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Study on the organisation of doctoral programmes in EU neighbouring countries

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1. Doctoral programmes data

Bosnia and Herzegovina is a politically decentralised country with two governing entities (the Federation of Bosnia and Herzegovina (FBiH) and the Republika Srpska (RS)) and the district of Brcko. Universities¹ and colleges² are the only HEIs. In 2008-2009, there were 33 HEIs, among them **eight public universities³, which are the main doctoral programmes providers.**

- Population: 3.7m
 - GDP per capita: €3,355
 - % of GDP spent on education: n/a
 - % of GDP spent on research: 0.03% (2007)
 - Doctoral candidates enrolled: 282

Figure 1 List of main HEIs providing doctoral programmes

HEI Name	Entity	Foundation	Number of students	Status
University of Sarajevo	FBiH	1949	54,000 (2006-2007)	Public institution
University of Banja Luka	RS	1975	16,396 first cycle students, and 360 second cycle students in new master programmes (2009/2010)	Public institution
University of "Dzemail Bijedic" Mostar	FBiH	1977	11,483 (2005-2006)	Public institution
University of Mostar	FBiH	1977	No data available	Public institution
University of East Sarajevo	RS	1993		Public institution
University of Bihać	FBiH	1997	3,400 (2005-2006)	Public institution
University of Zenica	FBiH	2000	3,200 (2004-2005)	Public institution
University of Tuzla	FBiH	1976	No data available	Public institution

2008 UNESCO IUS data

Sources: TEMPUS Internet web site, World higher education database

All universities offer some type of doctoral programme. However, only some faculties at the University of Sarajevo and the University of Mostar have new doctoral programmes, which started last year. One new doctoral programme, in cooperation with Paderborn University, started in 2009/2010 at the University of Banja Luka (Faculty of Electrical Engineering). It will serve as a basis for the adoption of new programmes within the university.

¹ Universities offer academic degrees in all three cycles and cover at least five different subject groups of studies and three scientific areas.

² Colleges offer diplomas and degrees of the first cycle in at least one subject group in one scientific area.

³ Agency for statistics of BiH, educational statistics, First release, No. 1, July 20, 2009, in: TEMPUS, Higher education in Bosnia and Herzegovina

Figure 2 List of doctoral programmes in each state university

HEI	Type of doctoral programme	Number of doctoral candidates	Disciplines	Gender balance
University of Sarajevo⁴	Old/new	About 100 (Economy: 22) new programmes	Economy, architecture (new structured programmes) old programmes in all others disciplines	School of Economics and Business: 50% women
University of Banja Luka	Old/one new on a cooperative basis	7 candidates enrolled in 2009/2010 (new programme) 36 candidates have completed their PhD in 2008/2009 (old studies)	New doctoral programme: “PhD in Information and Communication Technology” Old programmes in all others disciplines	About 50% women
University of “Dzemail Bijedic” Mostar	Old	25 candidates enrolled in 2009/2010 (17 candidates have completed their PhD in 2008/2009)	Social science, natural science, technical science	<i>No data available</i>
University of Mostar	Old/new	<i>No data available</i>	<i>No data available</i>	<i>No data available</i>
University of East Sarajevo	Old	70 in 2009/2010	All disciplines covered at the university	About 50% women
University of Bihac	Old	10 in 2009/2010	Law, economy, technical sciences, biotechnological sciences	About 30% women
University of Zenica	Old	20 theses defended up to September 2009	<i>No data available</i>	<i>No data available</i>
University of Tuzla	Old	About 70 old, (about 35 candidates obtain a PhD diploma each year)	All disciplines covered at the university	About 50% women

Source: Technopolis (data collection in Universities)

In addition to the eight state universities, there are **13 private universities** and some of them offer doctoral programmes. The **Pan European University “Apeiron” in Banja Luka** offers old doctoral programmes. The **Open University Apeiron in Travnik** provides new and old doctoral programmes. The **Sarajevo School of Science and Technology (SSST)** opened in 2004, and also offers new doctoral programmes in cooperation with the University of Buckingham (UK) in the following fields:

- Computer Science,
- Information Systems,
- Engineering Science,
- Economics,
- Political Science/International Relations.

⁴ The three 2008/2009 new doctoral programmes are described in the case study, as far as the University of Sarajevo is concerned.

2. Doctoral programmes

2.1 The overall organisation of doctoral programmes

Higher education responsibilities are divided between the three levels of government in the Bosnian political structure (state, two entities and one district, ten cantons) with 12 ministries of education having full control over higher education and the accreditation of study programmes, and two ministries in charge of coordination. A Conference of Education Ministers of Bosnia and Herzegovina was established in March 2008 with the 14 ministers as in the table below (Figure 3).

