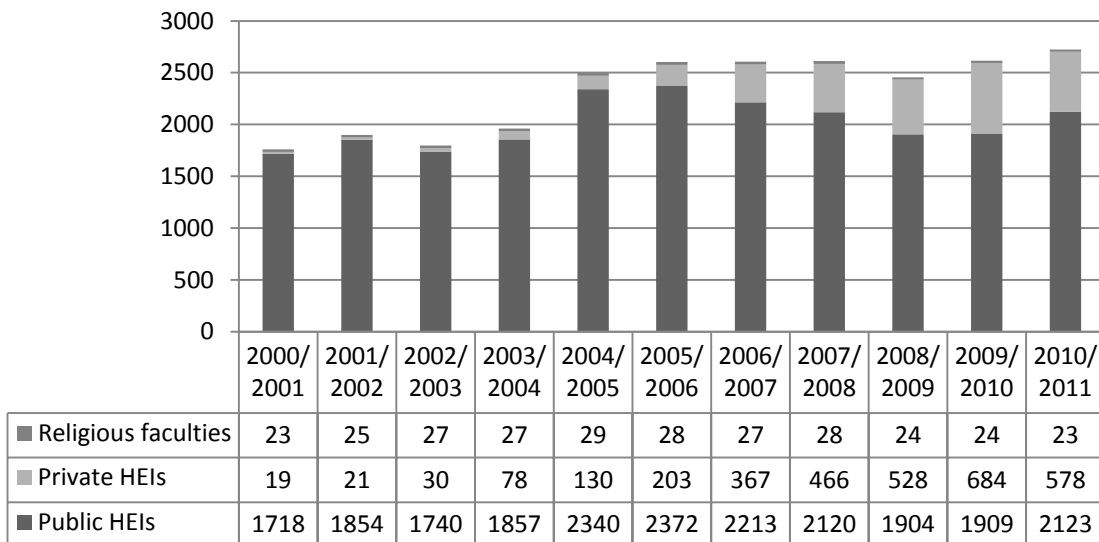
Table 3. Academic staff in Republic of Srpska

Academic staff in Republic of Srpska				
	Teaching staff		Associate teaching staff	
	Total	Working full-time	Total	Working full-time
2002/2003	1089	586	708	538
2003/2004	1225	628	737	512
2004/2005	1481	674	1018	569
2005/2006	1537	688	1066	603
2006/2007	1576	769	1031	665
2007/2008	1512	757	1102	679
2008/2009	1383	715	1073	708

Source: Statistics Agency of the RS

When one looks at the distribution of staff by type of HEI in terms of public-private, as expected, the rise in the number of academic staff is relatively more prominent in the private sector, yet in absolute terms both have experienced more or less the same increase in number. (Figure 7)

Figure 7. Academic staff according to the ownership of HEI (RS)



Source: Statistics Agency of the Republic of Srpska

According to the Framework Law on HE (Art. 19), HEIs in BiH are free to employ staff. In RS, the Ministry gives consent to the systematisation of non-academic staff, while in FBiH this competence lies with the respective canton ministries. In Sarajevo Canton (Law, Article 5, Paragraph 2, Sub-paragraph c), for instance, an institution which provides higher education has the autonomy to appoint staff.

The policy with regards to salaries also varies across the country, yet in principle, and the basic salary is determined either by HEIs themselves or by a competent authority. According to the Law on Higher Education of Canton Sarajevo (2008) (Article 140, Paragraph 3), the academic staff and other employees of an institution of higher education are paid in accordance with the unique rules of procedure regulating salaries, adopted by the board of the HEI upon senate's proposal. On the other hand, according to the Law on Higher Education of the Republic of Srpska (Article 136, Paragraph 1, 2010, amended in 2011), salaries of HEI employees are financed by the budget of the Republic of Srpska, in accordance with regulation on standards and norms for financing institutions of higher education. In the case of RS, a university can add up to 30% on the top of that salary as incentive, or up to 50% for additional work.²⁵

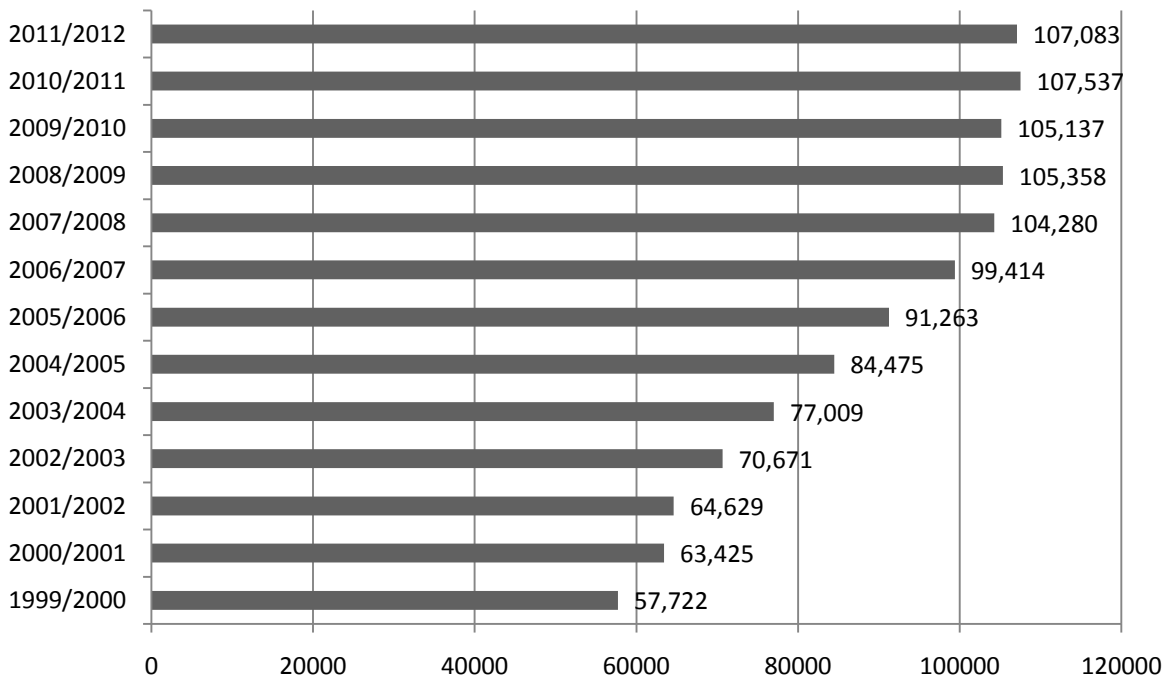
Students

The data collection method employed by statistics agencies in BiH with regards to the student numbers follows the recommendations of ISCED 97 - International Standard Classification of Education. In Bosnia and Herzegovina education system ISCED 5 corresponds to tertiary education, including postgraduate study for masters degree, while ISCED 6 corresponds to a doctoral degree.

The total number of students at all levels has been rising for at least past 15 years (Figure 8) and in the period 1999 – 2011 the number of students has practically doubled (Statistics Agency of BiH).

²⁵ Special Collective Agreement http://www.filoloski.rs.ba/adm/data/docs/%28120604113601%29_-_Posebni_kolektivni_ugovor.pdf. Last retrieved on 28.2.2012

