

**Under the Patronage of the Minister of Education and Higher Education
His Excellency Professor Hassan Diab**

Within the framework of the **European Union Tempus programme**

**A thematic seminar for
Higher Education Reform Experts**

Organization and Profile of Doctoral Studies

organized by

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Quality Doctoral Studies in the Knowledge Era

Introduction

Doctoral studies are the ending of a learning pathway, and a cornerstone of the development and progress of knowledge; offering PhD holders the opportunity to take up positions at Universities, Research Institutions and Research Laboratories in the most advanced industries. This places doctoral studies at the nucleus of academic life, not only for its role in developing and disseminating knowledge but also for providing the whole education system with highly qualified human resources. As for many aspects of higher education, doctoral studies are being constantly challenged in the new era of knowledge and globalisation. Some of these major challenges are as follows:

- **Rapid development of science and technology:** Since the beginning of university studies the academic world is undertaking the challenge of understanding what specific knowledge, skills and personal competences are needed for students in the present technological climate, and how to distribute them on the different levels of studies. Growth in technology makes this exercise a regular effort where the distribution has to be constantly revisited, compressing some elements of knowledge and 'know-how', modifying existing elements and introducing new elements. After the Masters level, knowledge, skills and personal competences are considered to be open ended in doctoral studies. The rapid growth of science and technology makes this exercise even more difficult and introduces challenges to doctoral studies, not least the continuous need to increase the part of this cycle allocated to reaching excellence in a specific domain – which can be far from what is provided at the Masters level. Therefore, a definition of new courses at the postgraduate level, within the PhD preparation, is necessary.
- **Knowledge based economy:** The growth theory related to the economical (and even the social) development of innovation and knowledge has placed higher education at the center of economical development. This is certainly true for doctoral studies, where knowledge progresses and innovation are most expected. This puts pressure on doctoral studies programmes, striving for short-term gains and lowering the attention to long-term objectives. Theoretical research becomes much less interesting for societies than applied research. This will certainly have an impact on the whole of higher education, as well as education in a broader sense. In addition, this central role emboldens doctoral studies programmes to broaden the areas included in PhD preparation. It also encourages an increase in the number of PhD holders. This creates an unbalanced offer-demand equilibrium for the PhD holders' labour market. The doctoral studies should be organised to also face this challenge.

- **Globalisation:** Globalisation means more visibility at all levels, including doctoral studies. Preparing a PhD is no longer at the cutting edge of a domain at a national level, but rather now at international level. Conferences, workshops and journals are organised with a regional or international scope. Competition is no longer national but rather international. This complicates the task for PhD candidates who have to showcase the innovative part of their work, not only by comparing it to similar work at a national level, but also by comparing it worldwide. Thus, globalisation also makes recognition more challenging as both the students and the senior researchers have to be dynamic and get involved in a worldwide dynamic of research.

One has to add to the previous common challenges, those related to the local context, including knowledge and skills levels, socioeconomic levels, and resources allocated to research.

The set of previous challenges makes the organisation of doctoral studies a very serious matter. The PhD preparation should have a substantial part dedicated to reaching the highest level of development, should lead to innovative solutions to existing problems in a competitive global environment, and should prepare the candidate for a demanding labour market by providing its holder with the necessary competences. PhD subjects should also respond to short-term demands, without completely neglecting long-term research which is necessary for opening future domains. The present Tempus thematic seminar will be a forum for discussion and exchange of best practices; trying to reach a common understanding of the mission of doctoral studies and ways in which a postgraduate school should be organised to respond to the different challenges, developing quality doctoral studies and preparing young researchers and PhD holders for both academic and non-academic responsibilities.

Five themes will form the main topics covered in the seminar. These themes are:

- Research, Doctoral Schools, Society and Development
- Structure of a Doctoral School
- PhD Candidate Profile
- Doctoral School and Evaluation
- Cooperation and Internationalisation

Due to the breadth and scope of these themes, details of what will be covered under each theme are provided hereafter.