Figure 3 List of public bodies responsible for higher education and doctoral programmes

Level		Public body	Role
State		Ministry of Civil Affairs, Sector of Education	Coordinating role between the two entities, 10 cantons, Brcko district and other relevant ministries International cooperation
Entity	FBiH	Ministry of Education and Science, Sector of Higher Education	Coordinating role between the ten cantons (no constitutional authority to create and implement higher education policies)
Entity	RS	Ministry of Education and Culture	Full authority on education matters
Entity	Brcko district	Education Department within the Government of the district	Full authority on education matters
Cantons	FBiH	10 cantonal ministries of education	Full authority on education matters (five cantons host public universities: Sarajevo, Tuzla, Bihac, Zenica and Mostar)

Source: Technopolis

Higher education is governed under laws adopted by the cantons, the Republika Srpska (RS) and the Brcko district. As a result, the situation regarding doctoral programmes varies from one governing entity to another and from one university to another. Following the passing of laws on higher education, some cantons (Tuzla since 2000, Zenica since 2006 and recently Bihac) have strengthened their universities to create fully integrated universities. Two public universities in RS have been integrated since 2008. Others use the same structure and management as in the Former Yugoslavia, namely associations of independent and autonomous faculties with financial and academic autonomy. All universities provide an academic curriculum and there are no vocational HEIs in BiH.

In 2007, after almost four years of political discussion, the **Framework Law on Higher Education was adopted at national level**. It established the organisational principles of higher education in Bosnia and Herzegovina and the responsibilities of competent authorities in this area. It also set down the methods of quality assurance in higher education and created two new agencies: the Agency for the Development of Higher Education and Quality Assurance, to regulate part of the accreditation process; and the Centre for Information and Recognition of Documents in the Area of Higher Education. The harmonisation of RS's and FBiH cantons' laws and the transition to the new accreditation process have been slower than expected, however, and have not yet been completed.⁵ Early in June 2008 the Council of Ministers also adopted the Strategic Document for Educational Development and an Implementation Plan for the period 2008-2015.

⁵ Petar Maric, Zenan Sabanac, February 2009, National Bologna process report

In Bosnia and Herzegovina, **the Statute of Higher Education Institutions regulates the award of degrees and diplomas**. Higher education institutions have full authority to organise their curricula, as well as related assessment and examination schemes. The senates of HEIs decide on important academic issues, including doctoral programmes.⁶ Universities thus have the freedom to create, design and award doctoral degrees. It is also possible to establish joint doctoral programmes involving two or several institutions. Autonomous faculties with a lot of financial and juridical autonomy organise their own doctoral programmes by developing their own rulebooks on the organisation of doctoral programmes in line with the statute of the university they are affiliated to. It is worth noting that guidelines providing some basic principles for the development of the Code of Rules for Doctoral programmes have been adopted in Republika Srpska.⁷

Research institutes both within the university and outside the university are involved in doctoral programmes since they take part in the teaching process and make research equipment available for the use of doctoral candidates.

Doctoral programmes are considered as a priority at both entities and universities level, since the country is involved in the Bologna process and is currently engaged in the reform of its doctoral programmes involving the design of new doctoral programmes including a training component in all the various universities.

2.2 Doctoral programmes structure

2.2.1 Definition of doctoral programmes

Traditionally, doctoral programmes entail the **pursuit of independent research for the purpose of doctoral thesis**. Under the 2007 national Framework Law, the titles awarded to successful doctoral candidates are stipulated as either **Doctor of Science** or **Doctor of Arts**. However this change has not yet been implemented, and many of the titles awarded to doctoral candidates at present are, as before, Doctor of Sciences in a specific field (Doctor of Medical Sciences, Doctor of Social Sciences in Economics, Doctor of Technical Sciences in Electrical Engineering...).

Research work is carried out either within the universities (or university-based research institutes...) or outside academia. When carried out outside, the doctoral work is done in (external) research institutes or another scientific institution or in the private sector, depending on the subject of the doctorate.

Traditionally, doctoral programmes have not been organised into doctoral programmes. Doctoral candidates are considered to have acquired adequate experience during the preparation of their master's thesis (a compulsory prerequisite for starting work on a doctoral thesis) and are expected to make an individual contribution to knowledge in a given area through independent research. Under the old doctoral programmes contracts, doctoral candidates employed by an HEI did not have any time allocated to doctoral research. Doctoral candidates had to teach and they were paid for teaching, not for researching.

New doctoral programmes organised as structured programmes including a training component have been implemented as yet only in some faculties in the Universities of Sarajevo, Banja Luka and Mostar. These programmes are still few in

⁶ National Tempus Office, 2010, Higher education in Bosnia and Herzegovina (draft)

⁷ Petar Maric, Zenan Sabanac, February 2009, National Bologna process report

number (up to 10) and how they are implemented differs from one university to another. Under the Framework Law on Higher Education (August 2007) these structured doctoral programmes should have started up after one year (2008) but it has not been implemented as anticipated. Some cantonal laws stipulated that old doctoral programmes could continue until 2015 (Tuzla, Sarajevo). As a result, structured doctoral programmes have not yet been introduced on a large scale.

For instance, the School of Economics and Business at the University of Sarajevo⁸ has two types:

- PhD - Doctor of Philosophy Programme in the field of Economics and Management/Business: an **academic, research-oriented, full-time programme** lasting three years with 180 ECTS credits.
- DBA – Doctor in Business Administration: a **professional, practice-oriented, part-time doctorate**. It covers applied business/business administration and lasts three years with 180 ECTS credits.

