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Study on the organisation of doctoral programmes in EU neighbouring countries

Moldova

Education and Culture DG

General information on the study

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1. Doctoral studies data

The Moldovan higher education system and HEIs

There are **16 public and 15 private HEIs** in Moldova, amounting to approximately 120,000 students as of 2007[1] (of whom 80% were enrolled in public HEIs)[2]. Both public and private higher institutions function according to the same common framework. Curriculum design, admission, graduation and employment of teaching staff need to comply with the requirements laid down by the Ministry of Education. Table 3 provides the list of public and private HEIs in the country.

The Moldovan higher education is dominated by two universities, the Moldova State University and Moldova Technical University, which attract all together approximately half of the student population[3].

Financing

Whilst the financing of public HEIs is based on State financing and tuition fees, private higher education institutions rely on founders' contributions and tuition fees[4] to finance their activities.

The higher education system in Moldova currently faces several key challenges[5]: 1) insufficient financing from the state budget (see below for more details); 2) lack of coherence between the legal/formal framework and the academic reality and between the qualifications required by the labour market and those provided by HEIs; 3) issues related to quality assurance, such as insufficient teaching staff in some HEIs and the uneven development of the institutional infrastructure; and 4) the brain-drain, affecting mostly young and high skilled qualified individuals.

Doctoral programmes are provided both by HEIs (i.e. universities) and research institutes. Overall, doctoral programmes are provided in **46 institutions** spanning 23 disciplines and 196 specialisations[6]. With regard to HEIs, doctoral programmes are concentrated within public universities, as private universities do not generally have sufficient resources and expertise to set up and run doctoral programmes.

Each institution providing doctoral programmes hosts an average number of 30 doctoral candidates[7]. Considering that doctoral candidates are spread between different disciplines and specialisation areas, it appears that each institution has a relatively small number of doctoral candidates. Consequently, it remains difficult to speak of fully-fledged doctoral schools with structured programmes given the low number of students in each institution.

An important step towards the setting up of high quality doctoral schools would be to reduce the number of institutions providing doctoral programmes by

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[1] It is reported that there were 119. 000 students enrolled in the first and second cycle and below the doctoral level. Source: National Report on the Bologna Process, Moldova, 2007

[2] http://www.ibe.unesco.org/Countries/WDE/2006/index.html

[3] *Brief summary of Tempus impact study in Moldova*, EACEA, http://eacea.ec.europa.eu/tempus/participating_countries/impact/moldova.pdf

[4] National Report on the Bologna Process, Moldova, 2007

[5] *Higher Education in the Republic of Moldova*, January 2005, EACEA, http://eacea.ec.europa.eu/tempus/participating_countries/higher/moldova.pdf

[6] National Council for Accreditation and Attestation, www.cnaa.md

[7] National Council for Accreditation and Attestation, 2010

integrating/merging the latter. In doing so, institutions hosting doctoral programmes could maximise resources and infrastructure with a view to achieving high quality doctoral programmes[8].

Doctoral candidates

Recent data from 2008[9] show that there were 1,664 candidates enrolled in doctoral programmes, of which the overwhelming majority (70% or 1,175 candidates) were enrolled on a part time basis (29%   only were enrolled as full time candidates). Approximately 80% of all doctoral candidates (1,320 candidates) were enrolled in HEIs in 2008, whilst only 20% of doctoral candidates were enrolled in research institutes[10].

Table 1 below provides an overview of the number of doctoral titles awarded in the country since 2001.

Table 1: Number of degrees awarded by the National Council for Accreditation and Attestation, 2001-2009 (as of 1 January 2010)

	2001	2002	2003	2004	2005	2006	2007	2008	2009	2001-2009
Doctor	231	164	208	147	175	201	228	174	246	**1774**
Doctor habilitat	27	25	18	26	23	24	18	23	39	**223**

Source: National Council for Accreditation and Attestation, 2010

It has been emphasised that there exists a discrepancy between the number of candidates enrolled for doctoral programmes and the actual number of those completing their studies. The significant drop out rate accounts for these differences (see below).

The breakdown of doctoral awards shows that doctorates are not evenly distributed by disciplines/areas of specialisation[11]. The number of doctoral awards in the following fields is for instance extremely low[12]: architecture, geography, geology, military science, some areas in biology and in medical sciences (e.g. toxicology, infectious diseases, pulmonology, phthisiology), biotechnology, food technology and astronomy. According to the National Council for Accreditation and Attestation, these low numbers may be problematic in the long run as not enough highly skilled individuals are trained in these areas.

As of 2009, 52.8% of candidates awarded with doctoral degrees were female, which represents a well-balanced distribution between genders[13].

In addition, it has also reported that the average age of doctoral graduates in 2009 was 36 years (for doctor) and 54 years (for doctor habilitat). This poses the question as to whether the average age of doctoral graduates may constitute a barrier on the labour market where competition is fierce and opportunities remain scarce.

Drop out

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[8] National Council for Accreditation and Attestation, 2010

[9] National Report on the Bologna Process, Moldova, 2009

[10] National Report on the Bologna Process, Moldova, 2009

[11] However specific statistics related to the breakdown were not provided.

[12] National Council for Accreditation and Attestation, 2010

[13] National Council for Accreditation and Attestation, 2010

The difference between the total number of candidates enrolled in doctoral programmes and those who are awarded a doctoral degree can be explained by a high drop out rate.