I. Research, Postgraduate Schools, Society and Development

Analysing the rationale for doctoral studies would set the foundation for optimal and efficient organisation of those studies. Doctoral studies have always been necessary to assure qualified human resources for Academic and Research institutions. Some countries have, totally or partially, relied on students preparing their PhDs in international institutions. However, with the worldwide increase in volume in higher education, this solution might not be available in the coming years or decades and, consequently, quality doctoral studies need to be organised locally. However, with the fast development of science and technology, it might not be easy to cover all the possible domains locally. Planning is therefore necessary and strategies must be drawn up. The organisation of doctoral studies needs also to take into account the financial resources available. The involvement of the private sector might be a solution in this. All these issues will be discussed, focusing on the following points:

- Doctoral studies and socioeconomic development context: research needs, development, and innovation.
- Planning and setting the priorities for the doctoral studies: identification of needs, and national strategies.
- Economic and financial model for doctoral studies: public funds and private enterprises.
- PhD Charter.

II. Structure of a Postgraduate School

The challenges discussed above show the need for a well-structured postgraduate school to organise doctoral studies. The ten principles of Salzburg can provide an answer to the concerns noted in the previous section and, therefore, define an excellent framework that helps explain the structure of postgraduate schools and the organisation of doctoral studies. However, the organisational aspects are specific to each context, depending on available resources and on the structure of the existing higher education. Exchange of expertise in this direction would be beneficial. The following topics can structure the discussion in this session:

- The Salzburg Principles
- Mission
- Possible academic and administrative structures: thematic postgraduate schools, network of excellence, and role of national authorities.
- Financial and human resources: grants and critical masses.

III. PhD Candidate Profile

The identification of the profile of a PhD candidate as well as of a PhD holder would help to better organise doctoral studies. This would assist in setting the admission criteria and defining the learning process, in order to develop specific competences of future PhD holders. Distinction at PhD level may be evaluated differently. Typically, specific competences are necessary for young researchers seeking an academic career than for those seeking non-academic careers. The pathway of PhD preparation and the duration of this preparation must be clearly set. All these aspects might be included in a PhD charter. The following points are suggested as directions for discussions under this title:

- Admission criteria: selection mode, standards, motivation, and professional projects.
- Competences to develop: research, identification of other competences needed, notification of competences required for an academic career and for a non-academic career.
- PhD charter - duration and pathway throughout the PhD preparation.

IV. Postgraduate School and Evaluation

Quality assurance has become a significant element in modern higher education systems. The role of quality assurance is even more crucial for doctoral studies and especially for newly established postgraduate schools. PhD holders form the major source of human resources for the higher education system. Therefore, assuring quality at this level is essential for the whole system. This section will discuss the objects of the quality assurance system, possible criteria and the role of a national agency or an external quality assurance system. Issues related to accreditation and recognition will also be covered.

- Quality Assurance and Evaluation: objects of evaluation (procedures and processes, research themes, governance, supervision, knowledge and know-how transfer), criteria, evaluation procedures, and the role of the quality assurance agency.
- Quality assurance and accreditation.
- Recognition: national and international, cooperation, and the role of local authorities.



V. Cooperation and Internationalisation

Cooperation and internationalisation are major vectors in higher education within globalisation. Cooperation has always existed at the doctoral level, offering several advantages - not the least of them being trust building and mutual understanding. It also allows the dissemination of knowledge and 'know-how'. Precise organisation of cooperation and internationalisation would make it even more beneficial. A review of the existing models of cooperation and the advantages and drawbacks of each model will be made in this section; dealing mainly with the following points:

- Types of cooperation: institutional cooperation, postgraduate schools cooperation, research structures, joint degrees, and co-tutoring.
- Advantages and drawbacks: maintaining a high standard.
- Mobility: types, duration, researchers, professors, and students.