In parallel, all universities are currently developing new rulebooks for the organisation of new doctoral programmes; the University of Tuzla, regulated by the Tuzla canton Law, for example, is in the process of developing a rulebook in accordance with the new University Statute. This document reflect that i) the organisation of doctoral programmes may vary from one university and one faculty to the next; ii) the reform process is still underway, and various matters have not yet been defined.

2.2.2 Duration

There was no predetermined duration for old programmes. Doctoral candidates employed by an HEI were, however, obliged to obtain their doctoral degree within five years, or they risked being dismissed. The Prototype Statute for Integrated Universities in BiH⁹, finalised by the BiH Universities' Drafting Committee in June 2005, stipulated that “*A candidate shall complete the third (doctoral) cycle upon successful completion of the period of study and research equivalent to a period of 3-4 years following successful completion of the second cycle (...) A dissertation may be submitted for examination no later than the expiry of a period twice as long as the period the candidate originally applied for.*”

As a consequence, not only does the **legal duration** of doctoral programmes differ from one university and one faculty to another, but it also differs between old and new doctoral programmes. Indeed, in all new programmes the “Time-To-Degree” (TTD) has to be stipulated. In the University of East Sarajevo, the legal duration of old doctoral programmes is five years and for new doctoral programmes three years, one additional year being possible. In the University of Bihac the legal duration is three years and the total duration should not exceed six years. Doctoral students attending old doctoral programmes in Tuzla had to complete the programme within five years; however the new Statute of the University fixes a three-year period for new doctoral programmes. No legal duration is fixed in the University of “Dzemal Bijedic” Mostar, although some faculties can decide upon a specific duration. As reported during the interviews, the **standard duration of doctoral programmes in the country varies between three and four years.**

⁸ Website of the Faculty of economy and Business:

http://www.efsa.unsa.ba/ef/index.php?option=com_content&task=view&id=2196&Itemid=486

⁹ Result of a joint project between the European Commission and the Council of Europe aiming at applying Bologna principles in the Bosnian higher education system.

The new Statute of the University of Tuzla regulates a yearly **registration** for doctoral candidates. With regard to duration, the conditions of registration should be incorporated into the new rulebooks on doctoral programmes. In the new doctoral programmes of the School of Economics and Business at the University of Sarajevo 20 ECTS credits for obligatory courses of study are a condition for continuing with the doctoral programme and enrolling for the second year. By way of contrast, doctoral candidates register only once for their entire third cycle at the University of “Dzermal Bijedic” Mostar.

2.2.3 Funding

No data are available on the proportion of doctoral programmes with public as opposed to private funding. However it is worth noting that 80% of Bosnian R&D (research and development) is publicly funded, according to the latest TEMPUS report.¹⁰

As far as old doctoral programmes are concerned, tuition fees cover the costs of the evaluation of the application, supervision work by a professor and the evaluation of the doctoral thesis. They do not cover any research activity. Candidates who are employees of the university can use its research resources (laboratories, software, etc.) even though these are often not enough to complete their research. Doctoral candidates can therefore approach industry or apply for research scholarships to go to some other university or institute abroad. The organisation of doctoral programmes and the costs of research are not part of the responsibilities of the universities, but have to be covered by the candidate. Very often the candidate's supervisor can help through connections with industry and with other universities, but it is worth noting that the university is not obliged to provide research facilities for doctoral candidates. **As far as the new structured doctoral programmes are concerned**, a scholarship covers the teaching process, the supervision of the research and also the evaluation of the thesis. A candidate has to provide funds for research.

The various ministries in charge of higher education and research do not cover any expenses linked to the organisation of doctoral programmes. Fees finance the organisation and administration of doctoral programmes. However, ministries issue public calls for research and provide grants for most of the candidates, but these are very modest (the average is €500 annually). The grants are therefore not enough to cover scholarship and research (they cover only about 20% of all costs).

The **low level of coordination** between the different layers of authorities varies from one canton to the next and impact differently higher education. The Ministry of Civil Affairs, the Federal Ministry of Education and Science and the Ministry of Science and Technology all offer grants, as do most cantonal ministries, which have responsibility for the universities. As a consequence, there are no rules, and candidates have to look out for any grants that become available as public calls are announced.

Some **companies** will pay part of their staffs' PhD fees, and they can even participate in the design and organisation of doctoral programmes; four companies, for example, are involved in the new ICT (Information and Communication Technology) programme in the Faculty of Electrical Engineering at the University of Banja Luka, in cooperation with the University of Paderborn (Germany).

Tuition fees vary from university to university and faculty to faculty:

- In the University of “Dzermal Bijedic” Mostar they range from €3,000 to €10,200 and faculties can install a pay regime.