It is reported that in some years up to 30% of doctoral candidates[14] do not complete their doctorate because 1) candidates may give up after the first year 2) they finish their studies without producing scientific results or 3) they do not pass the required exams.

On average, only 5-15% of registered candidates defend their thesis within the normal timeframe (i.e. after 3 years)[15].

This trend is due to several factors which adversely impact on doctoral candidates and their achievements:

- Lack of financial and material support to effectively carry out research and produce relevant scientific results;

- Low level of competencies;

- Insufficient time devoted to research;

- Insufficient monitoring by supervisors and the institution/chair;

- Lack of economic prospects after graduation, which severely impacts on the overall level of motivation amongst candidates.

2. Doctoral programmes

2.1 Doctoral programmes overall organisation

The independence of the Republic of Moldova on 27 august 1991 has signalled the beginning of an intense period of changes in the field of higher education. Over the past 15 years, the country has moved towards modernisation and democratisation, while also experiencing significant barriers.

Main bodies responsible for higher education and doctoral programmes

Doctoral programmes are not part of the higher education system, as they are still considered as post-university studies. Therefore, the Ministry of Education is not responsible for doctoral programmes at national level.

Doctoral programmes are under the responsibility of the **Academy of Sciences of Moldova** (ASM)[16]. According to the current *Code for science and innovation of the Republic of Moldova*, 2004[17], research and innovation policies are developed by ASM. ASM is an autonomous institution however the president is part of the Government and has the status of Minister. ASM currently coordinates approximately 20 research institutes and has also the competency for allocating funding to universities and HEIs. The **Higher Council for Science and Technological Development** within the ASM is responsible for authorising doctoral programmes.

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[14] National Council for Accreditation and Attestation, 2010

[15] Data as of 2010. Source: National Council for Accreditation and Attestation, 2010

[16] http://www.asm.md/

[17] *Codul cu privire la ştiinţă şi inovare al Republicii Moldova*, nr. 259-XV din 15.07.2004, http://www.asm.md/administrator/fisiere/cadru/f57.pdf

The Centre for University, Post-university Instruction and In-service within ASM is responsible for supervising and assessing doctoral programmes18.

The **CNAA (National Commission for Accreditation and Attestation)** is also one of the key actors in doctoral programmes policy. CNAA has the following roles:

- To provide accreditation to HEIs involved in research (accreditation is given on a 6 year basis);

- To monitor doctoral programmes by accrediting doctoral supervisors;

- To deliver doctoral awards: CNAA is involved in the assessment of the thesis and the delivery of doctoral diplomas.

Doctoral programmes are provided by public and private HEIs and research institutions, the latter being coordinated by ASM.

In the majority of cases, doctoral candidates perform their research within the same institution that awards the doctoral degree, however there are instances where candidates defend their thesis in another institution than the one where they have performed their research.

There currently exists a distinction between academic and vocational universities.

Key legislation

The current regulatory framework includes several pieces of legislation, which regulate the Moldovan education system[19]:

- **General provisions** governing the Moldovan education system are laid out in the Conceptual Framework for the Development of the Education System (1994) and the Law on Education no. 547 of July 1995 and its subsequent amendments;

- **The evaluation and accreditation** of educational institutions are regulated by Law no. 1275 of July 1997 and Law no. 423 of June 1999;

- The **modernisation of the education system** was enshrined in the Strategic Directions concerning the Modernisation of the Education System and by Law no. 71 of May 2005 regarding the amendments to the Law on Education. The latter introduces a new two-cycle structure of the higher education system in line with the Bologna process.

With regard to doctoral programmes, the following regulations and common guidelines apply to all institutions involved in undertaking research:

- The Code for science and innovation of the Republic of Moldova, 2004[20];

- Government Decision regarding the organisation and implementation of doctoral and post-doctoral programmes, 2008[21];

- Regulation on the training of scientific and pedagogic-scientific personnel, 2003[22];

- Regulation on the recognition of scientific and pedagogical-scientific foreign diplomas, 2004[23]

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[18] National Report on the Bologna Process, Moldova, 2009

[19] http://www.ibe.unesco.org/Countries/WDE/2006/index.html

[20] *Codul cu privire la ştiinţă şi inovare al Republicii Moldova*, aprobat de către Parlamentul Republicii Moldova la 15 iulie 2004 prin Hotărârea nr. 259-XV

[21] *Regulamentul privind organizarea şi desfăşurarea doctoratului şi postdoctoratului*, aprobat prin Hotărârea Guvernului nr. 173 din 18 februarie 2008

[22] *Concepţia de pregătire a cadrelor ştiinţifice şi ştiinţifico-didactice*, aprobată prin Hotărârea Guvernului nr. 482 din 23 aprilie 2003

There is no such a *Charter for researchers* or Code of conduct, however the rights and duties of researchers are defined in the regulations adopted by the Moldovan government (see above).

It should be noted that according to existing legislation, Moldovan higher education institutions are autonomous in terms of administration, teaching, research activity, management and financing24. However, the autonomy of HEIs (notably universities) is limited in practice. This is mainly due to the current funding policy, as doctoral programmes funding is decided at the level of ASM (see below) and universities have limited room for manoeuvre regarding the allocation/spending of resources (see section 3.2.3 Funding below).