VI. Background Documents and References

Salzburg Principles:

"Doctoral Programmes for the European Knowledge Society" February 2005

http://www.eua.be/eua/jsp/en/upload/Salzburg_Report_final.1129817011146.pdf

Quality Assurance in Postgraduate Education

<http://www.enqa.eu/files/ENQA%20workshop%20report%202012.pdf>

Erasmus Mundus Joint Doctorate Programmes

http://eacea.ec.europa.eu/erasmus_mundus/results_compendia/selected_projects_action_1_joint_doctorates_en.php

"Doctoral Programmes for the European Knowledge Society, 2004 - 2005." EUA Doctoral Programmes Project

http://www.eua.be/eua/jsp/en/upload/Doctoral_Programmes_Project_report.1129278878120.pdf

"Doctoral Studies in Europe: Excellence in Researcher Training" League of European Research Universities, May 2007

http://ec.europa.eu/education/higher-education/doc/business/lerudoc_en.pdf

The European Council of Doctoral Candidates and Junior Researchers

Annual Conferences:

"Eurodoc Statement of standards in the assessment, expectations and outcomes of doctoral programmes in Europe" July 2006

http://www.eurodoc.net/wp-content/uploads/2012/10/0706_ed_descriptor.pdf

"European Career Framework" September 2010

http://www.eurodoc.net/wp-content/uploads/2012/10/2010_Eurodoc-Career-Framework_Recommendations.pdf

"Communication on EU Research and Innovation Funding Framework for a New Generation of Researchers" March 2011

http://www.eurodoc.net/wp-content/uploads/2012/10/2011_Eurodoc_Communication_FP8.pdf

Doc-Careers Projects (EUA)

Doc-Careers I: "Collaborative Doctoral Education: University-Industry Partnerships for Enhancing Knowledge Exchange"

<http://www.eua.be/eua-work-and-policy-area/research-and-innovation/doctoral-education/doc-careers/>

Doc-Careers II: "Promoting collaborative doctoral education for enhanced career opportunities"

<http://www.eua.be/eua-work-and-policy-area/research-and-innovation/doctoral-education/doc-careers-ii.aspx>

http://www.eua.be/events/past/2012/Doc_Careers_II_Final_Conference/Home.aspx

Annex

Doctoral Studies in Practice

In the following, brief descriptions of doctoral studies in the different Tempus countries participating in the thematic seminar, are given.

1. Doctoral Studies in Albania

In Albania, with the application of the Bologna System, the entire Higher Education System was reformed and doctoral studies are now considered as the Third Cycle Study Programmes of the Higher education.

These programmes aim to form and enable students to:

- Acquire research skills and apply research/investigation methodologies;
- Use information resources and apply laboratory techniques;
- Acquire advanced methods for collecting, analyzing, processing and interpreting of data;
- Introduce the use of modern technologies to serve the country's economic development;
- Work independently and creatively to generate new knowledge, etc.

Doctoral studies are offered by the four main Public Universities in Tirana and five private Universities and are integrated in their research and development activities. Doctoral study programs generally are organized on a faculty base, and the selection of research fields, and the organization and the monitoring of doctoral studies are assured by the Council of Professors of the Faculty.

The Doctoral studies are designed as structured programmes, and are formally approved by the Council of the Faculty and the Senate of the University. They include two phases: a taught phase and a research phase.

The taught phase is the first year of regular studies, consisting of mandatory courses or modules, evaluated as 60 ECTS.

The research phase follows the taught one and consists normally in 2 or 3 years of research work, which is overviewed by a supervisor. During this phase, doctoral students are allowed to teach undergraduate students, under the direction of their supervisor.

International involvement is strongly recommended and doctoral students are obliged to present their work at international events, as well as to have a number of publications in renowned international scientific journals.

The defence of the doctoral thesis is public and the defence committee is composed of internal and foreign professors, including two reviewers, who are experts in the field.

The degree of doctor is awarded after a successful defence, and the thesis is published electronically in the website of the institution.

In 2012, the Public Accreditation Agency for Higher Education drafted the State Quality Standards for Accreditation of the Third Cycle Study Programmes (Doctorate), which have to be met by all the Albanian Universities offering such programs.