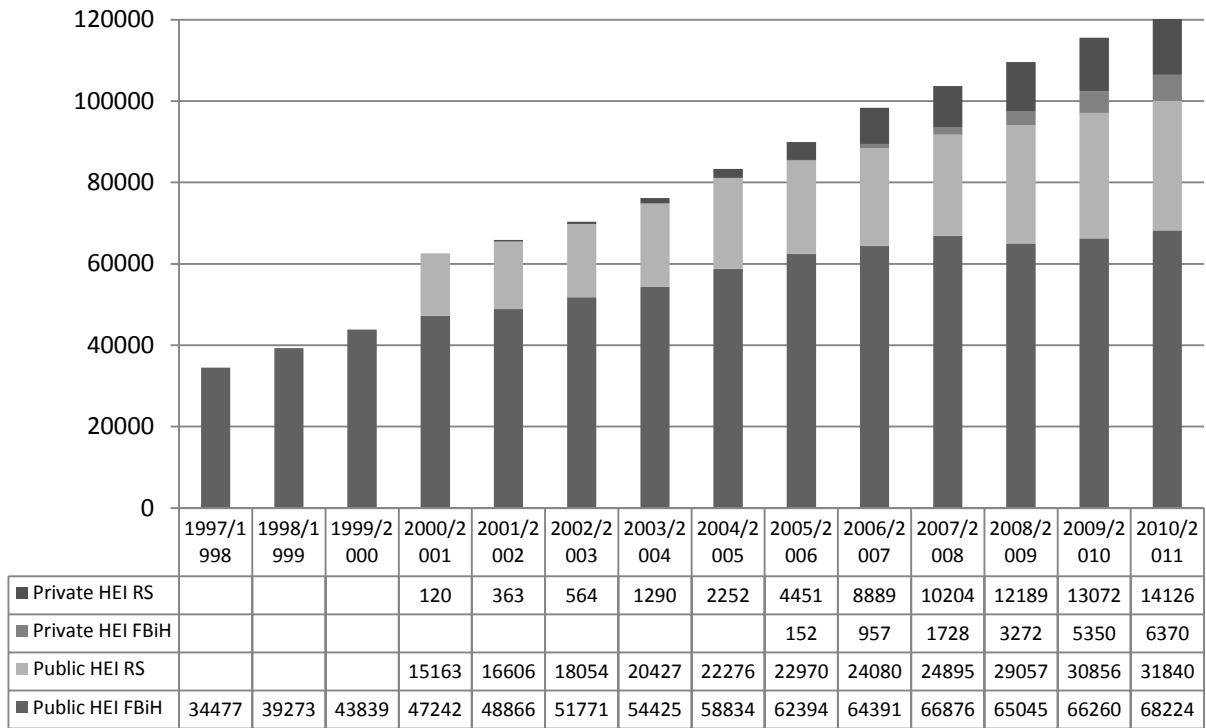
Figure 8. Total students in BiH



Source: Statistics Agency of BiH

Entities themselves have experienced a similar expansion, also across public and private sectors (Figure 9). At the same time, private HE sector, in terms of student numbers, is significantly smaller in FBiH than in RS, which is opposite from the case in the public sector. In terms of relative growth, private HE sector in RS stands out, while in terms of absolute number of students enrolled, one can note that since the first private provider appeared in RS in 2000, public and private HEIs in RS have managed to more or less equally meet the growing demand for higher education.

Figure 9. Students enrolled in HE in BiH (RS+FBiH) (ISCED 5 and 6)



Source: Institute of Statistics of the Republic of Srpska and Federal Office of Statistics

On the other hand, in the case of FBiH, it was the public sector which mostly “absorbed” the “new” students. Between 1997 and 2010, the number of students at all levels in public HEIs in FBiH exactly doubled (the number of students in academic 1997/1998 in FBiH was 34.477), yet in the academic 2010/2012, the private HE sectors enrolled less than 10% of the student body of FBiH, while in the case of RS this was more than 40%. However, given that the private providers appeared later in FBiH than in RS and that its growth rate is similar to the rate in enrolments of private HEIs in RS in the first 5 years, we can as well argue that it is yet to grow. On the other hand, given that the total student numbers in the country are at more or less the same level (between 104.000 and 108.000 in the period 2007/2008-2011/2012), it may as well be possible that the system growth has reached its peak.

With regards to the student numbers by level of study, in the past 5 years (not taking into account the integrated studies), the 3rd cycle is the one with the highest growth rate in terms of student numbers, followed by the 2nd cycle (Table 4).

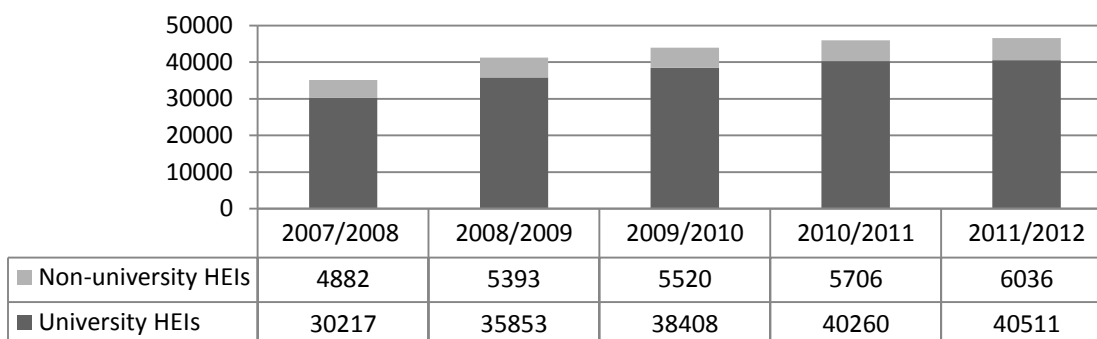
Table 4. Tertiary education students at ISCED 5 and ISCED 6 levels in FBiH

Tertiary education students at ISCED 5 and ISCED 6 levels in FBiH							
Year	Old system of study		Bologna				Total
	VI Degree	VII Degree	1 st Cycle	2 nd Cycle	3 rd Cycle	Integrated 1 st and 2 nd	
2007/2008	2404	66200					68604
2008/2009	2345	65972					68317
2009/2010	1299	10210	55739	3424	66	872	71610
2010/2011	816	6796	60536	4865	108	1473	74594
2011/2012	659	3534	58977	6821	169	4405	74565
(estimated) increase in total number of students ²⁶	-73%	-95%	6%	99%	156%	405%	9%

Source: Federal Office of Statistics

The non-university sector in RS has experienced modest growth in the past five years, especially when compared to the university sector in the same entity (Figure 10).

Figure 10. Students enrolled in university and non-university HEIs in Republic of Srpska



Source: Institute of Statistics of the Republic of Srpska

²⁶ For the period for which the figures are provided here

Table 5. Increase in student numbers in BiH between 2007/08 – 2011/2012

Increase in student numbers 2007/08 – 2011/2012		
University HEIs	Non-university HEIs	Total
34,07%	23,64%	32,62%

Source: Institute of Statistics of the Republic of Srpska and Federal Office of Statistics

With regards to the gross enrolment ratio, technically, it is not possible to make a precise calculation, given that the total population and the age group are not known due to the fact that the census has not been conducted in the country since 1991²⁷. Therefore, we provide here an estimation given by the World Bank for the year 2011 - 38%²⁸. The completion rate is yet another estimation which needs to be made as no data are available for the country.

Funding of higher education

The core funding of the HEIs in the public sector is provided by the responsible ministry of Republika Srpska, the Cantonal Ministries in the Federation and the Government of Brčko District, Department for education. However, cantons are not obliged to allocate resources for HE, and actually there are two cantons - Posavina and Podrinje which do not (Mihčić, 2009). The allocation mechanisms in place are input-based and incremental and they cover operating costs of HEIs, which is a dominant case across the country. Notably, on average more than 80% of budget allocation ends up as staff salaries (Branković, 2012). As the budget is predestined, public HEIs are not free to reallocate it internally.

In 2008 it was estimated that the Federation of BiH allocated 6% of its GDP on education, Republic of Srpska 4%, and Brčko District 11,2% (Ministry of Civil Affairs, 2012), while 18% of the total budget planned for education is allocated to higher education. As a country, BiH is in this respect a leading country in the region of South Eastern Europe, where the average investment is about 3.5%, while in OECD countries it is about 5% of GDP (Open Society Foundations, 2010; European Training Foundation, 2009). Notably, a slight increase in total investment has been noted in the last three years, yet the level varies across the country and in some cantons there was a drop in total public allocation (Branković, 2012).

Apart from the finances allocated from the state budget, HEIs in BiH can also generate own income from donations, funds, tuition fees, intellectual property, commercial activity etc.

²⁷ At the moment, census in BiH is in preparation and is planned to take place in 2013.

²⁸ <http://data.worldbank.org/indicator/SE.TER.ENRR>, last retrieved on 25.2.2013

In public universities full-time students can either pay tuition fee or be in the so-called “budget quota” and not pay (based on merit), while part-time students, as a rule, are required to pay the tuition. Students of lower socio-economic background (students with disabilities, children of war victims, single-parent children, i.a.) can be exempt from paying upon submitting a request to the HEI.

For the 2011/2012 academic year (Table 6), 20.351 students in the Federation of BiH were enrolled in the fee-paying category which (27.29%) (Federal Office of Statistics). In RS, 17% of all non-university students in the academic 2011/2012 paid the tuition fee, while this percentage in the university sector was 83% (63% in public universities; data for different levels is not available).