Joint degrees are mentioned in current legislation and the latter allows for the establishing of joint programmes and the awarding of joint degrees25. However the number of joint programmes remains limited (5 programmes as of 2008).

Policy for doctoral programmes

Doctoral programmes are regulated by the Code for science and innovation of the Republic of Moldova, 2004 (see above). In the wake of the April and July 2009 elections which brought a radical change in the composition of the Moldovan parliament and government, a new Code for Education has been drafted and is currently debated. According to the draft Code, doctoral programmes should become an integral part of the higher education system.

Recent reforms and priorities[26] aim at (i) creating a national education system which is adapted to social and economic changes, whilst taking into account the need for democratisation and the principles of Europeanisation (i.e. integration into the EU). This system should be based on a modern and decentralised management mechanism, (ii) developing and diversify financing sources; (iii) revising and modernising educational contents, plans, programmes and textbooks; (iv) reorganising, restructuring and modernising all education levels, and reform the evaluation and examination system; (v) restructuring the system of pre-service and in-service teacher training; (vi) promoting alternative forms of education; (vii) developing and implementing educational programmes for national minorities.

It should be noted that the compulsory implementation of the European Credit Transfer System by all higher education institutions started in 200527. For the moment, the credit system is not applied to doctoral programmes and the latter will be included in the National Framework of Qualifications[28].

Whilst the organisation of the Moldovan education system used to draw on the Soviet model until 1991, current reforms tend to bring the system in line with European standards.

Current debate

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[23] *Regulamentul cu privire la recunoaşterea şi echivalarea actelor de înaltă calificare ştiinţifică şi ştiinţifico-didactică obţinute în străinătate*, aprobat prin Hotărârea Guvernului nr. 472 din 6 mai 2004

[24] *National Report on the Bologna Process, Moldova*, 2007, http://www.ond.vlaanderen.be/hogeronderwijs/bologna/links/National-reports-2007/National_Report_Moldova2007.pdf

[25] N*ational Report on the Bologna Process, Moldova*, 2009

[26] *World Data On Education*, Sixth edition, 2006/07, Republic of Moldova, http://www.ibe.unesco.org/Countries/WDE/2006/index.html

[27] National Report on the Bologna Process, 2009

[28] *National Report on the Bologna Process, Moldova*, 2007

The integration of doctoral programmes into the higher education system and the re-organisation of the research area are two key topics in the current debate:

- Most stakeholders acknowledge that doctoral programmes should be an integral part of the higher education system. The current separation between higher education and doctoral programmes leads to a sub-optimal use of resources, to inefficiencies and loss of talent. It is expected that the draft *Code for Education* should address this problem by integrating the doctoral cycle into the higher education system;

- It is recognised that most research takes place within universities and to a lesser extent within research institutes. Also, the bulk of human resources (e.g. teaching staff) is to be found within universities. However, in terms of financing, universities get overall less support than research institutes, which poses a crucial question.

The two-tier system with doctor and doctor habilitat as well as the organisation of research within research institutes are the legacy of the Soviet system. It is increasingly recognised that the country needs to modernise its education system according to the European/American model. Although clear progress has been made at Bachelor's and Master's level, progress is less visible at doctoral level.

In addition, the need to increase the level of doctoral programmes (and the level of research achieved) as well as problems pertaining to the brain drain also constitute important topics in the current debate.

2.2 Doctoral programmes structure

2.2.1 Definition of doctoral programmes

The Moldovan doctoral system currently offers only one type of doctorate (academic doctorate), however it is expected that a professional/vocational doctorate will be introduced.

There exist two types of doctoral awards: doctor and doctor *habilitat*. The Moldovan equivalent of PhD is normally referred to as doctorat (the PhD graduate being referred to as a "doctor").

As stated above, both HEIs (universities) and ASM research institutes can award doctoral degrees. There is no difference between the doctorate awarded by universities or research institutes.

2.2.2 Duration

The length of doctoral programmes is regulated by law. Doctoral programmes normally last three years full-time or four years part-time[29], however it is possible to extend this duration. The purpose of the extension is not for studying, but to finalise the thesis. Nonetheless, after a two-year extension, doctoral candidates lose some of their rights (e.g. free tuition positions). Similarly, doctoral exams are valid for 7 years only, after which candidates are required to pass them again.

In order to become *doctor habilitat*, a few additional years of study are required (on average 10 years after obtaining the diploma of *doctor*).

In practice though, the difference in terms of salary is minimal between those holding a diploma of *doctor* and those holding the title of *doctor habilitat*.

There is only one registration for the full cycle.

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[29] *National Report on the Bologna Process, Moldova*, 2007

2.2.3 Funding

Annual tuition fees

There are two types of doctoral positions:

- Free of charge positions: there are no tuition fees for the candidate, as the tuition fees are funded through the State budget. However, the number of subsidised positions offered each year is limited;

- Paying positions: fees amount from 6,000 Moldovan Lei/year (between 370 euro), up to 8,000 Moldovan Lei/year (approximately 450 euro) in public universities. However the fees charged by private universities are generally higher.

The number of doctoral positions offered by public universities is determined by the ASM and not by the each university. Moreover, the upper age limit for doctoral candidates applying for a free of charge position is capped at 35 years.