2. Doctoral Studies in Kazakhstan

During the last two decades, Kazakhstan has made significant progress in reforming its higher education system. To achieve this aim the government has fully renewed the legislative base of education development, adopting a number of new legislative texts based on the priorities of the Strategic Development Plan of Kazakhstan by 2010 and on the State Programme of Education Development for 2005 - 2010. The Programme aimed towards a gradual transition from the old system of professional training to the new three-cycle degree structure of higher education.

The present state policy in the field of higher education as formulated in the State Programme of Education Development in the Republic of Kazakhstan for 2011 - 2020¹ is aims to strengthen the competitiveness of education, developing human capital through providing access to quality education.

Currently, the system of higher education of Kazakhstan is formed of 146 higher education institutions, including 9 HEIs with a special status of national universities, and the International (Nazarbayev University), of which 53 of these institutions are public and 93 private.

In March 2010, Kazakhstan signed the Bologna Declaration and joined the European Higher Education Area. The two main challenges associated with the implementation of the Bologna requirements were the organizing of studies and programmes into three levels with easily identifiable learning outcomes leading to degrees appropriate for the labour market and determining the duration of each level necessary to acquire these skills and competencies. The new State Programme of RK Education Development for 2011- 2020 stipulates that the full introduction of a three-cycle degree structure will result in enhancing quality of higher education that meets the needs of the labour market.

The three-cycle system of higher and post-higher education ("Bachelor's-Master's-PhD") and a credit accumulation system have been in place since 2005. Doctoral studies replaced the traditionally existing system of Doctor of Science and at present comprise of preparing Doctors of Philosophy (PhD) and Doctors in selected profiles (Doctorantura) upon completion of a Master's programme. The duration of study is a minimum of 3 years. Post-higher medical and pharmaceutical education includes resident, Master and doctoral studies. Resident programmes include in-depth training in clinical specialties which takes 2 to 4 years of study depending on the specialization. The credit-based system enables students to accumulate credits for learning, facilitates recognition of study periods, and contributes to enhancing the transparency of learning outcomes and learning processes.

Doctoral Studies are managed on national and institutional levels.

On the national level the process is regulated through:

- Classificators of undergraduate and postgraduate specialties.
- State compulsory standards of postgraduate education based on the "On Education" law and approved by the Decision of RK Government with certain requirements to the content of doctoral programs.
- Standard curricula approved by the Ministry Order.
- Regulations to awarding academic degrees, standard rules for admission to educational institutions offering Doctoral Studies.
- Setting up dissertation councils.



On the institutional level the universities:

- Develop outcome based educational programmes in accordance with the National Qualification Framework, occupational standards, Dublin descriptors and European Qualification Framework.
- Create an academic calendar.
- Design and implement individual curriculum and work plan for PhD students.

The duration of Doctoral Studies is a minimum of three years. Upon completion, Doctoral Studies students are awarded the degree of Doctor of Philosophy (PhD) or Professional Doctoral Degree. The educational programme for PhD students contains three components – educational, scientific, and pedagogical. The program considers fundamental methodological and in-depth study of selected disciplines. Specialized Professional Doctoral degree study, along with a strong fundamental basis, should also involve in-depth study of disciplines in relevant areas of science for the sectors of the national economy and social sphere: education, medicine, law, the art and humanities, services and business.

Doctoral Studies in Kazakhstan are only for full-time students; the number of grants for PhD students depends on the state order. Education is financed from the state budget; PhD students are provided with a monthly stipend of 59 635 tenge (about 400 USD).

As of 2010, 18 universities can enrol PhD students, and 300 PhD students have completed their studies; the number of grants annually allocated for PhD students has been increased to 200. The university that offers Doctoral Studies should have an agreement on cooperation in the field of education and science with foreign universities and research centers, implementing accredited doctoral educational programs (except for universities that train specialists in "Military and Security"). Scientific advisors and theme of doctoral study is approved by the decision of Academic Council and endorsed by order of rectors. Scientific supervision is carried out by two people with relevant profile and scientific titles, one of whom should be a researcher from a foreign country (except for "Military and Security specialists"). The co-advisors should be actively involved in research activities in the relevant field of study and have experience of scientific advising.