Table 6. Students in the tuition paying quota in BiH 2011/2012

Students in the tuition paying quota in BiH		
	Full-time (self-financed)	Part-time
Undergraduate	14310 (Bologna) + 18 (Old system) = 1328	11882 + 639 = 12521
Masters	1758 + 440 = 2198	1687 + 1096 = 2783
Integrated	1166	291
PhD	47	17
Total	4739	15612

Source: Statistics Agency of BiH

The tuition fees in BiH vary to a large extent. The minimum, maximum and most common range are provided in the Table 7 (in EUR; retrieved through HEIs websites²⁹). Among PhD tuition costs, the lowest was recorded at International Burch University of Sarajevo³⁰, and the highest at the American University of Sarajevo.³¹

Table 7. Tuition fee range in BiH

Tuition fee range in BiH	
	Higher Education Institutions
Undergraduate	Min 50 – Max 1500 (Most common range 150 – 750)
Masters	Min 75 – Max 2500 (Most Common range 500 – 1500)
Integrated	N/A
PhD	Min 2000 – Max 8500

Source: websites of HEIs

²⁹ List of HEIs in BiH http://hea.gov.ba/kvalitet/evdencija_vsu/lista.aspx, last retrieved on 25.2.2013

³⁰ HEI website <http://gsu.ibu.edu.ba/index.php?id=984>, last retrieved on 25.2.2013

³¹ HEI website <http://aubih.edu.ba/en/admissions/tuition&fees.php>, last retrieved on 25.2.2013

Whether a student in a public HEI falls into a budget or self-finance quota depends on his/her performance at the entry exam or further progression and performance during studies. The respective governments set quotas for the budget supported students which are limited and highly competitive. Based on their performance at the entrance exam, students are ranked at the level of HE and consequently placed in one of the two categories. The students who score well enough to be included in the quota are considered full time students and are eligible to further compete for benefits, such as government scholarships or subsidised housing.

As a measure to support students' living, the Ministry of Education and Culture in RS and the cantonal ministries of education in FBiH offer scholarships for students on a competitive basis and they are purely based on merit (EACEA, 2012).

Quality in higher education

Agency for Development of Higher Education and Quality Assurance (HEA) at the country level, respective cantonal ministries and ministry of the Republic of Srpska and the Department for education of the Brčko District are responsible for quality assurance. The elements of BiH external quality assurance system are specified in the BiH Standards and Guidelines for Quality Assurance in Higher Education (Standard 2.2) and these are a) a self-review report, b) a site visit, c) a published evaluation report and d) a follow-up (National Report regarding the Bologna Process implementation 2009-2012 - Bosnia and Herzegovina, 2012). These BiH standards and guidelines are designed in line with the European Standards and Guidelines for Quality Assurance in higher education (ESG).

Quality assurance and accreditation was one of the first steps BiH undertook in to join the European Higher Education Area. However, not until the Framework Law was adopted and the Agency for Development of Higher Education and Quality Assurance was established (by that law), concrete measures have been undertaken with regards to external evaluation and accreditation of HEIs. The role of the Agency is to establish criteria for appointment of local and international experts for quality evaluation, to make recommendations with regards to accreditation of institutions, to establish quality standards, etc.

The Agency for Development of Higher Education and Quality Assurance is an independent public organization. In principle, independent work of the Agency, within its jurisdiction, related to external quality assurance, is to be achieved by legal, transparent and public selection procedures of local and international experts which provide assessment and quality review and give recommendation on accreditation of higher education institutions. The Agency is financed from the budget of BiH HEIs, and in the part of jurisdiction related to external assurance, from its own income. The Agency can engage in cooperation, within its area of activity, with relevant local institutions - educational authorities in BiH,

entities, cantons and Brčko District, academic community, international community and relevant stakeholders.³²

Apart from the agency at the state level, Republic of Srpska has established its own agency for accreditation (Higher Education Accreditation Agency of the Republic of Srpska) with the task to organise and implement external quality evaluation process and accreditation of HEIs and study programmes. This procedure is also conducted in accordance with European standards and procedures published in the aforementioned ESG document, requiring the Agency to possess required resources, competent staff and expert knowledge for its implementation.³³

The quality assurance process in BiH is regulated by the Standards and Guidelines for Ensuring Quality in Higher Education in BiH, developed as a joint project of the European Commission and Council of Europe and adopted in 2007. It focuses on three areas:

- Internal quality control, organized within each institution of higher education, which regards the development, implementation and monitoring of the quality assurance process and structure;
- External quality assurance and relevant activities which regard matters to be evaluated within the institutions and the manner of conducting external quality assurance;
- Operations of the Agency for External Quality Assurance with regards to its establishment, organization and recognition.

Recently, the Governing Board of the Agency has approved the Decision on the Amendments to the Decision on the Criteria for accreditation of higher education institutions in BiH. The Amendments determined criteria for accreditation of study programmes and criteria for accreditation of distance learning study programmes in Bosnia and Herzegovina. Seven criteria for accreditation of study programmes have been determined: educational objectives and learning outcomes, curriculum, human resources, students, physical resources, internal quality assurance and the results achieved. With each of the above criteria are prescribed indicators in order to determine the compliance of each criterion. Criteria for accreditation of distance learning study programmes have also been determined: institutional capacity, study program, human resources and physical resources, as well as the indicators by which will be determined compliance of the prescribed criteria. During the development of Criteria for accreditation of higher education institutions, study programmes and distance learning study programmes, Standards and Guidelines for quality assurance in European Higher Education Area have been considered. Representatives of relevant ministries and higher education institutions participated in preparation of this document, during public consultations. Criteria for accreditation of higher education institutions apply to higher education institutions in the processes of accreditation, so-called institutional accreditation, while criteria for accreditation of study programmes apply to study programmes in the processes of accreditation, so - called, programme accreditation.

³² HEA website <http://hea.gov.ba/o-nama/OsnovniPodaci.aspx>, last retrieved on 25.2.2013

³³ Higher Education Accreditation Agency of the Republic of Srpska website <http://hears.com/en/abouten.html>, last retrieved on 25.2.2013

Accreditation of study programmes may be required only by higher education institution which, according to the regulations of the relevant education authority, has been received unconditional institutional accreditation. The basis for making this document were the criteria for the accreditation of study programmes developed under the ESABiH Tempus project and tested pilot accreditation of study programmes, implemented during the last year to 8 public universities in Bosnia and Herzegovina.³⁴

Moreover, the cantonal inspections for each canton in the Federation of BiH and the Republic Administration for Inspection Activities in the Republic of Srpska are responsible for monitoring that working conditions in educational institutions are met, enrolment of students, realization of curricula, use of approved educational means, advancement and specialist training of teachers, experts and associates and their academic and scientific titles, fulfilment of rights and obligations of students, parents, teachers, experts, headmasters, rectors and deans, work of expert and management authorities in educational institutions, implementation of disciplinary measures for students, payment of school fees and other expenses paid by children and students, and implementation of laws, other regulations and legal instruments in all educational institutions.³⁵

The internal quality assurance universities are responsible for the processes and activities which are expected to secure quality of higher education in accordance with defined standards. These include the processes of accreditation, external evaluation of the institution and programme, self-evaluation, internal evaluation, student evaluation, analysis of lecture effectiveness etc. This is conducted for the purpose of better equipping the universities for fulfilment of their research and educational tasks, reducing errors, creating customer (students and community) satisfaction, strive for excellence, increase money values, improving the university, and improving efficiency. The quality assurance bodies of the universities achieve this by improving the decision making process in order to maintain the functionality of the University and prevent centralization of decision making, reaching the right balance between research and education, ensure the staff and material resources are adequate, internationally participating in the realization of quality assurance policies, better coordinating academic and administrative staff, improving infrastructure, improving academic performance of the educational staff, making communication with students more transparent and adaptable, supporting students, creating better studying conditions and adequately involving students in the quality assurance policies, improving curricula with the focus on employment, internationalization and globalization, and adequately reacting to evaluations, accreditations and audits.³⁶

³⁴ HEA website <http://hea.gov.ba/Aktuelnosti/?id=3920> last retrieved on 28.2.2013

³⁵ Republic of Srpska Inspectorate
http://www.inspektorat.vladars.net/index.php?option=com_content&view=article&id=76:2008-07-30-10-28-01&catid=61:2008-07-24-20-26-36&Itemid=97&lang=en last retrieved on 28.2.2013

³⁶ List of HEIs in BiH http://hea.gov.ba/kvalitet/evidencija_vsu/lista.aspx, last retrieved on 25.2.2013

Recent changes and specific characteristics

BiH joined the Bologna process in 2003 and since 2004 it is also a signatory to the Convention on the Recognition of Qualifications Concerning Higher Education in the European Region (Council of Europe). In principle, all reforms that have been initiated in BiH, in particular those at the country or entity levels, have been in the framework of the Bologna process. These include restructuring of the educational provision system – in line with the three cycle system, curricula modernization, development of quality assurance mechanisms, enhancing student and staff mobility, promoting European cooperation, recognition of study periods abroad, qualifications frameworks, etc. (UBL-1-JB)

Even though considerable effort has been put in restructuring the old study system, not all the study programmes appear to have adopted the ECTS system. According to the report for the last ministerial summit, more than 75% of institutions and programmes are using ECTS for both transfer and accumulation purposes, while allocation of ECTS is based on contact hours, or a combination of contact hours and student workload (Bologna Process Stocktaking Report 2012). However, since this is based on self-reporting of the country, we cannot estimate to what extent this actually is the case.