¹⁰ National TEMPUS Office, 2010, Higher education in Bosnia and Herzegovina (draft)

- In the School of Economics and Business at the University of Sarajevo, they are €10,500.
- The price at the University of Tuzla is **€6,000 for all programmes** offered.
- The Faculty of Electrical Engineering at the University of Banja Luka charges €5,000 a year.
- The Pan European University “Apeiron” in Banja Luka (private HEI) charges about €10,000, and fees in the Sarajevo School of Science and Technology (private HEI) are about €5,000 a year, to be paid by projects in which the candidate participates, or from other sources provided by the candidate.

If employed by their home institution, **doctoral candidates** receive a regular salary. Candidates who are not employed must come up their own living allowance arrangements. However, doctoral candidates can start on their doctorate without having secured funding.

2.2.4 Doctoral candidate status

Doctoral candidates are considered to be both **employees and students** depending on their affiliated university. The Prototype Statute for Integrated Universities in BiH finalised in June 2005¹¹ stated that “*a third cycle candidate shall be considered a student (of doctoral programmes) but also a researcher at the initial level*”.

Either they are **employed by their home HEI** as a teaching assistant to contribute to the teaching process (as in most cases) or **they come from industry** and have a regular job alongside their PhD studies. Therefore, the status of the doctoral candidate is mainly determined by whether or not they are employed by the HEI as a teaching assistant.

2.2.5 Doctoral candidates' rights

Employed doctoral candidates benefit from the rights attached to their status as employees (social security coverage, pension rights, maternity leave, pregnancy leave, family friendly conditions...).

In the University of Bihac, however, where doctoral candidates are considered as students, they do not benefit from any of the previously mentioned rights. They can take part in the senate either as student representatives or as employees. As employees, they also take part in steering boards at faculty level, university councils and teaching boards at university and faculty levels.

2.2.6 Organisation of doctoral programmes

Old doctoral programmes are organised within an individual mentoring system without taught courses. To take an example, in the University of Tuzla, where doctoral programmes are regulated by the Tuzla canton Law, the doctoral candidate makes a direct application to do a doctoral thesis. Once the thesis has been approved, a mentor is appointed and the candidate proceeds to work on research and the dissertation in a one-to-one relationship with the mentor.

Reforms underway aim at implementing new doctoral structured programmes that include training and exams which was not the case for traditional doctoral programme based on a one-to-one relationship with a mentor (Cf. 2.2.1).

¹¹ Result of a joint project between the European Commission and the Council of Europe aiming at applying Bologna principles in the Bosnian higher education system.

In the new doctoral programmes, the guidelines for the development of the Code of Rules for Doctoral programmes in Republika Srpska give the following basic principles for the organisation of studies: up to 45 ECTS should be for taught courses and at least 135 ECTS for independent and original scientific research. The time dedicated to research work is, however, defined at the level of each university, faculty and for each study programme.

In the two new doctoral programmes in the School of Economics and Business at the University of Sarajevo, the **doctoral dissertation** can take the form of either:

- A collection of published articles and material, and articles accepted for publication, to which an introduction and conclusion are provided;
- A monograph outlining a broad, comprehensive, and in-depth treatment of particular issues in the field.

The modalities of this structuring have yet to be defined and is little consistency across the country.

Although companies do take part in some of the new joint doctoral programmes (for example in the Faculty of Electrical Engineering at the University of Banja Luka in cooperation with the University of Paderborn, Germany) and also sometimes host doctoral candidates, **only a few such connections exist between doctoral programmes and the private sector.**

2.3 Doctoral programmes content

The content and quality of doctoral programmes in Bosnia and Herzegovina has suffered from the general weakening of research as a result of the war. In the past, research had strong industrial links, but national industrial capacity was damaged during the war. One of the main challenges regarding the content of doctoral programmes is the need for a **general improvement of research activities in the country.**

2.3.1 Research

The **thesis subject** is defined by the candidate and the mentor within a mutual process. The university or faculty council has to approve it and the university's senate or the faculty has the final decision over the subject. In the University of Sarajevo's new doctoral programmes, the thesis committee responsible for the appointment of the candidate's supervisor (named "advisor") also appoints two members of the committee to evaluate the dissertation proposal. The advisor guides the student in selecting organised forms of study and in drafting the dissertation proposal in the first two semesters. The student then submits the draft proposal to the proposal evaluation committee at the end of the third semester and publicly presents it in an academic seminar. Doctoral candidates carry out their **research work** in the university, research institutes or even in industry, if suitable and they get approval from their mentor.

2.3.2 Training within doctoral programmes (alongside research)

There were no compulsory courses in the old doctoral programmes. The **key changes introduced by new doctoral programmes are therefore the obligatory taught courses** that students must attend. For instance, the new rulebook for the organisation of doctoral programmes in the University of Banja Luka (not yet issued) states that the first year of study is dedicated to taught courses, the second year to research and preparation of thesis work and the third year to the doctoral thesis and defence. In the new doctoral programme in ICT in the Faculty of Electrical Engineering at the University of Banja Luka in cooperation with the University of

Paderborn (Germany) the first two semesters are taken up with courses, and the next four semesters with research, thesis proposal and thesis completion.