Due to aging population of university teachers, Doctoral Studies are in demand in Kazakhstan. Young PhD holders have good career prospects in terms of being invited to work at universities, and they have some privileges and benefits in terms of competitive salaries, housing facilities, research activities, grants for academic mobility and similar.

However, being 'young' is still a phenomenon within Doctoral Studies and can be a cause of disputes and debates. More time is needed to develop it into a fully efficient system.

3. Doctoral Studies in Lebanon

The Lebanese Higher Education System, one of the oldest in the Middle East region, is a deep rooted and well-developed system. The two oldest universities are the American University of Beirut and Saint Joseph University, and both are private. The system today is formed of one public university, the Lebanese University, in which around 38% of Lebanese students are enrolled, and more than 40 private higher education institutions. Historically, no PhD programmes were developed within the Lebanese universities and most of the Lebanese PhDs were obtained from abroad. Few exceptions exist for some fields like law, history, Arabic literature, theology and Islamic studies. Under pressure of an increased demand for PhD programmes and the need for more PhD holders, several doctoral studies have been launched with joint supervision (a "co-tutoring"-like model); one local and one external supervisor, with a degree delivered either jointly or by a foreign school. This also responds to a need in terms of research activities, which is quasi-limited to universities because of the economic landscape of Lebanon which limits the interest of small businesses in research activities. More recently, several doctoral schools have been developed. Three doctoral schools were formed in 2007 at the Lebanese University (Two of them with support from the Tempus Programme): Doctoral School for Science and Technology, Doctoral School of Law and Political Sciences and, Doctoral School for Human and Social Sciences. In addition, other doctoral schools have been founded in the American University of Beirut and Saint Joseph University, for example. In parallel to these developments and new trends, a decree is currently being considered at the Ministry of Education and Higher Education, to organize doctoral programmes and studies in Lebanon. This decree aims at setting the minimal criteria necessary to start a PhD programme.

4. Doctoral Studies in Montenegro

The Ministry of Education is responsible for the overall educational policy in Montenegro. Education process is regulated by the Law on Higher Education (2003) i.e. the new amended and changed Law adopted in July 2010.

In accordance with the Law, HEIs are autonomous and free to create and design the doctoral studies. Doctoral studies are organized in the same manner at both public and private universities, but each HEI has its own rulebook defining the criteria for admission, the organization of exams and research work, procedures for applying and defending the doctoral thesis, procedure for promotion, as well as other issues important for the realization of doctoral studies, in line with the Law on Higher Education. In 2006, the University of Montenegro approved a Rulebook of Doctoral at the University of Montenegro.

Doctoral studies in Montenegro **last for three academic years** as a minimum, i.e. six semesters, but this can be extended up to six years.

There is a possibility of interdisciplinary training through selective courses during the first year of studies.

Doctoral students are formally full time students, even though some of them are engaged as teaching assistants. They enrol students in doctoral studies at different university units. No form of centralized doctoral school within Montenegrin higher education exists. If students of doctoral studies are engaged as teaching assistants, they do not pay tuition fees; they can be engaged in teaching for a period of up to six years.

Concerning the structure of doctoral studies, the students of doctoral studies have four theoretical exams in the first semester. The second semester consists of one subject related to the research topic. The third, fourth and fifth semester are devoted to working on individual research and during the last semester students prepare the defence of doctoral thesis.