The table below provides a breakdown of free of charge and paying doctoral positions offered in the country.

Table 2: Free of charge and paying doctoral positions in the Republic of Moldova, 2008-2011

Doctoral and post-doctoral positions	2008-2009	2009-2010	2010-2011
Free of charge positions *(% as of total number of doctoral positions)*	322 (56%)	346 (54%)	261 (55%)
Paying positions (tuition fees) *(% as of total number of doctoral positions)*	254 (44%)	300 (46%)	212 (45%)
Total number of doctoral positions *(% as of total number of doctoral positions)*	**576 (100%)**	**646 (100%)**	**473 (100%)**
Total number of post-doctoral positions	30	44	33

Source: National Council for Accreditation and Attestation, Moldova

Candidates' grants

Candidates can receive grants amounting to 700-800 lei/month (approximately 50 Euro) from public universities[30] if they have managed to secure a subsidised position. This grant is not sufficient for covering candidates living costs. For candidates paying the full tuition fees, no grants are available.

No other grants are provided to candidates (e.g. grants for undertaking research). However other funding streams that can be used by candidates. For instance, candidates can apply for an "excellence grant" (this is an open competition for doctoral candidates starting their second year), which amounts to 150 euro/month. The Moldovan government provides on average between 10-20 "excellence grants" per year. Candidates can also apply to ASM grants, however these grants are linked to specific national scientific projects and the selection process is a competitive one, meaning that only a few doctoral programmes actually get funding.

Financing opportunities for doctoral programmes are extremely scarce and current grants cannot realistically cover candidates' living and research expenses.

Most candidates are self-financed or have teaching activities (in most cases within their chair) in order to earn a living and finance their studies. This explains why an important number of candidates choose to do their doctorate on a part-time basis. According to current regulations, candidate are allowed to work part-time.

Funding of doctoral programmes

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[30] Those grants are allocated by the Academy of Science of Moldova

HEIs receive funding according to the number of (doctoral) positions and supervisors. The final decision on the number of doctoral positions for each HEI is made by ASM. In practice, this means that universities have to follow the budget set up by ASM and have therefore little influence on the process.

It is also recognised that the number of allocated doctoral positions is not entirely in line with existing needs. While some specialisation areas are poorly covered (i.e. few doctoral positions offered), other specialisation areas where an important number of individual has already been trained are provided with too many doctoral positions[31].

Whilst tuition fees could be used to beef up doctoral programmes, these are de facto insufficient to cover current expenses related to doctoral programmes. Moreover, the spending of tuition fees is strictly regulated by law and does not leave universities with enough room for manoeuvre to shift funds where necessary or appropriate. According to existing regulations governing the spending of tuition fees, staff salaries cannot represent more than 50% of the spending, while the remaining 50% needs to be invested in infrastructure. The majority of stakeholders agreed that under current regulations, universities cannot realistically use tuition fees funds to enhance the quality of doctoral programmes.

2.2.4 Doctoral candidate status

Generally speaking, doctoral candidates have the student status with all the related rights. However, a few considerations should be kept in mind:

- When full-time doctoral candidates also work at the chair (teaching activities), they are also considered as employees by the University. Therefore, they can cumulate both statuses;

- Part-time doctoral candidates automatically have the status of employee and do not benefit from students' rights.

Doctoral candidates wishing to work at the university are teaching assistants or lab supervisors.

2.2.5 Doctoral candidates rights

Doctoral candidates benefit from the same social security coverage as other students or employees. They are insured and can benefit from free medical coverage. Nonetheless, the free medical coverage remains extremely basic[32].

Doctoral candidates can participate in decision-making bodies pertaining to doctoral programmes. However there is no evidence showing a high level of involvement amongst doctoral candidates.

2.2.6 Organisation of doctoral programmes

Moldova does not currently have structured doctoral programmes or schools. Although each candidate has to attend taught courses (e.g. IT, foreign languages, scientific methodology, specialisation), the specialisation is done within the chair and is shaped by each university. Doctoral programmes are thus developed at the level of the university chair.

Although doctoral candidates follow programmes including both taught courses and independent research, doctoral programmes tend to be rather individualised. This is

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[31] Areas not sufficiently covered include: radiology, seismology, some segments of biotechnologies, food industry, transports, chemical industry, etc. Source: National Council for Accreditation and Attestation

[32] This feature applies to the entire Moldovan social security system. It should be noted that the free provision of social services has considerably diminished during the transition period.

also due to the fact that on average, the number of doctoral candidates per university tends to be low.

Overall, there is a trend towards the development of doctoral schools (within universities).

On a more general note, the Moldovan private sector is not involved in the training of the work force (and even less in the training of doctoral staff). The development of a fully-fledged private sector is still at an incipient stage in Moldova and there is no such tradition of involving the private sector into doctoral programmes.

2.3 Doctoral programmes content

2.3.1 Research

The majority of candidates undertake their research within the university, although in some cases it is possible to carry out research in an ASM institute (e.g. case of applied research).

Around 20-30% of candidates' time is devoted to taught courses, whilst 70% of their time is devoted to research.

The thesis subject is initially proposed by the candidate and approved by the supervisor and the chair. Once approved, the thesis subject is transmitted to the senate of the University and approved by the latter. The final decision belongs to the senate of the university. The most important criterion is the feasibility of the research.