In the two new doctoral programmes in the School of Economics and Business at the University of Sarajevo, courses have to be completed in a maximum of two years. Work on the doctoral dissertation represents 90 ECTS (with an additional 5 ECTS for the defence) while seminars and courses account for 85 ECTS. The types of courses delivered are, as follows:

- **Research methodology and techniques:** Quantitative and qualitative research methods
- **Seminars**
- **Area obligatory courses** linked to the field of research (economy and business)
- **Elective courses** linked to the field of research (economy and business)

The courses are evaluated through class participation, written exams and/or requested individual and group assignments.

In the new doctoral programmes provided by the private Open University Apeiron in Travnik (private HEI): the first year is dedicated to common taught courses such as “quantitative and qualitative research methods”; the second year consists of chosen courses; and in the third year of study the doctoral candidate writes the thesis. The Sarajevo School of Science and Technology (private HEI) organises a structured doctoral programme in cooperation with the University of Buckingham (United Kingdom) where courses are delivered in English and the doctoral dissertation also has to be written in the English language.

2.3.3 Teaching within doctoral programmes (alongside research)

Teaching activities are mandatory for doctoral candidates employed by an HEI.

In old doctoral programmes, doctoral candidates have to teach 15 hours per week for 30 weeks per year and they are actually paid for teaching, not for researching. They are senior assistant teachers on subject/s related to their doctoral dissertation/thesis.

In new doctoral programmes, the time dedicated to teaching has to be defined in each university’s rulebook. For instance, at the University of Sarajevo, the time dedicated to teaching activities varies from one faculty to another, but the usual norm is four hours per week.

2.4 Doctoral programmes process: admission, supervision, monitoring and assessment

2.4.1 Admission/recruitment

Criteria for selection as a doctoral candidate are stipulated by the laws of the different entities and in the rulebooks of the universities and faculties. Generally speaking, eligible students to doctoral programmes have at least 300 ECTS (that is to say a bachelor degree and a master degree - 60 to 120 ECTS). Bridges between disciplines are possible in a few universities, among them the Universities of Bihac and East Sarajevo.

As far as old doctoral programmes are concerned, students with a Master of Science who have published at least three scientific papers can apply. There is a twofold application procedure:

- Overview of candidate's previous scientific work;

- Proposal of doctoral research.

A Commission of three professors evaluates the candidates. Once the Faculty Council and Senate adopt the Report of the Commission, a candidate can start on the research, which has to be finished within five years of the Commission's decision.

As far as new doctoral programmes are concerned, candidates apply in response to a public call and the best candidates are selected. In the School of Economics and Business at the University of Sarajevo, the **entrance examination** consists of an oral examination (70%) and a review of the candidate's past record of achievement (30%). It is organised by the end of June. The requirements are: a minimum of a Grade Point Average (GPA) of 8 (C) or equivalent; proof of proficiency in English; and two reference letters. In the new doctoral programmes in the Sarajevo School of Science and Technology (private HEI) the conditions for enrolling are: completed studies towards a master's degree, a high average grade from the candidate's undergraduate and master studies and a good faculty/university rating of the candidate's previous degrees. The candidate's work experience is also taken into account. After application and selection, the candidate **proposes the subject**, which is approved or rejected by a dedicated committee, and a mentor is appointed. Appeal procedures are organised in cases of disagreement. Available positions are not publicly advertised, but this will be regulated in the new rulebooks on the organisation of doctoral programmes. Gender balance is not seen as a particular issue. The same procedures apply for students coming from other national or foreign universities. The diplomas of foreign candidates are however recognised. In the new doctoral programmes in the University of Sarajevo, candidates who do not hold a master's degree from the School of Economics and Business have to take certain courses as **prerequisite courses**.

2.4.2 Supervision system

In old as well as in new doctoral programmes, each doctoral candidate receives individual guidance from a mentor.

Once enrolled in a doctoral programme, the **doctoral programmes committee appoints the candidate's mentor**. In the two new doctoral programmes in the School of Economics and Business at the University of Sarajevo, the head of the doctoral programme proposes the choice of mentor and the doctoral thesis committee takes the student's wishes into account as much as possible. Doctoral candidates are required to fully inform orally and in writing the other two members of the committee at least twice during the second and third years of their research work. The other two members of the committee are expected to provide a critical assessment of the doctoral candidate's work.

The mentor must hold a **doctoral degree and be a regular or associated professor** at any university in the respective field of science. No specific training is required, but the mentor must have experience and an established reputation, including academic publications.

The mentor is in charge of **guiding, monitoring and supporting** the candidate's work throughout the whole PhD period. A maximum number of doctoral candidates for one mentor is set in some universities (at the University of East Sarajevo, for example, with two doctoral candidates for one mentor) but not in others. New procedures are under development following the design of new doctoral programmes. Universities interviewed implement¹² charters defining the duties and rights of doctoral candidates and the mentor. Procedures can be put into place in case of disagreement or conflict between the doctoral candidates and mentor.

¹² See List of interviewees.

2.4.3 Doctoral thesis and defence

The **jury for the thesis defence is usually composed of three (exceptionally five) members**, with the majority from the field of science concerned. Members must be professors and must have a doctoral degree. The mentor is automatically a member of the jury. Each member is entitled to vote. After adoption of the report of commission by the senate, candidates can defend the thesis publicly before the jury.