Higher education in Montenegro is facing the multiple challenges related to the topic of doctoral studies, and the major challenges are as follows:

- Combining extensive and deep institutional reform with a new approach, assuring the quality of education and research similar to South East Europe on the whole.
- Avoiding overregulation and enable more flexibility in this field.
- Avoiding the "label" of "lecturing" universities and strengthening the research results, taking into account the difficult situation of financial sustainability of doctoral studies.
- Ensuring the quality at the level of university governance, on the issue of institutional participation and responsibility, since the level of implementation of national standards for quality assurance is an important issue.
- Building institutional capacities of some faculties to perform doctoral studies from the standpoint of infrastructure and human resource capacities.
- Ensuring stringent regulation and strict external control by ECTS to the third cycle, yet also knowing that regulation of PhD studies might create some problems concerning mobility as well as its potential compatibility with the other European programs of the same orientation.
- Creating doctoral schools, and managing doctoral studies at the central level, thus securing and meeting necessary criteria and enabling transparency.
- Developing legislation that regulates doctoral studies in line with EU standards.
- Establishing sufficient links between labour market needs and subject of doctoral thesis.

The Montenegrin academic community is making all efforts to contribute to the international recognition of doctoral studies, enabling compatibility and comparability of doctoral studies at international level.

5. Doctoral Studies in Russia

In the Russian Federation, third-level education is organized in accordance with the federal requirements and standards to the structure of professional educational programs.

Entry to post-graduate study is on the basis of the previously acquired education (Master course or an equivalent 5 year higher education course). In addition to the degree, entrance examinations are held in the area of specialization, philosophy and a foreign language.

The course of study at the post-graduate level must be completed within 3 years if taken full-time, and 4 years if part-time. The course includes taking advanced courses in the field of study in the first and second year and taking three comprehensive exams, including the preparation and public defense of a thesis, which summarizes original research on an individual topic. The research at this level is conducted under the supervision of an advisor.

Foreign nationals are admitted to post-graduate programs on the basis of international and inter-governmental agreements.

The main undertaking in a Doctoral degree is writing a thesis or a dissertation and defending it publicly before a committee of distinguished professors in the relevant field. The Russian Federation has arguably the most complex set of regulations concerning the Doctoral thesis and Doctoral degrees are awarded by a governmental body rather than by the institutions. It consists, altogether, of four steps. The first is a preliminary defence of the thesis in the responsible department. The department evaluates and recommends the work for the final defence. The candidate then submits his or her dissertation to the University Dissertation Council. The Dissertation Council again undertakes a preliminary evaluation and assigns a so-called "leading organization", i.e. a second university, to referee the thesis as well as two opponents for the defence. The final defence of the thesis is carried out before a public audience and consists of a debate between the candidate and the members of the Dissertation Council and the opponents. This event is followed by a secret ballot resulting in the success or the failure of the candidate. In case of success, the dissertation and all supporting documents are submitted to the Higher Certification Commission of the Ministry. This Commission will evaluate all documents, and after the final consideration, award the corresponding degree.

Individuals who have completed a course of post-graduate study and successfully defended a thesis can be admitted to a research-based program, which can lead to a post-doctorate degree. The post-doctorate research course can last no longer than 3 years and is concluded with the defence of a post-doctorate thesis.

The following issues can be considered as challenges within the Russian programmes of doctoral studies.

- Insufficient supervision, lack of time on the part of supervisors, no regulations and standards in place for proper supervision.
- Insecure funding of Doctoral students so that they have to engage in outside employment; furthermore, sometimes there is no official part-time status in the institution where the students conduct the research.
- Overburden of teaching or research assisting responsibilities on doctoral students working for universities; the use by universities of Doctoral students as cheap labour force to carry out research unrelated to the student's studies.
- Deficiency of quality and structure of Doctoral programmes at different universities.
- Separation of course work and thesis research, with the latter, being independent and, thus insufficiently structured or supervised.
- Absence of regular follow-up on the progress of Doctoral students¹.

¹ Doctoral Studies and Qualifications in Europe and the United States: Status and Prospects, Jan Sadlak, Bucharest 2004.



6. Doctoral Studies in Serbia

1. How are doctoral studies managed at the national level and the institutional level?

While all types of higher education institutions in Serbia can organize and conduct study programmes and issue first and second cycle diplomas, only universities can implement the third cycle education. Universities and faculties are autonomous in creating their doctoral study programmes, but the programmes have to be accredited by the Commission for Accreditation and Quality Assurance (CAQA). The doctoral studies carry a minimum of 180 ECTS with the prior achievement of at least 300 ECTS credits at the academic bachelor and master studies, or 360 ECTS credits at the integrated studies in medical sciences. The usual duration of PhD programmes is three years but the period can be extended for a further three more years. Students of doctoral studies (PhD candidates), apart from independent research, have to attend prescribed courses, to pass exams and publish scientific articles in international journals.