According to the EACEA (2012) report on HE reforms in Tempus countries, one of the most notable challenges HE in BiH faces is the one related to its governance, i.e. “dividing tasks and responsibilities between main stakeholders, including relevant ministries, HEIs, and QA agencies, which is currently not clearly defined” (EACEA, 2012, p. 33). This by all means can be characterised as a BiH specific challenge, in particular in the case of FBiH where the responsibility for HE lies with cantonal ministries. The challenges arising from this particular issue of fragmentation are multifaceted, and are not only specific to higher education, but other areas as well, such as passing and implementing regulation or aligning them under an overarching policy direction. The challenge of legal harmonisation in BiH is a well-known one and it transcends all areas of public domain. Apart from legislation, the fragmented state poses challenges for research, as practices in data-collection by official statistics agencies differ, or in some cases are collected in one entity, but not in the other (e.g. FBiH does not collect data for R&D), thus aggregating data at the country level sometimes poses considerable difficulties.

3. The Research System

Size of the research sector

BiH Statistics Agency does not publish data on R&D, most likely due to the fact that the FBiH Statistics Agency does not monitor research activity as such. This information deficit can be attributed to the fact that Federal legislation on research, which would regulate criteria and the obligation of registering, does not exist (Strategy for the Scientific Development of the Federation of Bosnia and Herzegovina 2012-2022, 2011). Even in the case of Republic of Srpska, if one is to conclude on the data included in statistical yearbooks for 2009 and 2010 (oldest available through the web page), research was not monitored by the entity statistics agency prior to 2009. Nevertheless, for a number of indicators, UNESCO's database does offer (estimated, however) figures on a number of indicators even for years before 2007 (some of which will be shared here). It is due to these reasons that most of the data provided here on research activity in BiH is partial (this also refers to the data obtained through UIS).

In FBiH, the data can be only obtained with regards to universities (i.e. under the assumption that all HEIs registered as universities are research active as well), but not for independent institutes and organisational units within HEIs which are not legal entities on their own. Also, there is no data about research and development centres in enterprises. In turn, Institute of Statistics of the Republic of Srpska does and in the Table 8 below we provide the number of organizations in RS registered as R&D active, following OECD Frascati Manual categorisation.

Table 8. R&D organisations in the Republic of Srpska

R&D organisations in the Republic of Srpska				
Business enterprise	Government	Higher education	Public non-profit	Total
16	4	28	1	49

Source: Institute of Statistics of the Republic of Srpska

However, a registry containing many research institutions is established by EUROAXESS BiH³⁷, in which R&D organisations are grouped as academies of sciences and arts, companies, institutes, universities and university centres. The registry lists 112 organisations in the category "universities," where the entire universities and their constituent faculties are both listed (even of the same university), 22 institutes (both those which are part of universities and independent ones), 9 university centres (being part of comprehensive public universities, most of them at University of Sarajevo or the University of Banja Luka) and 2 academies of arts and sciences. It is, however, not clear how reliable this database is in terms of its comprehensiveness, in particular in the case of the university sector. Another project initiated by the Ministry of Science and Education of the Sarajevo Canton aimed to establish a Registry

³⁷ EURAXESS BiH <http://www.euraxess.ba/bs/?sec=16&rod=14>, last retrieved on 25.2.2013

of Research Organizations in FBiH. The registry currently lists 60 organisations, most of which are university organisational units.³⁸

In conclusion, we cannot even estimate the number of research active organisations in the whole of BiH in any of the above given categories used by the Institute of Statistics of the Republic of Srpska.

Unlike in the case of staff in HE, in research, data on both academic and administrative staff in RS is available. In Table 9a and 9b we provide data from Statistics Yearbooks of Republic of Srpska for years available. Notably, for the three years available, the total number of staff was declining, both in terms of full-time equivalent personnel and individuals engaged in R&D.

Table 9a. R&D personnel, administrative and academic

Year	FTE (Total R&D personnel in FTE)	FTE administrative (managerial and other supporting staff)	FTE research (researchers, associates and technicians)	Total number staff (Total R&D personnel in HC)
2007/2008	N/A	N/A	N/A	N/A
2008/2009	N/A	N/A	N/A	N/A
2009/2010	918.6	N/A	N/A	1273
2010/2011	791.8	59	732.8	1053
2011/2012	659.7	78.1	581.6	898
(estimated) increase in total number of staff 2009/10 – 2011/2012				-29.45 %

Source: Institute of Statistics of the Republic of Srpska

Table 9b. R&D personnel, administrative and academic (as categorised by the Institute of Statistics of the Republic of Srpska for year 2011 – most recent year available).

Type of staff	FTE
Researchers	412.0
Research Associates	91.0
Technical staff	78.6
Managerial staff	23.4
Other staff	54.7
Total	659.7

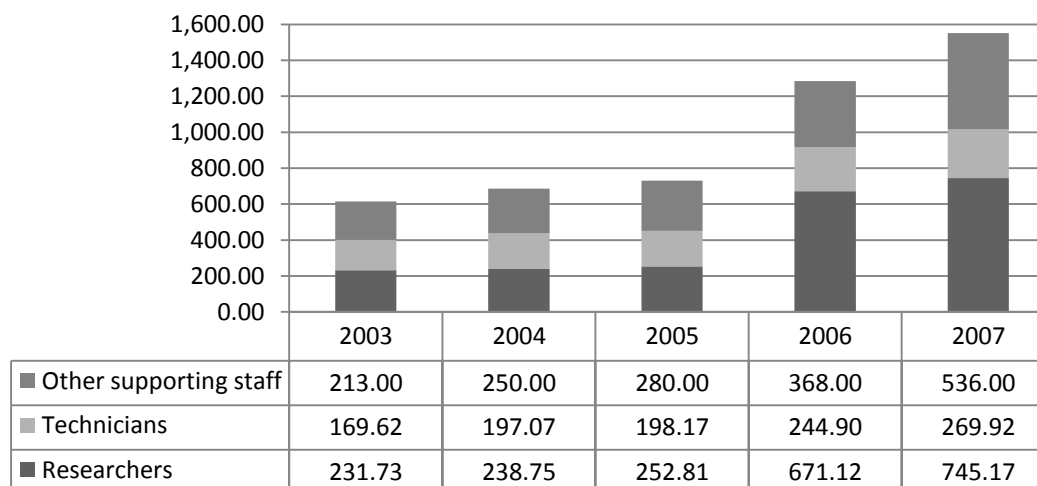
Source: Institute of Statistics of the Republic of Srpska

Interestingly, for the period up to 2007 (but not later), UNESCO's databases do contain (albeit partial) data for BiH. In Figure 11 we can see the increase in total R&D personnel (as) in the country over the period of 5 years, in particular in 2006 and 2006 when the number of primarily researchers more than doubled. The trend expressed in headcount (HC) is very similar. However, given that this data is taken

³⁸ Registry of Research Organisations in FBiH
<http://registar.nub.ba/pls/htmldb/f?p=111:3:4541672225334972842::NO::> , last retrieved on 25.2.2013

from an international database and it is not available in local statistics agencies, it is difficult to provide an explanation of the rising trend.

Figure 11. Total R&D personnel by type in BiH (FTE, estimation)



Source: UIS

Nevertheless, UIS does not provide data on R&D personnel by sector of employment, which could give us a better insight into whether this workforce is concentrated in higher education or another R&D sector. In Table 10 we display some of the other estimates UNESCO has made for BiH, which would be more valuable in comparison with other countries in the region or elsewhere.

Table 10. R&D personnel per million inhabitants, thousand total employment, thousand labour force, GERD per capita on BiH (partial data).