In the new doctoral programmes in the School of Economics and Business at the University of Sarajevo, after the candidate's enrolment in the third year of the doctoral programme, the members of the Dissertation Proposal Evaluation Committee are appointed as members of the Dissertation Evaluation Committee, including the advisor. At least one member of the Dissertation Evaluation Committee must not be employed at the University of Sarajevo and preferably should come from the academic institutions network.

The jury is **open to foreigners** (in the University of "Dzemal Bijedic" Mostar, Banja Luka and East Sarajevo). Professors working in the private sector can also attend the jury in the University of Bihac. The **evaluation** is based only on the doctoral thesis in the Universities of Bihac and "Dzemal Bijedic" Mostar. In the University of East Sarajevo, the number of publications also forms one of the conditions for applying for the evaluation of the doctoral thesis.

2.4.4 Quality assurance mechanisms

Under the 2007 Framework Law, the **Agency for the Development of Higher Education and Quality Assurance** was established and became partially operational in 2008. The agency is responsible, among other things, for defining criteria for the accreditation of higher education institutions, setting norms for minimum standards in the field of higher education and restructuring study programmes.¹³ Under the previous system, the accreditation process was under the jurisdiction of cantonal ministries of education in FBiH and the entity Ministry of Education and Culture in RS. The agency is in the final phase of preparation for making recommendations to the competent educational authorities for the accreditation of HEIs, while programme accreditation (including PhD programmes) will start by the end of 2011. It seems likely that only new programmes will receive accreditation.

HEIs also undertake internal quality assurance activities as part of their own responsibilities. Both the University of Bihac and the University of "Dzemal Bijedic" Mostar have developed formal mechanisms for the approval, periodic review and monitoring of doctoral programmes and awards. Information systems to monitor and manage doctoral programmes are not always developed, however, and few HEIs communicate up-to-date information on doctoral programmes and degrees on their web sites.

2.5 After graduation

In the Federation of Bosnia and Herzegovina a Register of Holders of Doctoral Degrees was established in 2006, while in the Republika Srpska a similar register is in the process of development.¹⁴ Such tracking systems are also implemented at the HEI level. It seems that no particular job seeking support is organised within doctorate studies.

¹³ National Tempus Office, 2010, Higher education in Bosnia and Herzegovina (draft)

¹⁴ Petar Maric, Zenan Sabanac, February 2009, National Bologna process report

Many PhD holders find positions in the academic sector (all university professors have to hold a PhD under the 2007 Framework Law) with fewer in the private sector and in the public service sector. Teaching in the HEI awarding the doctoral degree is a usual “next step” for many PhD holders. After graduation post-doc positions are available in some universities, among them the University of “Dzermal Bijedic” Mostar and the University of East Sarajevo.

It is however worth noting that the two newly implemented doctoral programmes in the School of Economics and Business at the University of Sarajevo should lead to **opportunities as senior managers in the business sector and in public bodies.**

3. International collaboration, mobility and joint doctoral degrees

3.1 International cooperation data

Broadly speaking, the interviews highlighted that **there is not enough international cooperation to be able to establish joint programmes with foreign universities.** However, international collaboration and participation in international projects (such as TEMPUS since 1996) have helped to implement new structured doctoral programmes.

With regard to TEMPUS projects, one doctoral programme was established through the Joint European Programme (JEP 41024-2006) at the School of Business and Economics at the University of Sarajevo, the “Third Cycle Doctoral Programme in Economics and Business”. For this TEMPUS Joint European Project, a Consortium including three partners was formed:

- The University of Ljubljana (Slovenia) Faculty of Economics, as grant holder;
- The University of Vienna (Austria) the Faculty of Business, Economics and Statistics;
- The University of Sarajevo, School of Economics and Business, as beneficiary.

Another TEMPUS project led to the implementation of the Joint Doctoral Programme in ICT in the Faculty of Electrical Engineering at the University of Banja Luka, in cooperation with the International Graduate School of Dynamic Intelligent Systems of the University of Paderborn (Germany) as a twinning institution. The project was co-funded by the Degree Development Structure (DDS) World University Service Austria, Austrian Development Cooperation and ERP-Funds. The programme had seven doctoral candidates enrolled for its launch in September 2009, 17 candidates having applied. This programme contributes to the internationalisation of doctoral programmes and opens up the possibility of exchange courses with foreign institutions.

Furthermore, seven doctoral students took part in the Erasmus Mundus External Cooperation Window programme in 2007/2008.¹⁵

Bosnia and Herzegovina has also been a member of the **Central European Exchange Programme for University Studies (CEEPUS)** since 2007. The main activity of CEEPUS is the creation of university networks operating joint programmes ideally leading to joint degrees. It covers mobility grants for students and teachers in this framework, the development of academic cooperation in and with Central and

¹⁵ National Tempus Office, 2010, Higher education in Bosnia and Herzegovina (draft)

Eastern Europe and South Eastern Europe and the use of regional academic mobility as a strategic tool in implementing Bologna objectives.¹⁶

In addition to this, Bosnia and Herzegovina was one of founders and is a full member of the **MERIC (Mediterranean Recognition Information Centres) network**. MERIC aims at promoting information exchange in the Mediterranean Region and with the ENIC/NARIC networks.¹⁷

HEIs in Bosnia and Herzegovina have also signed **bilateral cooperation agreements** with HEIs in Austria, England, Belgium, Spain, France, Netherlands, Turkey, Serbia and Montenegro and cooperate with HEIs from all around the world (e.g. USA, Canada, Japan, Arab states).