2. How are doctoral studies financed?

PhD candidates can have the status of self-financed students (paying tuition fees) or state budget financed students. For higher education institutions whose founder is the state, the Government makes the decision on the number of the most successful candidates to be enrolled in the freshman year of a PhD programme, and to be financed from the state budget. Ministry of Education and Science provides 600 tuition fee grants, 1700 salaries and 200 grants for freshman PhD students every year.

3. What is the nature of cooperation between the different stakeholders in doctoral studies?

The organisation of doctoral programme at the national level falls in the hands of several actors. The **Ministry of Education, Science and Technological Development** is, by the Law on HE, in charge of the doctoral programmes. The Ministry finances scholarships and fees for doctoral students as well as research projects in which doctoral candidates can be engaged and therefore funded. **CAQA** is responsible for procedure of the accreditation of HEIs and accreditation of study programs (among them doctoral). The CAQA accredited approximately 200 doctoral programmes since its establishment in 2006. **The private sector** is not involved in the organisation of doctoral programmes. In the past, a small proportion of PhDs use to go to national oil, transport, railways companies. Most of people working in private companies have Master or BA degrees, but rarely PhD degrees. Broadly speaking, there are no strong links between universities and enterprises in terms of cooperation linked to PhD programmes. According to the data from the Ministry of Science and Technology in Serbia, there are **56 scientific institutions**, completely independent from universities that are predominantly engaged in research. Those institutions are not involved in education, even though many of them have scholars with Master degree or PhD. Some research institutes are part of Universities. Doctoral or graduate schools do not exist in Serbia but the Strategy on Education Serbia 2020 foresees that they will be developed.

4. What careers are offered to young PhD holders?

Depending on what kind of funding is provided, candidates have the status of a student, the status of an employee – teaching assistant at a faculty, or an early stage researcher at a research institute. It is not mandatory for doctoral candidates to be teaching assistants.

5. Any other relevant issues?

The funding of doctoral programmes is a serious issue in Serbia. Presently, only 0.3% of the GDP is devoted to science and research and 3.6% goes to education. The Ministry has a target investment of up to 6% in education by 2015. Ministry of Science and Technological Development have allocated funds to the new cycle of research projects (2011 - 2014) that will include 1700 young researchers.

The number of Doctoral students has increased 3-fold in the past five years (more rapidly than the total number of students); the number of PhD graduates has also increased. The total number of students who completed post graduate studies and obtained master diplomas or doctoral has reached the number of 2,000 in the last couple of years. There is a concern that most doctoral candidates are unable to finish their doctoral programmes within the three years. On average, the real duration of doctoral programmes should be 5 to 6 years.

All the rights related to maternity leave, family friendly conditions etc. of PhD candidates, are not ruled at the national level. Usually, doctoral candidates do not have any special benefits other than social security coverage like all other students. A large majority of candidates, specifically in social and human sciences, work besides doing their research, as a teaching assistant or outside academia. It often happens that the tasks of a teaching assistant leave little time to perform research.

There are very few foreigners coming to Serbia for doctoral programmes; probably less than 10% of the total (but statistics are lacking). The requirements to admit foreigners are the same as for nationals. However, foreigners do not benefit from the same rights and funding as the nationals, nor from the same salary and contracts.

Sources:

- National Bologna report for Bucharest ministerial conference (April 2012), Ministry of Education, Science and Technological Development of the Republic of Serbia, report prepared in 2011;
- Study on the organisation of doctoral programmes in EU neighbouring countries Serbia, produced by a team of consultants within Technopolis Group and GHK, June 2010.