2.3.2 Training during doctoral programmes besides research

Candidates are required to attend taught seminars during their doctoral studies. Compulsory seminars include: English (or another foreign language), IT/computer science, history and methodology of research and specialisation. Candidates would typically attend these seminars once or twice a week.

These seminars are evaluated through annual exams. Exams are held each academic year: 2 exams take place during the 1st year (IT and foreign language), 2 exams during the 2nd year (history and methodology of research and specialisation) and a final exam during the 3rd year (specialisation).

Candidates do not currently benefit from training on transferrable/generic skills.

2.3.3 Teaching during doctoral programmes besides research

Teaching duties used to be mandatory for all doctoral candidates, however the situation has changed and each university has set up its own policy in this respect. Whilst in some universities there is no such a requirement, other universities require candidates to undertake some light teaching duties (e.g. replace their supervisors or assist them). The teaching duties would amount to 20-30 hours in total spread throughout the duration of the studies. However, teaching is not compulsory if the candidate has prior teaching experience.

In most cases, teaching duties are shaped by the needs on "the ground". In faculties with a considerable number of candidates (e.g. law), doctoral candidates would be required to teach, while in faculties with fewer studies candidates would have fewer duties.

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

2.4.1 Admission/ recruitment

Please describe the admission/ recruitment requirements and procedures. Assess the gap between written procedure and the reality.

In order to apply for a doctoral position, candidates need to fulfil the following conditions:

- Candidates need to have a Master's degree (or the equivalent if the diploma was issued before 2005). The overall mark should be 9/10 at least;

- Candidates need to pass a written examination, where the foreign language and the specialisation are tested. The overall mark of the examination should not be lower than 8/10.

Having a research track record (e.g. publications in journals) is not a pre-requisite for applying for a doctorate.

Candidates applying from other universities are assessed based on the same criteria. Although bridges between disciplines are possible, it is recognised that it is much easier to be accepted when the same specialisation has been gained at Master's level (and most probably from the same university).

Candidate can appeal against the decision in case of rejection, however there is no evidence that the complaint mechanism is frequently used in practice.

Doctoral positions are published in the official journal by all universities, on ASM website and also on the universities' websites.

There is no gender balance issue. Whilst men tend to dominate in technical/scientific areas (70% males versus 30% females), females tend to dominate in social sciences (e.g. economics).

It is however recognised that the selection process is not as rigorous in practice as it appears on the paper. The following remarks could be said:

- In some cases, the thesis subjects are approved whilst they are not fully relevant or they are not in line with the R&D priorities of the university or the country;

- Candidates may be allocated to supervisors, who do not always have the required and specific specialisation/knowledge;

- Many doctoral positions in the field of fundamental science are not filled in, thus showing that young people's interest in these areas need to be increased[33]. At the same time, candidates' interest and motivation ultimately depends on the opportunities offered after graduation in these specific fields.

2.4.2 Supervision system

The supervision system

Doctoral candidates are supervised throughout their studies by their supervisor. At the end of each academic year, doctoral candidates present their research in front of all supervisors and doctoral candidates.

Supervisors need to hold a doctoral degree and to be active in the field of research.

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[33] National Council for Accreditation and Attestation, 2010

Supervisors are responsible for following-up the candidate's research, advising him when necessary and providing all the support and guidance needed to successfully conduct research.

In terms of supervisors' workload, they are required to dedicate 120 hours/year to each candidate, with the majority of supervisors seeing their candidate at least twice a month. However, the involvement of supervisors may also vary according to their personal interest in the research topic.

A supervisor can supervise up to 3 doctoral candidates if the former holds a doctorate (*doctor*) or 6 doctoral candidates if he holds a post-doctoral diploma (*doctor habilitat*). Before allocating a candidate to a supervisor, it is also important to ensure there is sufficient level of communication and understanding between the two parties.

Quality assurance mechanisms

Regarding quality assurance mechanisms for monitoring the supervisor-candidate relationship, the following should be noted:

- **Complaint/appeal mechanisms**: these mechanisms exist however they seem to be infrequently used. When conflicts occur between the supervisor and the candidate, candidates can request to be allocated to another supervisor. Candidates need to lodge a request with their chair;

- **Charter/regulations outlining the duties and rights of doctoral candidates and supervisors**: regulations have been adopted both at national level (by CNAA) and within each university (internal regulations). In some universities, these regulations are clearly part of an overall effort to set up and structure doctoral programmes and schools.

2.4.3 Doctoral thesis and defence

The defence of the thesis is a three step process, as follows:

- **1st step: presentation of the thesis to the university chair**. The thesis is presented to the members of the chair, who decide whether the doctoral candidate can proceed with the defence or whether the thesis requires further work;

- **2nd step: presentation of the thesis to the scientific seminar**. The thesis is presented to the members of a "scientific seminar". Seminar members include researchers and scientists from different universities involved in the same area of specialisation. The members of the scientific seminar decide whether the doctoral candidate can proceed with the defence or whether the thesis requires further work;

- **3rd step: final defence with the Commission**. The results of the scientific seminar are sent to the Senate of the university, which calls for the setting up of a Commission. This Commission is approved by the CNAA. The Commission is made of 7 members, who are external to the chair (none of the members should have been involved in the candidate's research). The majority of the Commission members are from other universities, including foreign ones, e.g. Romanian universities. The candidate defends his thesis in front of the Commission, which gives the final conclusions (*doctor*, *doctor habilitat* or fail).