3.2 Foreigners as doctoral candidates

The **requirements are the same for foreign doctoral candidates as for domestic candidates**, since foreign diplomas have to go through a nostrification process without passing any exam. The Diploma Supplement is recognised but many institutions still ask for the official translation of documents issued in foreign languages.¹⁸

In the University of Bihac and in the University of “Dzemal Bijedic” Mostar, **fees** for foreign candidates are comparable with fees for national candidates, although some HEIs sometimes have specific rules on this. In these two universities, foreign candidates benefit from the same rights, salary and contracts as national candidates if they are employed by the HEI. By contrast, foreign doctoral candidates do not have the same rights and funding options in the University of East Sarajevo.

It is worth noting that no foreigners were enrolled in the School of Economics and Business at the University of Sarajevo in the first year of their PhD programme. However, foreign students are already showing an interest and some applications have been received for next year.

Foreign doctoral degrees are recognised in the Bosnian job market through a nostrification process. The employment conditions are the same as for a national PhD, other than for civil servant positions.

The National Action Plan for the Recognition of Qualifications in Bosnia and Herzegovina was adopted by the Council of Ministers of Bosnia and Herzegovina in December 2007. It recommended that the Ministry of Civil Affairs should coordinate activities with the objective of reviewing existing legislation and its compliance with the provisions of the Lisbon Recognition Convention. No legislation at the state level regulates this issue, which is governed by cantonal laws.¹⁹

3.3 National doctoral candidates going abroad

HEIs encourage candidates to participate in exchange programmes and the portability of national grants is ensured abroad. Information on exchange programmes is posted on universities' and ministries' web sites. Financial support is also available for mobile candidates. National doctoral degrees have to go through a diploma validation if no bilateral agreement has been signed on recognition.

¹⁶ National Tempus Office, 2010, Higher education in Bosnia and Herzegovina (draft)

¹⁷ Petar Maric, Zenan Sabanac, February 2009, National Bologna process report

¹⁸ Petar Maric, Zenan Sabanac, February 2009, National Bologna process report

¹⁹ Petar Maric, Zenan Sabanac, February 2009, National Bologna process report

Moreover, some **joint degrees** have been set up with foreign universities. Examples are as follows:

- The two doctoral programmes offered at the School of Economics and Business at the University of Sarajevo in cooperation with the University of Ljubljana (Slovenia) and the University of Vienna (Austria);
- The doctoral programmes provided in the Sarajevo School of Science and Technology (private HEI) in various fields in cooperation with the University of Buckingham (UK);
- The joint programme offered by the University of Banja Luka in cooperation with the University of Paderborn (Germany) with a possible exchange of students.

As of 1 January 2008 Visa Facilitation and Readmission Agreements between the European Union and Bosnia and Herzegovina came into force, with the exception of Denmark, Ireland and the United Kingdom. Agreement on the facilitation of the issuance of visas, among other categories, mentions citizens participating in scientific activities including those in universities.²⁰

4. Challenges and possible future policy actions

4.1 Country challenges

When it comes to “upstream” challenges linked to the political organisation of the country, the main barrier hindering the development of doctoral programmes is **very limited coordination in the governance of higher education at any level between the entities or among cantons**, and it contributes negatively to the initiation of reforms in doctoral programmes since no general principles of coordination are agreed between the different levels. Twelve different higher education systems (10 cantons, one district and one republic) co-exist, with some degree of cooperation, but not enough to implement a homogeneous national reform of the organisation of doctoral programmes.

Regarding “upstream” barriers linked directly to higher education and research, some of the difficulties are as follows:

- The first difficulty is **the limited level of research in the country** that has a direct impact on the content and on the quality of doctoral research. Before the war, research was strongly linked to important industrial capacities, which were damaged during the war.
- The second difficulty relates to a **governance issue caused by the institutional autonomy of universities and faculties**. Many universities are made up of an association of strongly independent faculties, which manage their own finances. This prevents university-based planning and management, weakens the capacity for reform and inhibits the external relations of HEIs.
- Finally, the **lack of internationalisation and international cooperation in universities** is also a problem. Insufficient knowledge of foreign languages contributes to a failure to move things forward.

The country has a limited participation to FP7. Improvements in research through participation in international research projects could be one of the main challenges to improve the situation.