7. Doctoral Studies in Syria

The Syrian Higher Education System historically goes back to the early nineteenth century. The oldest Syrian university is Damascus University which was established in 1923 (then named the Syrian University). The current system is composed of public and private higher education institutions. In total 6 public universities, 6 higher education institutes, and more than 15 private universities. While private universities are only authorized to offer undergraduate study programmes, public universities and a few higher education institutes are authorized by the Council of Higher Education to offer all types of degrees including PhD. The Syrian system of Doctoral programmes is very small in comparison with the overall system of higher education. In the academic year 2009 - 2010, there were less than 800 enrolled doctoral candidates. Doctoral Programmes in Syria are organized directly by university faculties under the control of the council of Higher Education regulations and each university's special regulations. All PhD degrees are offered at the national level with a few cases of international joint supervision. The creation of a doctoral programme can take place either through a bottom-up or a top-down approach. Doctoral programmes are funded through two main channels, where universities receive tuition fees from doctoral candidates, which is relatively low, and foreign doctoral candidates who must pay more than ten times than the Syrian national. Both of these sources of funding represent a very low percentage compared to public funding obtained from the government, which is relatively low compared to the overall funds allocated for higher

education in the country. Generally speaking, funding for doctoral programmes is limited in Syria, and there are no clear mechanisms of financial assistance for doctoral candidates. Some supervisors deal with their doctoral candidates in the way they deal with an undergraduate or a master's students. There is a strong lack of formal procedures explicitly defining the nature of the relationship between PhD students and supervisors. There is no standard procedure for the nomination of thesis supervisors and the selection of the thesis subject; however, a supervisor should be at least an associate professor, and work in the same field of the PhD candidate. Doctoral programmes in Syria do not include any compulsory complementary courses for the time being. Admission into doctoral programmes in Syria requires candidates to be in possession of a master degree with good average. Now all PhD candidates are required to pass the TOEFL exam and obtain a minimum passing grade before they can register for their PhDs. Most recently, students who wish to register for PhD are required to have one publication in an international academic journal in the same field and indexed in Scopus or Web of Science, or approved by the Directorate of Scientific Research at a university. Before defending their PhD dissertation, candidates should have published at least four academic papers in journals approved by the university. After graduation, most Syrian PhD holders are appointed as higher education teaching staff either in public universities or private ones. Private universities prefer to enrol academic staff who have obtained their PhDs from Foreign higher education institutions, particularly from the UK. In common, the Syrian system of doctoral programmes currently faces the following main challenges:

- Strong lack of necessary human and financial and other logistical resources in order to ensure minimum quality assurance.
 - The complex and sometimes the unrealistic procedure necessary for admission to PhD.
 - Lack of rigorous research methodologies and international quality work.
 - Lack of international joint supervision which diminishes the quality of PhD thesis.
 - Lack of relevant training courses for PhD candidates and for their supervisors in some cases.
 - Lack of clear criterion that distinguishes Master and PhD degrees.

8. Doctoral Studies in Ukraine

The Ukrainian Higher Education System is a well-developed system. There are 845 universities, academies, institutes and colleges. By 2011, approximately 2 million students were enrolled at HEIs in the Ukraine. Historically, doctorate and post-doctorate programmes have been developed within the higher education institutes (HEI) and research institutions. Now 249 HEI (about 30 thousand doctorate students) and 275 research institutions (about 5 thousand doctorate students) offer doctorate programmes. 168 HEI (about 1300 post-doctorates) and 98 research institutions (about 300 postdoctorates) offer post-doctorate programmes. Three-year doctoral study provides basic courses (Pedagogy and Psychology, Philosophy) and research under one local supervisor.

A doctoral candidate has to defend his/her dissertation publicly and go through the Ministry's official procedure required for obtaining a Candidate of Sciences degree which is the equivalent to PhD degree. Post-doctorate programme includes research and public defence of a dissertation for obtaining a Doctor of Sciences degree. The organization of doctoral and post-doctoral studies in Ukraine is provided within *Aspirantura* and *Doctorantura* respectively.