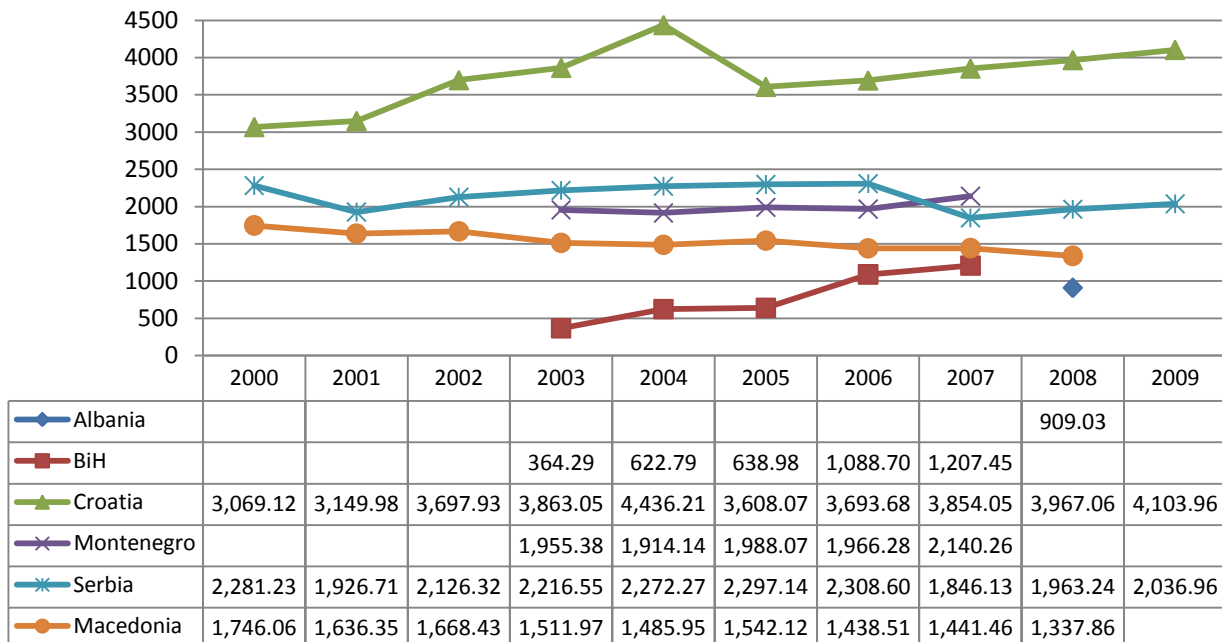
Year	2003	2004	2005	2006	2007	2008	2009
Total R&D personnel per million inhabitants (HC)	364.29	622.79	638.98	1,088.70	1,207.45	N/A	N/A
Total R&D personnel per thousand total employment (HC)	1.34	2.41	2.34	4.35	4.55	N/A	N/A
Total R&D personnel per thousand labour force (FTE)	0.45	0.50	0.53	0.92	1.09	N/A	N/A
GERD per capita (in current PPP\$)	0.99	0.94	1.75	1.47	2.06	1.65	1.87

Source: UIS

For illustration (Figure 12), we have compared the countries in the region using UNESCO data (in case of BiH they are partial and it is likely that these do not included the business sector). Together with

Albania, BiH's R&D personnel per million inhabitants are the lowest of the region, however, with notable increase towards 2007.³⁹

Figure 12. Total R&D personnel per million inhabitants (HC)



Source: UNESCO Institute for Statistics (BiH data partial)

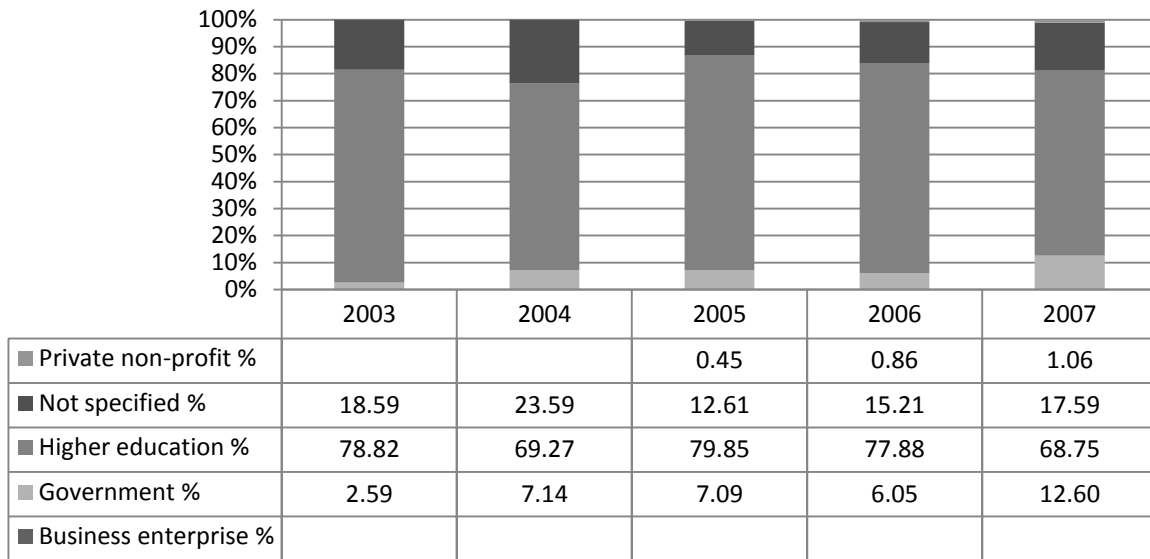
With regards to HE in particular, according to the FBiH Strategy, to total number of research staff in HE in 2008/2009 was 3718.

Research funding

The most recent available data on R&D activity from UNESCO Institute of Statistics dates from 2009 when GERD expressed relative to GDP, based on partial data was 0,022% (UNESCO IUS). However, in the proposal of the Strategy for the Development of R&D in FBiH (Strategy) the percentage for the same year given is 0,08 % GDP (no source listed). It is, however, possible that the UNESCO data does not include the business enterprise data at all, which could potentially explain the discrepancy between the two sources. According to Figure 13, HE is the largest sector in terms of the absorption of funds allocated to research from all sources. However, the data suggests that business enterprise sector does not conduct research, which is not likely, in particular when one looks at some of the above listed databases of research institutes in the country where business based institutes are also listed.

³⁹ Note: Kosovo not included as it is not available through UNESCO; BiH has not had census since 1992, hence its total population is also an estimation.

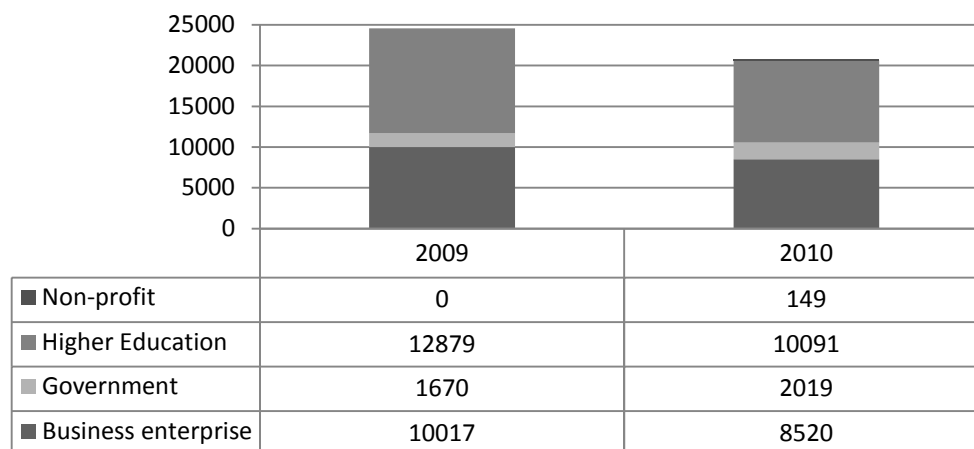
Figure 13. GERD by sector of performance in BiH



Source: UNESCO Institute for Statistics(data for Business enterprise not available)

On the issue of calculating the exact level of GERD in BiH, the authors of the FBiH Strategy conclude (Strategy for the Scientific Development of the Federation of Bosnia and Herzegovina 2012-2022 - ADDENDUM, 2011, pp. 69-70) that “due to the inability to determine the actual allocation for research activity in both entities and the Brčko District, and particularly those occasional contributions by local communities (a variety of studies and strategies in different areas) and business enterprises, as well as research funding from foreign donors, for the purpose of this Strategy we have come to an optimistic assumption that the total allocation from all sources is at the level of 0.1% GDP. In addition, it is assumed that all R&D activities and projects are realized by domestic or institutions or individuals, even though it is known that many projects, even those that are not funded through donations, are assigned to foreign institutions or experts, while sometimes even engaging foreign experts was a condition for receiving the grant.” Arguably, once we look only at Republic of Srpska, the situation becomes significantly simpler, due to its centralised government and its strong nodal position in terms of data. In Figure 14 we provide data on the RS research activity by sector of performance, while in Table 11 these are complemented also by source of income (in local currency, 1 BAM = 0.51 EUR).

