



EURODOC 2004 QUESTIONNAIRE - PORTUGAL

A. General information on doctoral programmes and doctoral candidates.

1. Please give a short overview of the structure of doctoral programmes in your country (number of people enrolled and graduated, other statistical data, recruitment method, skill development, ...). Consider that some topics will be discussed in detail in sections C and D.

For a short overview of the structure of doctoral programmes in Portugal, see, for example, Eurodoc 2003 Questionnaire – Portugal or, for a more complete picture see reference [4].

In 1999/2000 (more recent available data), the number of people enrolled in PhD programmes was 2,955, of which 45.8% were women (in reference[4]).

Because most PhD researchers live on grants awarded by the Portuguese Science Foundation (FCT), statistical data on the number of grants awarded per year by FCT gives an accurate picture of the Portuguese situation. In table 1 the evolution of awarded grants for the years 2000, 2001, 2002 and 2003 is presented. The figures clearly indicate that the number of grants awarded by the Portuguese Government has been decreasing over the last four years.

Table 1: Number of grants per year

	2000	2001	2002	2003
Number of PhD grants	834	762	634	563*

Source: FCT, OCT, July 2003 [2]

* provisory numbers

In table 2 the distribution of the total number of grants by research area, by site and by gender in the period 2000-2002 is shown. By direct analysis of this table we can point out that:

- i) The number of grants awarded for the natural, medical and engineering sciences is 69% of the total;
- ii) The number of grants awarded for PhD exclusively taken in Portugal is only 47% of the total. Nevertheless, the percentage is not distributed equally between all disciplines, for example, in Mathematics the percentage for people enrolled in a PhD abroad is 82% whereas in Chemistry this percentage is only of 23%;

- iii) The overall number of women pursuing a PhD degree is higher than men, although the distribution also depends on the subject - in Electronics Engineering, for instance, only 15% of grant-holders are women whilst in Biochemistry Engineering only 22% of grant-holders are men.

Table 2: Distribution of grants by area, site and gender

Subject	PhD	Portugal	Abroad	Mixed	Women	Men
Mathematics	77	14	58	5	37	40
Physics	104	47	32	25	30	74
Chemistry	155	119	11	25	84	71
Biological Sciences	338	136	95	107	232	106
Earth Sciences	140	69	29	42	75	65
Agriculture and Veterinary Medicine	82	38	25	19	52	30
Medical Sciences	228	86	53	89	161	67
Mecanical Engineering	52	31	17	4	13	39
Materials Science & Engineering	51	38	3	10	26	25
Civil and Mining Engineering	51	30	16	5	16	35
Biochemistry Engineering	90	61	6	23	70	20
Chemistry Engineering	59	43	6	10	25	34
Electronics Engineering & Computer Science	110	66	38	6	16	94
Economics	98	17	75	6	43	55
Management	27	2	24	1	14	13
Law	30	15	12	3	14	16
Political Sciences	32	7	21	4	12	20
Sociology	39	17	19	3	15	24
Demography	1	1			1	
Anthropology	25	12	9	4	15	10
Geography	8	1	5	2	6	2
Education Sciences	66	34	25	7	45	21
Psychology	80	48	25	7	60	20
Linguistics	22	11	6	5	14	8
Communication Sciences	29	12	12	5	12	17
Philosophy	37	17	14	6	11	26
History & Archaeology	85	43	22	20	38	47
Architecture	25	6	16	3	10	15
Literature	36	18	12	6	28	8
Arts	53	17	28	8	27	26
Total	2230	1056	714	460	1202	1028

Source: FCT, OCT, July 2003 [2]

To apply for a grant doctoral candidates have to be accepted as PhD students by one University and a supervisor. The selection is based on the candidate's graduation marks, his (her) work plan and on the merit of the host institution and supervisor. The grants are awarded for a maximum of four years (renewed annually after the submission of a work report) in which the PhD ought to be completed. However, due to both poor working/research conditions (specially in experimental areas) and lack of supervisor evaluation, most students take 5 to 6 years from start to finish.

2. Taking into account the 2003 Eurodoc survey available at: http://www.eurodoc.net/docs/situation_ESR_2003.pdf, give an update of the conditions of doctoral candidates, trying to accomplish - if possible - for the existing variety of situations about funding, duties and rights, social security issues, ... ("new" countries are obviously invited to provide these data anew).

The conditions of Portuguese doctoral candidates are the same as last year's, except for the fact that each year the possibility of getting any funding is

decreasing. As mentioned in question 1, almost all PhD's are sponsored by the Portuguese Science Foundation. These grant-holders have the following rights and duties:

- i) Earn a monthly income of €980 (for those who are working abroad €1,710, independently on the country);
- ii) Minimum social security plan, which is voluntier;
- iii) No legal right to holidays;
- iv) No unemployment benefits;
- v) Teaching is not compulsory, but those who teach are under paid (the payment is usually associated to a reduction of the fee);
- vi) There is maternity leave, not parternity leave;
- vii) Do not have to pay taxes;
- viii) Must exclusively be engaged in research.