It should be noted that the candidate's supervisor is not a member of these panels.

All documents need to be sent to the CNAA, which eventually confirms the title of doctor/doctoral habilitat.

These panels can include individuals from the private sector, however the proposed member needs to hold a doctoral degree and to be active in the relevant specialisation area.

Assessment of the doctoral defence

Overall, the following shortcoming have been highlighted[34] regarding the thesis/research quality:

- Candidates tend to choose thesis subjects, which do not present a significant scientific interest;

- Lack of innovative approaches when carrying research;

- The level of scientific investigations carried out remains low;

- Lack of analysis/synthesis skills;

- The level of competency amongst the member of the evaluation Commission varies.

2.4.4 Quality assurance mechanisms

Internal quality assurance

Universities have not developed internal quality assurance mechanisms. However the three step process for the defence of the thesis (see above) and the annual exams are believed to ensure the quality of doctoral outputs.

Generally speaking, some kind of internal quality assurance mechanisms have been developed within the chairs, however not at university level. For instance, each supervisor has to provide the university Senate with an annual report describing his activity at the end of each academic year.

External quality assurance

There seems to be no policy or document adopted at national level on external quality assurance. Several stakeholders emphasised that the organisation of the thesis defence based on the three step process should ensure the quality of outcomes.

2.5 After the graduation

Please describe the schemes or positions (i.e. post-doctoral positions) available in the country for doctors. Please present the statistics on doctors employment (sectors (academia/industry), type of employment (research, other, …)

Universities have not developed tracking systems for doctoral alumni. However, it is reckoned that each chair keeps track of its candidates, especially as an important number of doctoral candidates are already employed by the university/chair and would tend to stay in academia after graduation[35].

Overall, the majority of graduates tend to stay in academia, with very few going to the public sector (the only exception being law and political science candidates). This is reflected by the high share of teaching staff holding doctoral degrees (approx. 80% of HEIs teaching staff). Graduates going to the private sector remain a rare species, due to the lack of institutional links between the academic sphere and the private sector. No statistics related to post-doctoral careers are available.

Moldovan universities are currently facing two challenges:

- An increasing number of doctoral candidates leave the country after graduation to find more attractive positions in foreign universities (no statistics were available);

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[34] National Council for Accreditation and Attestation, 2010

[35] It was also emphasised that Moldova being a small country, it is relatively easy to keep track of doctoral alumni.

- An increasing number of doctoral candidates are unable to complete their doctorate, due to a lack of motivation and (economic and scientific) incentives. This obviously impacts on the quality of research undertaken in Moldovan HEIs.

3. International collaboration, mobility and joint doctoral degrees

3.1 International cooperation data

The Tempus programme has existed only since the beginning of 2000. It is acknowledged that Tempus has contributed to developing the Moldovan higher education system.

Bilateral programmes signed by Moldova are generally targeted towards neighbouring countries. Several bilateral agreements have been signed with Romania, Russia, Ukraine, Belarus and Bulgaria.

No further information was provided.

3.2 Foreigners as doctoral candidates

Number of foreign doctoral candidates in the country

On average, approximately 30 foreigners are awarded a doctoral degree in Moldova each year, with foreign candidates coming from a total of 37 countries. The degrees awarded cover 18 areas[36]. During 1993-2008, a total number of 383 foreigners (amounting to 12.6 % of all doctoral graduates) have been awarded doctoral degrees (out of those, 13 were awarded the *doctor habilitat* degree).

Doctoral degrees gained by foreigners were mostly awarded in pedagogic sciences (27.7%), law (18.8%), economics (12.5%), biology (7.8%), agriculture (6.5%) and medical sciences (5.7%)[37].

Conditions for admission

Foreign candidates need to have a Master's level degree (or an equivalent level) and to pass a foreign language exam (English, French or German). They are also required to send their application to the Ministry of Education. Once approved by the Ministry, their application is screened by the university.

In total, Moldova hosts foreign doctoral candidates from 37 countries[38]. An important number of candidates come from Siberia, China and Arabic countries.

Foreign candidates cannot apply for tuition free positions, meaning that they need to pay the full tuition fees. Fees amount to approximately 28,000 Lei/year (1,770 Euro/year). However, they can apply to other grants.

Otherwise, foreign candidates have the same rights and duties as nationals.

In order to be recognised in the job market, foreign doctoral degrees need to be validated by CNAA.

Regarding existing opportunities on the job market, it should be noted that the Moldovan economy has suffered from mass emigration (as well as a brain drain)[39] due

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[36] National Centre for Accreditation and Attestation, 2010

[37] Other areas were also covered but are not provided here as the percentage is low. Source: National Centre for Accreditation and Attestation, 2010

[38] National Centre for Accreditation and Attestation

[39] Those who left the country in search of better prospects also include both highly skilled and low-skilled workers.

to the lack of economic/social prospects during the transition period. It is recognised that up to 1 million people (i.e. approximately 25% of the entire Moldovan population) have left the country in search of better economic prospects. In this situation, it is difficult to assess the extent to which foreigners could benefit from equivalent prospects as nationals.