Figure 14. Research expenditure by sector of performance in Republic of Srpska in 2010 (.000 BAM)



Source: Institute of Statistics of the Republic of Srpska

Table 11. Research expenditure in RS by source of funding and sector of performance (in .000 BAM)

Sources of funding	Sectors				Total
	Business enterprise	Government	Higher Education	Non-profit	
2009	10017	1670	12879	-	24566
2010	8520	2019	10091	149	20779
Republic of Srpska (domestic)	8496	2019	9620	149	20284
Republic and local government	2624	1990	5172	149	9935
Private and public enterprises	205	-	88	-	293
Non-profit organisation	4	-	-	-	4
Own income	5663	29	4360	-	10052
Abroad	2	-	412	-	414
Joint institutions of BiH	4	-	59	-	63
FBiH or Brčko District	18	-	-	-	18
Total 2010	8520	2019	10091	149	20779

Source: Institute of Statistics of the Republic of Srpska

Effectively, research activity in business enterprises is far from being negligible in comparison to other R&D sectors in RS and there is no reason to believe that in the case of FBiH is dramatically different, even though there is no data to support this. Still, the higher education sector remains as the leading one in terms of the total investment received for research activity.

With regards to internal allocation of finances for research, in RS they are classified as expenditure (“tekući izdaci”) and investment (“investicioni izdaci”). They are summarised in Table 12 and Figure 15.

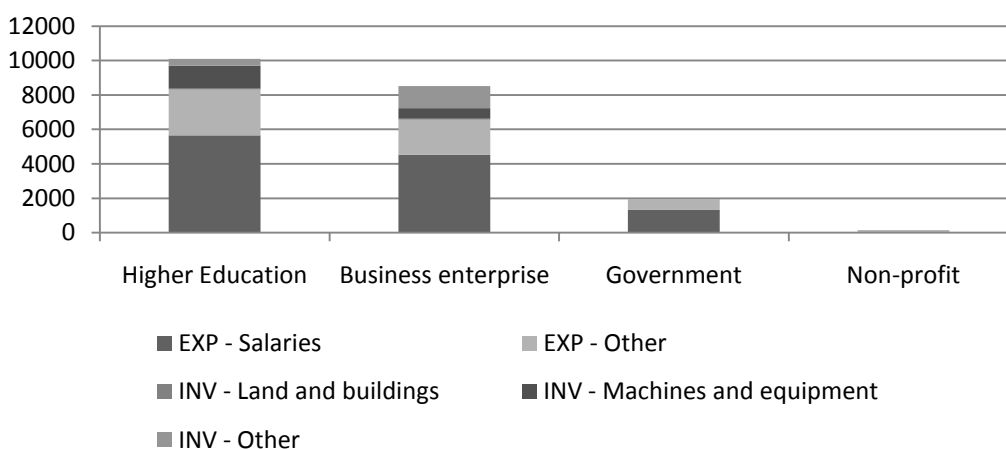
In all sectors expect for non-profit, most of the funds received are internally distributed to salaries and other types of regular expenditure. Notably, in 2010, HEIs overall invested more resources in machines and equipment than business enterprises (it is likely that here the size of the sector plays the key role), yet the businesses invested more financial resources in other types of investments, possibly new R&D projects. It is important to note here that the rules for the internal allocation of funds are more flexible for business enterprises than for higher education, especially when for the latter the source of these is state budget.

Table 12. GERD by type of activity (in .000 BAM)

Sector	Expenditure		GERD			Total
	Salaries	Other	Land and buildings	Machines and equipment	Other	
2009	14449	5817	717	1218	2365	24566
2010	11520	5459	128	1973	1699	20779
Business enterprise	4516	2041	59	624	1280	8520
Government	1330	638	-	17	34	2019
Higher Education	5659	2646	69	1332	385	10091
Non-profit	15	134	-	-	-	149
Total	11520	5459	128	1973	1699	20779

Source: Institute of Statistics of the Republic of Srpska

Figure 15. GERD by type of activity in 2010 (in .000 BAM)



Source: Institute of Statistics of the Republic of Srpska

The provisions on the financing of science are determined by the 2009 Framework Law on the Foundation of Scientific-Research Activity and Coordination and International Cooperation in Scientific Research of Bosnia and Herzegovina (shortened Framework Law on Research), which states that research activity should be funded by all levels - the budget of Bosnia and Herzegovina, entities, cantons

and Brčko District, and from other sources in accordance with the law (Framework Law on Research, 2009). However, the authors of the Strategy of FBiH are rather critical towards this law and they particularly stress its internal contradictions and hence impossibility of proper and coherent implementation. For instance, the Research Council of Bosnia and Herzegovina, established by this law has no influence on the research profession. The law does not foresee penalties for non-compliance and is thus declared as *lex imperfecta*. Importantly, the law does not define financial resources, hence it is argued it cannot play an important role in the role of the state in implementing its policies, especially when it comes to strengthening BiH's role within the European research framework.

With regards to the allocation mechanism of public funds, the two entities have established separate policies and legislation. Currently, the Federal Ministry of Education and Science allocates grants (open calls for research organisations in FBiH)⁴⁰ for activities such as organization of national and international meetings (congresses, conferences, symposia, forums, etc.), support for research of particular interest to the Federation, support to authors, academic and scientific institutions in publishing, study visits abroad, purchasing scholarly literature, and related. The awarding criteria are mostly the soundness of the rationale, demonstrated need for support, budget plan or results to date.

Currently, a law on the scientific fund is being drafted, which, once adopted, should secure financing of young researchers (30% of the total fund), financing of the existing and developing new infrastructure for scientific research (40%) and financing of the research and development projects, realised in cooperation with organisations from cantons, entities and in international cooperation (30%). These funds would be allocated for the above mentioned purposes in form of grants.⁴¹

In a fairly similar manner, Republic of Srpska entity has established criteria for supporting research projects, technology development and innovation activities, and related in the form of competitive research grants (Rulebook on Criteria for the Implementation of Research Programmes, 2008). Ministry of Science and Technology of RS each year announces public call proposals. The Ministry evaluates the quality of the proposal, including the justification of the budget proposed and the quality of the research team and the institution. These projects can be funded with up to 15,000 EUR.

By decision of the government of the Republic of Srpska from 2011, the Fund Dr. Milan Jelić was established as part of the continuation of regular activities of the former Foundation of the president of the Republic of Srpska - "Dr. Milan Jelić Foundation" founded in January 2007. The Dr. Milan Jelić Fund functions within the framework of the Ministry of Research and Technology as a separate organizational unit the purpose of which is to provide support to the most talented students from the Republic of Srpska with financing their studies, of all three cycles at domestic and foreign universities; encourage gifted young people to choose careers in scientific research; promotion of results achieved by scholarship holders; providing assistance in the development of a professional scientific research career;

⁴⁰ Federal Ministry of Education and Science – Public Call <http://bit.ly/YlhjKB>, last retrieved on 27.2.2013.

⁴¹ Draft Law on the Fund for Science ("Zakon o fondu za nauku") <http://mon.ks.gov.ba/preuzimanja/legislativa> last retrieved on 27.2.2013.

informing young talents about the possibilities of further development; cooperation with other institutions and organizations which are significant for the most talented students of the Republic and providing all other forms of financial and moral support for scholarship awardees in achieving remarkable results.⁴²

Quality in research activity

According to the Law on Scientific Research Activity of Republic of Srpska (2011, Art. 2), all public research institutes (founded by the government) are subject to external evaluation every three years, while private ones are evaluated only for the part of their activity funded by the government. The evaluation is conducted by a committee appointed for this purpose by the Minister. The committee evaluates the scientific work of the institute based on the results achieved (articles published, monographs, scholarly books, and master doctoral theses, new methods, patents, etc.), contracted scientific research projects co-financed by the government, as well as other research projects financed by other national and international sources (Art. 7). At the same time, the committee assesses the progress in terms of academic promotions and career advancement of institute staff. A similar evaluation of research organization in FBiH is not in place. Apart from evaluation at the organizational level, quality is assessed at the project level, in both entities in the case of projects supported by the entity ministry.

Research productivity in BiH

Research productivity in BiH as such is not monitored. Still, at the level of RS, Statistics Agency collects data on the number of research projects and studies (Table 13), but not research output.