²⁰ Petar Maric, Zenan Sabanac, February 2009, National Bologna process report

At doctoral level, barriers are as follows:

- The **lack of specific funding** for doctoral programmes and doctoral students. These funding problems apply to the R&D sector and to the higher education system in general. The 2009 TEMPUS report underlines that only 0.1% of Bosnian GDP is committed to research and development.
- Secondly, a **shortage of appropriate and up-to-date equipment** in certain fields.
- Thirdly, Bosnia and Herzegovina also suffers from a **shortage of suitable academic staff** for doctoral programmes.

In addition, an important challenge is therefore the need for **interdisciplinarity** in the organisation of doctoral programmes, as well as the **development of interuniversity cooperation**, since small universities (setting apart the University of Sarajevo) do not have the capacity to organise comprehensive and internationally-recognised doctoral programmes of their own. Attention has to be brought to the need for the involvement of industry in research and doctoral programmes as an important feature in the modernisation of doctoral programmes. Indeed, however, as things stand, there are not yet enough strong industries or enterprises in a position to provide either grants for doctoral research projects or research projects with connections to doctoral study programmes.

When it comes to “downstream” barriers, we cannot help but note that, to a large extent, the **academic teachers of the future** are the products of the present system of doctoral programmes in Bosnia and Herzegovina. Few find positions in the private sector. The two new doctoral programmes launched in the academic year 2008/2009 are good examples of reforms underway aimed at overcrossing such problems and creating synergies between industrial needs and what doctoral programmes offer.

As a result, major drivers for change regarding the above mentioned barriers and related challenges are the joining of the **Bologna process** and participation in international projects (such as TEMPUS projects). These have established the pace for the ongoing reforms for the new structured doctoral programmes and related rulebooks in the universities. The implementation of the 2007 Framework Law and the creation of the Agency for the Development of Higher Education and Quality Assurance are important attempts at **structuring the higher education system at national level**, even though both reforms are incomplete. While new doctoral programmes are in this structuring process, action should now be focused on **strengthening research capacities in Bosnia and Herzegovina**. Improvements are to be sought in the higher education system as a whole, and also in both public and private research capacity and quality if high-quality doctoral programmes are to be delivered.

4.2 European Union (EU) response

As previously stated, **TEMPUS projects have enabled the design, testing and adjusting of new doctoral programmes**, sometimes through cooperative initiatives. One example is the doctoral programme in the School of Economics and Business at the University of Sarajevo, which was established through the JEP launched in 2006. The new curricula represent a major change in the educational experience, and in implementing doctoral programmes with taught courses. This course is used as an example of how change can happen when developing rulebooks for the third cycle.

Participants in such programmes face many of the barriers listed above, however. Most important is the **weakness of public and private research** in Bosnia and Herzegovina.

As a result, EU support has been very effective in providing the pace for higher education system reform and implementing new doctoral programmes but **future actions should also be focused on research capacities and funding for research** (through more involvement in Framework Programme projects, for example). Doctoral programmes require suitable research projects, equipment and funding in order to foster the quality of the research conducted.

Appendix A - List of interviewees

The present country template was completed thanks to phone interviews, as well as the fulfilling of written questionnaires by competent persons in the eight universities, since the organisation of doctoral programmes strongly differs from one University to the other. All in all, nine persons or institutions have contributed to the study. The Office for International Relations of the five following universities (out of eight) have kindly fulfilled the questionnaire and sent it by mail (without phone discussion), thanks to the intervention of Mr. Suad Muhibic (National Tempus Office director):

- The University of Sarajevo, School of Economics and Business (contact person: Prof. Besim Culahovic)
- The University of East Sarajevo (contact person: Ms. Katarina Bosnjakovic)
- The University of “Dzemal Bijedic” Mostar (contact person: Ms. Mirsada Behram)
- The University of Bihac (contact person: Ms. Alma Bosnic)
- The University of Tuzla (contact person: Ms. Jasna Hivziefendic)

Four additional persons have contributed through phone interviews.

Figure 4 List of interviewees

Name	Position	Organisation	Contact details
Suad Muhibic	Director	National Tempus Office	suad.muhibic@tempusbih.com 00 387-33-570
Hazim Basic	Vice Rector for scientific research	University of Sarajevo	00 387-33- 656 562 Ext. 207
Petar Maric	Dean, Member of the Bologna Follow-up Group BiH	University of Banja Luka	pmaric@etfbl.net 00 387 51 221 824 00 387 51 221 821

Name	Position	Organisation	Contact details
Boris Curkovic²¹ (mail interactions and phone call based on the draft country template)	Deputy Director	Agency for Development of Higher Education and Quality Assurance	boris.curkovic@hea.gov.ba 00387 51 462 300

²¹ Mr. Curkovic was interviewed for his experience of the higher education sector and doctoral programmes system. It is worth noticing that the Agency for Development of Higher Education and Quality Assurance is not directly involved in the organisation of doctoral programmes.

Appendix B - Bibliography

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- World Higher education database (online)
- Website of the University of Sarajevo: <http://www.efsa.unsa.ba/en/>
- Website of the University of Tuzla: http://www.untz.ba/index_en.htm
- Website of the University of Banja Luka: <http://www.unibl.rs.sr/index.php>
- Website of the private Sarajevo school of science and Technology: <http://ssst.edu.ba>

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