3.3 National doctoral candidates going abroad

Exact statistics on this topic are not available. It is recognised however that many candidates leave the country to undertake doctoral programmes abroad. Between 2001 and 2008, around 7.6% of candidates have obtained the recognition of their foreign doctoral degree by CNAA. Therefore, the share of doctoral candidates studying abroad may be even higher, as many candidates may not need/seek to have their foreign diploma recognised in Moldova if they choose to remain abroad.

Although doctoral candidates are encouraged to spend time abroad, candidates' mobility generally depends on each university and on current cooperation/agreements between the latter and foreign HEIs. Moldovan universities do not have enough resources to support doctoral candidates going abroad. When doctoral candidates secure a position in a foreign university, this is the result of individual efforts by candidates themselves. There are no formal mechanisms at national level to support candidates' mobility.

Overall, the number of joint programmes at doctoral level is very limited. The joint doctoral degree Ecole *Doctorale en Sciences Sociales pour Europe Centrale et Orientale* between Moldova Technical University, the State University "Ion Creangă" and foreign HEIs (Belgium, France, the Netherlands, Bulgaira, Romania and Canada) is one example.

There is no automatic recognition of national degrees abroad, however there are a few bilateral agreements for the recognition of doctoral degrees.

4. Challenges and possible future policy actions

Below are the key problems that the Moldovan higher education system currently faces:

- **Financing**: very few grants exist and funding opportunities remain scarce (both from the state budget and the private sector). As a result, candidates cannot undertake high quality research due to 1) limited access to foreign resources (e.g. publications) 2) few opportunities for being peer-reviewed 3) limited funding for attending international seminars and events 4) obsolete infrastructure and insufficient infrastructure and teaching materials. It is widely acknowledged that the lack of funding accounts for the low level of research;

- **Candidates' motivation for enrolling into and completing doctoral programmes**: there are very few incentives (financial, employment opportunities) to enrol into doctoral programmes and to complete them. The most competitive candidates leave the country, whilst the average ones tend to stay in the country. Thus, doctoral candidates trained in Moldova HEis do not always produce high quality research.

- **The organisation of doctoral schools**: these need to be better structured, however the structure of doctoral programmes cannot be directly imported from abroad. Whilst doctoral schools in foreign countries tend to have many candidates with a similar profile, Moldovan HEIs have fewer doctoral candidates spanning a large number of specialisations. The country would need to elaborate a model which is relevant for the situation on the ground. Inter-university doctoral schools could be a relevant option for the Moldovan doctoral system;

- **Lack of autonomy**: universities do not enjoy sufficient autonomy, especially with regard to their budget and the spending of the budget.

In addition, the lack of cooperation with the private sector was also highlighted as an important issue.

As a potential solution, the following elements were suggested:

- **Integrate doctoral programmes into the higher education system and abolish the *doctor/doctor habilitat* separation**: national legislation and the national framework for doctoral programmes and HEIs hosting doctoral programmes should be improved. Although Moldova has signed the Bologna process, the 1st and 2nd cycles only have been overhauled accordingly. According to current regulations, the 3rd cycle (i.e. doctoral programmes) is still considered as post-university studies, i.e. not part of the university system. The challenge in the short and medium term is to design a framework for integrating the 3rd cycle into the university system. This entails that all stakeholders reflect on how to regulate and organise doctoral programmes, programmes and the curricula. In addition, the second doctoral diploma (*doctor habilitat*) should be scrapped, as it does not constitute a relevant training element in light of the current (and future) economic and social needs;

- **More autonomy and power** should be devolved to universities. Universities should be able to freely determined how to spend their resources;

- In order to maximise resources, it would be sensible to **integrate the academy institutes into the university system**. The use of existing human resources and infrastructure could be optimised.

Overall, problems faced by EU programmes participants at country level include the lack of (or insufficient) information on study organisation and structure in EU Member States. Moreover, participants do not have a sufficient knowledge of existing regulations.

The EU has played an important role in supporting the reform of the education system. Moreover, the EU has supported the implementation of several regulations/guidelines aiming at modernising the Moldovan higher education system.

Overall, the exchange of ideas, which fosters the dissemination of "modern" values oriented towards high quality research, is a key driver of change. The EU could act in this specific area.

The following concrete actions were put forward:

- The EU could support the country in **integrating doctoral programmes** into the higher education system, by providing assistance (both financial and technical) in how to design doctoral schools, programmes and the curricula;

- The EU should **facilitate Moldovan researchers' access to research** and research centres (including to literature and electronic resources), as well as to international events and seminars;

- **More cooperation programmes at doctoral level** between Moldovan and European universities could be beneficial (i.e. joint degrees, partnership between universities, cooperation mechanisms): these types of programmes already exist at Master's level and similar programmes could be implemented at doctoral level. This would allow universities to improve their capacities and the quality of research and training;

- **Capacity building/technical assistance and training**: the EU could develop training on how to participate in international projects. Moldovan universities do not have adequate human resources or enough expertise to set up and elaborate research projects (and win them). The international relations department within universities do not have enough resources and expertise: the only support they currently provide is general information about tenders and grants/opportunities.