Table 13. Research projects and studies in RS

	Basic	Applied	Experimental development	Total
2009	126	183	191	500
2010	56	167	156	379
2011	46	179	154	379

Source: Institute of Statistics of the Republic of Srpska

Recent changes and specific characteristics

The Strategy for Development of Scientific and Development Research Work in the Federation of Bosnia and Herzegovina 2012 – 2022 was adopted in 2011. The Strategy includes a situational analysis, assesses the impacts of foreign and domestic influences, develops strategic directions for scientific research and research and development and their manner of financing within the Federation of BiH, analyses the

⁴² Republic of Srpska Government website: <http://bit.ly/VrvMWu>, last retrieved on 28.2.2013.

legal framework and the manner of implementation of the strategy, and presents the plan of activities for the realization of the strategy. The plan, amongst other things, includes adoption of the Strategy in the Government and Parliament of FBiH, establishment of working groups within the FBiH Parliament to implement the Strategy, development of a detailed plan of action, adoption of the Law on Scientific Research and Research and Development, establishment of the Fund for Scientific Research and Research and Development and adoption of required acts, coordination between the federal and cantonal governments, establishment of the Federal Scientific Centre, harmonization of scientific and research titles, harmonization of titles of students who have graduated, participation of researches at international conferences, support in development of master and doctoral dissertations, establishment of the edu.ba domain, capacity rising investments, and scientific research and research and development projects.

Simultaneously, Republic of Srpska government adopted a similar document - Strategy for the Scientific and Technological Development of the Republic of Srpska (2012-2016) with action plan. The strategy was announced in the Law on Scientific Research Activity adopted in 2011, including priorities research areas for the period and is fairly similar in terms of issues covered as FBiH strategy (notably, even though the challenges address are somewhat different, funding, sustainability of research activity and its role in overall country development remain core shared concerns).

4. Policy & governance

Higher education in Bosnia and Herzegovina is regulated by the Framework Law on Higher Education in Bosnia and Herzegovina, adopted in 2007. In addition to this law, the Republic of Srpska, 10 cantons of FBiH and the Brčko District have their own laws which, in principle, have to be harmonised with the Framework Law. In practice, this is not always the case and there is significant effort put by the Ministry of Civil Affairs of BiH to secure this harmonisation, while additional pressure is exerted by the EU (Progress Report 2012).

In a similar manner as in the case of HE policy, BiH is strongly committed to the European area of research as well. However, its success rate on the Seventh EU research Framework Programme (FP7) remains low, even though a slight increase in the submission rate is noted (Progress Report 2012). The EU, at the same time, is rather critical of BiH's research and innovation capacity building efforts (ibid.).

The Ministry of Civil Affairs of Bosnia and Herzegovina is responsible for the coordination and development of HE, promoting the integration of teaching and research and the research itself, promoting mobility of students and staff and regional and international cooperation in general, promoting equality of opportunity, lifelong learning, as well as encouraging cooperation between HE and economy. This Ministry is also responsible for the co-ordination and development of higher education within the country, in consultation with other ministries.

In FBiH, the Federal Ministry of Education and Science coordinates activities among the ten cantonal ministries of education, while in Republic of Srpska, the Ministry of Education and Culture is sole responsible for developing policy in HE in the entity (unlike the Federal ministry which does not have the authority to develop and implement policies in the FBiH entity). It is important to note here that in the case of FBiH, not all the cantons have HEIs on their territory and nine out of the ten cantons have adopted legislation on higher education (Progress Report 2012).

Alongside the Ministry of Civil Affairs, the existence of the following country-level bodies is stipulated by the law:

- Agency for the Development of Higher Education and Quality Assurance (Agencija za razvoj visokog obrazovanja i osiguranje kvaliteta) – run by a Governing Board, appointed by the Parliament, comprising 10 members (three representatives from each constituent people⁴³ and one representative of national minorities)
- Centre for Information and Recognition of Documents (CIP) (Centar za informiranje i priznavanje dokumenata) – Director appointed by the Governing Board, which is in turn appointed by the

⁴³ The term “constituent” refers to the three ethnic groups that are explicitly mentioned in the constitution - Bosniaks, Serbs and Croats, and that none of them can be considered a minority or immigrant.

Council of Ministers⁴⁴, following a public competition procedure and consisting of seven members (two representatives from each constituent people and one representative of national minorities);

- Rectors' Conference – composed of all rectors of licensed universities in BiH
- Science Council of BiH (Established by the Framework Law on Research)

The task of the Agency is to set standards and criteria for accreditation of HEIs, determine criteria for selection of local and international experts involved in quality assessment, give recommendations on criteria and standards to the Ministry of Republika Srpska, cantonal ministries and the Brčko District for their HE development policy and establishment or termination of HEIs, and for restructuring of programmes of study, give recommendations for licensing and student fees, as well as propose general guidelines and criteria for the allocation of funds from BiH budget for scientific research.

Centre for Information and Recognition of Documents is also an independent structure, responsible for information and activities of recognition in the area of HE. Rectors' Conference determines and represents common interests of universities in Bosnia and encourages their mutual cooperation.

The Science Council of BiH is established for the purpose of monitoring and enhancement of the situation in the field of science and technology in BiH and it operates as an advisory and expert body of the Ministry of Civil Affairs. It has twelve members - prominent scientists, appointed by the Council of Ministers, upon the proposal of the Ministry of Civil Affairs and are nominated by authorities of both entities, cantons in FBiH and Brčko District. Its role is mostly to provide guidelines, opinion, recommendations and be involved in all policy related matter in the area of science at the country level.

In sum, the buffer bodies are certainly novelty in the system, especially those in the area of quality and other areas which have gained prominence in the context of Bologna reforms. Their role is, however, more administrative in nature. However, in practice, they are an active player in steering of the BiH system(s), in particular the higher education one (buffer bodies in science are arguably less prominent in this sense). For instance, HEA, being a central authority at the state level, is engaged in numerous projects financed by the European Union and other international stakeholders and is recognised by international institutions as one of the key institutions in HE in BiH. Its role becomes particularly prominent compared to the Ministry of Civil Affairs whose competences in HE are limited, to say the least.

According to this law, a university may have faculties, academies, colleges, or scientific institutes as its organisational units without the status of independent legal person. However, the implementation of this provision is not consistent throughout the country. Namely, in the Republic of Srpska entity, the

⁴⁴ The Council of Ministers of Bosnia and Herzegovina is the executive branch of the government of Bosnia and Herzegovina. Its Chair is nominated by the Presidency of Bosnia and Herzegovina and confirmed by the National House of Representatives (Article V, Section 4 of the Constitution). As head of the government, Chairman of the Council of Ministers appoints ministers in the government.

2008 law envisaged the legal person status only for university, thus putting an end to the decades long practice of having faculties with the status of legal entity as well, with a considerably higher level of autonomy than it is the case under this law. On the other hand, in the Federation of BiH entity, not all cantons have managed to secure a similar legal provision⁴⁵, in line with the Framework Law. Some universities, such as University of Sarajevo (the oldest and the largest in the country) and University of Mostar, have not been integrated and its faculties still enjoy a high level of institutional autonomy. On the other hand, University of Tuzla, University Džamal Bijedić in Mostar and University of Bihać have managed to integrate since 2007.

According to the Sarajevo Canton law on HE, “a HEI can be established as a university or as a college” (Art. 17), while the HEI which had already been established when the law entered into force could keep their faculties and academies as separate legal entities, in line with their statutes, with the idea to have them integrated at some point (Art. 158). However, if the provisions set forth in the new proposal of the university statute⁴⁶ are adopted, this university is expected to integrate in the coming period.

With respect to institutional governance, the arrangement is very typical and also similar to other countries of the Western Balkans region. The Framework Law on HE in BiH envisages the Governing Board, the Senate and the Rector. The Senate is the professional body and it decides on issues related to teaching, scientific, artistic and professional activities, but it also adopts statutes, elects rector, etc. Governing Board, on the other hand, is in charge of the employment policy and procedures, decides on the internal organisation and job systematisation, adopts financing and development plans upon the proposal from the Senate, decides on the utilisation of exceeding resources, adopts decisions on the establishment of other legal persons and reports to the founder. Rector and Director are institutional leaders of a university and a college, respectively. They propose work and development plans for the HEI and report on their financial work to the Senate.

The basic act of any higher education institution in BiH is the statute, which is adopted by the senate of the HEI, having previously obtained the opinion of the HEI governing board. The statute has to be harmonised with the Framework Law on Higher Education in Bosnia and Herzegovina.

With respect to policy development in the last 10-15 years, most reforms in higher education have been initiated in the framework of Bologna process, yet in recent years an increasing focus on country specific concerns, such as professional relevance of studies, links between higher education and economy, social dimension, could be noted. Similarly, in area of science, the EU policy is a dominating reference framework for policy makers at both country and entity levels and, as it can be seen from the strategies entities recently adopted, with a focus on the role of research and development activity in overall economic and social development. Notably, international institutions have played a crucial role in

⁴⁵ Interestingly, the Law on HE of Sarajevo Canton stipulates that

⁴⁶ Statute of the University of Sarajevo (proposal)

[www.ssvoonkbihkoks.com.ba/index.php?option=com_filecabinet&task=download&cid\[0\]=60&Itemid=18](http://www.ssvoonkbihkoks.com.ba/index.php?option=com_filecabinet&task=download&cid[0]=60&Itemid=18), last retrieved on 19 April 2013

developing policy frameworks in BiH in virtually all areas, including HE and research. Hence, the ownership local institutions have towards policies and rules installed is sometimes rather low, which jeopardizes implementation process.

The legal documents adopted or amended⁴⁷ in the past several years in the area of higher education have been mostly inspired by the general wave of reforms in Europe in the past decade, directly or indirectly inspired by the Bologna process and they have been embraced by both entities to more or less the same extent. On the other hand, when it comes to science, it appears that the Federation of BiH is lagging behind the other entity in terms of the legislation passed, structures in place, but also the information available on its research system. Thus, we could conclude that the administrative and complexity of BiH has posed more severe challenges to the country as a whole in the area of science than in higher education. Still, many challenges lie ahead, as it was many a time suggested in the strategies and other documents produced by local authorities and referenced in this report.

Finally, due to the level of fragmentation of the country and the fact that one cannot speak of BiH as one single HE system (but rather a dozen), determining the dominant governance model is not an easy task. Nevertheless, elements of more than one, if not all, models can by all means be spotted in this analysis. Perhaps the situation is less ambiguous in the area of research where the governance can be classified as dominantly a sovereign rational-bounded model, as the perceived role of science and HEIs' research activity in country's development is undisputed and quite explicit in both entity strategies for research (Gornitzka and Maassen, 2000). On the other hand, in the area of research, as well as in higher education, the norms of non-interference of state in academic matters are broadly shared and the idea of institutional autonomy is embraced as one of the guiding principles of the organisation of academic work vis-à-vis the role of the state. Hence, the institutional steering model can also be identified. The elements of the supermarket model can be found in both sectors and perhaps more in practice, than in the official documents, and notably through the privatisation of both research activity and educational provision.

⁴⁷ The list is available on the following link: <http://www.herdata.org/documents/bosnia-and-herzegovina/37>

References

Bibliography

Bologna Process Stocktaking Report 2012. Report from a working group appointed by the Bologna Follow-up Group to the Ministerial Conference in Bucharest, May 2012

Branković, N. (2012). *Upisna politika i financiranje visokog obrazovanja u Bosni i Hercegovini*. GEA

Commission Staff Working Document (2012), Bosnia and Herzegovina 2012 Progress Report, http://ec.europa.eu/enlargement/pdf/key_documents/2012/package/ba_rapport_2012_en.pdf. Last retrieved on 28.2.2013.

Council of Europe, European Commission (2007) *Standards and Guidelines for Quality Assurance in Higher Education in Bosnia and Herzegovina*. http://www.coe.ba/pdf/QA%20SG%202007_06_05_eng_final.pdf Last retrieved on 28.2.2013.

EACEA (2012). Overview of the Higher Education Systems in the Tempus Partner Countries – Western Balkans. *Tempus Study, Issue No. 13*.

ENQA (2005): Standards and Guidelines for Quality Assurance in the European Higher Education Area, <http://www.engq.eu/files/BergenReport210205.pdf> Last retrieved on 28.2.2013.

ETF (2009). *Bosnia and Herzegovina Country Analysis 2009*. European Training Foundation

Gornitzka, Å. & P. Maassen (2000). *Hybrid steering approaches with respect to European higher education*. In *Higher Education Policy*, 13, pp. 267-285.

Jongbloed, B. & J. Koelman (2000). *Vouchers for higher education? A survey of the literature*. Study commissioned by the Hong Kong University Grants Committee. Enschede: CHEPS.

Kyvik, S. (2004). Structural changes in higher education systems in Western Europe. In *Higher Education in Europe*, 29(3), pp. 393-409.

Mihić, J. (2009). *Analiza – Razlozi niske stope upisnosti studenata na bh. fakultete i načini dostizanja evropskog standarda upisnosti studenta na visokoškolske institucije od 34%*. CCI.

Ministry of Civil Affairs (2012). Osnovne informacije o obrazovanju u BiH [Basic Information about Education in BiH]. <http://bit.ly/Z7Zlcm> Last retrieved on 28.2.2013.

National Report regarding the Bologna Process implementation 2009-2012 - Bosnia and Herzegovina
<http://www.ehea.info/Uploads/National%20reports/Bosnia%20and%20Herzegovina.pdf> Last
retrieved on 28.2.2013.

Olsen, J. P. (2005). *The institutional dynamics of the (European) University*, Arena Working Paper, No. 15

Olsen, J. P. (2007). The institutional dynamics of the European University. In P. Maassen & J. P. Olsen
(eds.), *University Dynamics and European Integration*, Ch. 2, 25–54. Dordrecht: Springer.

Open Society Foundation (2010). *Public funds for public schools*. Open Society Foundation

Program mjera za prevenciju korupcije u Federaciji Bosne i Hercegovine Transparentnost, zakonitost i
poštivanje procedura za bolje visoko obrazovanje, Federal Ministry of Education and Science -
FMON (2012). Last retrieved from <http://unsa.ba/s/images/stories/AMOB/FMON.pdf> on
26.2.2013

Legal documents⁴⁸

Country level

(2008) [Strategic Directions for the Development of the Education in Bosnia and Herzegovina, with
Implementation Plan.](#)

(2007) [Framework Law on Higher Education in Bosnia and Herzegovina.](#)

(2009) [Law on Amendment to the Framework Law on Higher Education.](#)

(2009) [Framework Law on the Foundation of Scientific-Research Activity and Coordination and
International Cooperation in Scientific Research of Bosnia and Herzegovina.](#)

Federation of Bosnia and Herzegovina

(2012) [Strategy for the Scientific Development of the Federation of Bosnia and Herzegovina 2012-2022.](#)

(2012) [Strategy for the Scientific Development of the Federation of Bosnia and Herzegovina 2012-2022 -
ADDENDUM.](#)

(2008) [Decisions on standards and norms for the HE in BiH.](#)

(2010) [Law on Higher Education of the Canton Sarajevo \(with amendments\).](#)

⁴⁸ All documents in this section were last retrieved on 28.2.2013

(2008) [Law on Higher Education of the Canton Sarajevo](#)

Republic of Srpska

(2009) [Strategy for the Development of Education in Republic of Srpska 2010-2014.](#)

(2012) [Strategy for the Scientific and Technological Development of the Republic of Srpska 2012-2016.](#)

(2010) [Law on Higher Education.](#)

(2011) [Law on Amendment to the Law on Higher Education.](#)

(2011) [Law on Scientific Research Activity.](#)

(2008) [Rulebook on the Quality Control and Efficiency of Scientific Institutes](#)

(2008) [Rulebook on Criteria for the Implementation of Research Programmes](#)

Internet data sources

(excluding HEIs websites which are provided in footnotes)

UNESCO Institute for Statistics (UIS). <http://www.uis.unesco.org/> > Data Centre > Custom tables. Last visited on 28.2.2013.

Statistics Agency of Bosnia and Herzegovina. <http://www.bhas.ba/> > Statistička područja > Demografija i socijalne statistike > Obrazovanje. Last visited on 28.2.2013.

Institute of Statistics of the Republic of Srpska. <http://www.rzs.rs.ba/> > Publikacije > Godišnjak. Last visited on 28.2.2013

Federal Office of Statistics (Federation of Bosnia and Herzegovina). <http://www.fzs.ba> > Podaci za FBiH Statistički godišnjaci/Ljetopisi. Last visited on 28.2.2013.

Agency for Development of Higher Education and Quality Assurance of Bosnia and Herzegovina (HEA). <http://www.heg.gov.ba>. Last visited on 28.2.2013.

Higher Education Agency of Republika Srpska. <http://hears.com/en/abouten.html>. Last visited on 28.2.2013

Interviews

Interview “UBL-1-JB” - Interview with International Relations Officer at the University Banja Luka, Ms. Jelena Rožić, by Jelena Branković, January 2013.