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Appendix A - Indicative matrix of interviewees

Interviewees roughly belong to four types : i) macro level (ministries), ii) micro level (HEI), iii) international (contact points of EU programmes) and iv) EC officers. Find an indicative table of who is supposed to be the more able to answer which section.

Figure 1 Indicative matrix of interviewees

Section	Title	Interviewee targeted
2. Doctoral studies data		• **Type 1** : Ministry and education, research advisory councils
3. Doctoral studies		
3.1	Doctoral studies overall organisation	• **Type 1** : Ministry and education, research advisory councils
3.2	Doctoral studies structure	• **Type 2**: HEI/ University Dean/ Vice-rectors in charge of research/ Supervisor/ Doctoral students (Unions)
3.3	Doctoral studies content	
3.4	Doctoral studies process: admission, supervision, monitoring and assessment	
3.5	After the graduation	• **Type 1** : Ministry and education, research advisory councils
4. International collaboration, mobility and joint doctoral degrees		
4.1	International cooperation data	• **Type 3**: coordination team and national contact points of EC programmes)
4.2	Foreigners as doctoral candidates	• **Type 2** : HEI/ University Dean/ Vice-rectors in charge of research/ Doctoral students (Unions)
4.3	National doctoral candidates going abroad	• **Type 2** : HEI/ University Dean/ Vice-rectors in charge of research/ Doctoral students (Unions)
5. Challenges		• **Type 1, 2, 3 and EC officers**

Appendix B - List of interviewees

Figure 2 List of interviewees

Name	Position	Organisation	Contact details
Valentin Arion	Head of Office	National Tempus Office	Stefan cel Mare str. 168, TUM, Chisinau, MD-2004, Moldova Tel./fax: +373 22 23 72 82 valarion@molddata.md
reditation and Attestation)• MD-2004, Chişinău, bd. Ştefan cel Mare, 180 Tel: +373 22 29 04, Chişinău, bd. Ştefan cel Mare, 180 n)• MD-2004, Chişinău, bd. Ştefan cel Mare, 180 Tel: +373 22 29 04, Chişinău, bd. Ştefan cel Mare, 180 2 29 04, Chişinău, bd. Ştefan cel Mare, 180 Tel: +373 22 29 62 71 kantser@lises.asm.md or canter@cnaa.md			
cil for Accreditation and Attestation)• MD-2004, Chişinău, bd. Ştefan cel Mare, 180 D-2004, Chişinău, bd. Ştefan cel Mare, 180 reditation and Attestation)• MD-2004, Chişinău, bd. Ştefan cel Mare, 180 D-2004, Chişinău, bd. Ştefan cel Mare, 180 d Attestation)• MD-2004, Chişinău, bd. Ştefan cel Mare, 180 D-2004, Chişinău, bd. Ştefan cel Mare, 180 D-2004, Chişinău, bd. Ştefan cel Mare, 180 Tel: +373 22 232306 holban@cnaa.md			
Larisa Bugaian	Vice-dean	Technical University of Moldova	Tel./fax: (373 22) 233705, +373-22-23-54-48 lbugaian@gmail.com
Mihail Revenco	Vice-dean for scientific activity	State University of Moldova	Tel. +(37322) 57 74 04 Tel. +(37322) 24 42 48 revenco@usm.md
Maria Sleahtitchi	Vice-dean for scientific activity	State University „Aleco Russo" in Balti	Tel./ (373 231) 24153 msleahtitchi@yahoo.com

Irina Nicolaescu	3rd year doctoral student in political science, international relations	State University of Moldova	Tel: +37379633201 Email: Nicolaescu_irina@yahoo.com

Table 3: Public and private HEIs in the Republic of Moldova, 2009

Name of institution
Public institutions
Universitatea de Stat din Moldova
Universitatea Tehnică a Moldovei
Universitatea Pedagogică de Stat "I.Creangă"
Academia de Studii Economice din Moldova
Universitatea de Stat "Alecu Russo" din Bălţi
Universitatea de Stat din Tiraspol (cu sediul în mun. Chişinău)
Universitatea de Stat din Comrat
Universitatea de Stat de Educaţie Fizică şi Sport
Universitatea de Stat de Medicină şi Farmacie "N. Testemiţanu"
Universitatea Agrară de Stat din Moldova
Institutul de Relaţii Internaţionale din Moldova
Academia de Muzică, Teatru şi Arte Plastice
Institutul Militar al Forţelor Armate "Alexandru cel Bun"
Universitatea de Stat "Bogdan Petriceicu Hasdeu" din Cahul
Universitatea de Stat din Taraclia
Universitatea Academiei de Ştiinţe a Moldovei
Private institutions
Universitatea Liberă Internaţională din Moldova
Institutul Internaţional de Management "IMI - NOVA"
Universitatea "Perspectiva - INT"
Universitatea Cooperatist-Comercială din Moldova
Universitatea Slavonă
Universitatea de Studii Politice şi Economice Europene
Universitatea de Studii Europene din Moldova
Universitatea "Şcoala Antropologică Superioară"
Institutul Umanistic Contemporan
Universitatea de Studii Aplicate din Moldova
Academia de Transporturi, Informatică şi Comunicaţii
Institutul Nistrean de Economie şi Drept
Filiala instituţiei nestatale de învăţămînt
"Institutul Baltic de Ecologie, Politică şi Drept" din Moldova

Source: Ministry of Education, Moldova

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