Nevertheless, the Minister of Science has recently recognised that a new grant's law is necessary although it is not clear when will these changes take place.

The Portuguese Communist Party has submitted a new law to the Portuguese Parliament which includes many of ABIC's proposals, the most important one being the insertion of grant holders in the Portuguese general welfare system.

B. Current topics in Higher Education and Research policy.

1. What is the awareness of the "Bologna Process" in your country (see <http://www.bologna-berlin2003.de/> for references)? Do you know that the doctoral level will be fully inserted at the third level of higher education? What are the consequences, in your association's opinion?

This issue has been a topic of (some) national discussion, but our association has not discussed this issue.

2. What is the awareness of the "Lisbon strategy" in your country (see http://www.europa.eu.int/comm/research/era/3pct/index_en.html for references)? Is there any debate at the political level about Research & Development?

Although Portugal is the EU member state with the highest growth rate in R&D expenditure (8.6%), it still is (with Greece and Spain) one of EU members with lower R&D expenditure - 0.84% of GDP in 2001 (Portugal) to 1.98% (EU) [5].

However, the government claims that the increase in R&D investment should be lead by the private sector. Public R&D funding has been reduced, for the second year in a row.

Whilst the private investment in R&D in Europe represents, on average, 55.5% of the total budget (1999), in Portugal it represents only 32.3% (2001).

3. In general, what are the hottest topics (in HE and R&D) under discussion

in your country, in particular affecting young researchers? What are the actions and plans of your association?

In HE: A new law (August 2003) of funding of higher education defines that tuition fees are determined each year by each institution according to the nature of the courses and their quality. Because universities are underfinanced, this recent legislation led to a dramatic increase in tuition fees (up to 40% increase) followed by large nationwide students' protest and demonstrations against tuition fees.

The tuition fees for graduate courses have also been increased. Local groups of ABIC (at the Faculty of Sciences of Lisbon's, for example) have been able to guarantee that the charged tuition fee may never be above the maximum funding for tuition fees that FCT provides (€2,750 in Portugal).

In R&D: Underfinanced public research and almost null investment in R&D by the industry. Immobility at the universities and more senior researchers and technicians at public research institutions. Lack of scientific employment for young researchers.

Because (lack of) scientific employment is a major concern for Portuguese young researchers, ABIC is organising a national conference on this subject, which will bring together policy makers, public and industrial researchers and young researchers themselves and which we hope will promote a national debate on this subject and improve the current situation.

C. PhD Supervision and Training.

1. Please give details (with web references if possible) of any standards that exist in your country as national (or local) guidelines for supervision and training. For example do you have a code of practice for research degrees or a charter? Are there any plans to introduce such standards if you do not have them? If your country does have any standards or appropriate documentation regarding research degree programmes, we would appreciate either an English translation or summary of any documentation (if it is large) you have. (Do these standards include training for supervisors, the opportunity to change supervisor, have a second supervisor? Are there review methods for the supervisor and the PhD candidate?)

In order to be accepted as a PhD, every candidate has to submit a work plan, which usually is written by (or together with) his (her) supervisor, to the host institution and/or University. Once the candidate is accepted, he (she) is obliged, in principle, to follow his (her) work plan and, for those supported by FCT, to report every year on his (her) work.

Also, for the FCT grant-holders, it is permitted to change supervisor within the first year of the programme by mutual agreement between the ESR, the supervisors and FCT.

Appart from this, to our knowledge, there is no code of practice or charter

either to PhDs or to supervisors, neither are there any training programmes for supervisors or plans to introduce them.

2. Please list no more than five key issues affecting the supervision and training of doctoral candidates in your country. As an example this may be the dominance of certain supervisors, no orientation course for early stage researchers to plan their work etc.

- a) Despite the fact that PhD's have to follow a work plan, often this work plans are too vague and there is no real planning on their daily work or supervising by their supervisors;
- b) Supervisors are often enrolled in too many activities (teaching, managing) and don't have the time or the energy to supervise;
- c) Because of lack of scientists and technicians, PhD's who are pursuing an experimental work must develop most part of the experimental tasks of the research projects of their groups even if this is sometimes not strictly related to their PhD subject;
- d) In general, research infrastructures are poor - laboratories, computers, libraries, travel funds.

3. Do higher education institutions in your country have any specific training programme for research students at any point during their research programme? Is there any plan for introducing or modifying them? Please give details.

It has been becoming more and more popular among higher education institutions to set up a training programme ("Programa Doutoral") for first year PhD students. However, the different programmes have a wide approach, even in different departments of the same faculty, including for example taking under- and/or pos-graduate courses on specific topics, attendance of scientific meetings or seminars, etc.

On the other hand, training courses like foreign language ability, computer literacy, teaching, presenting, interview technique/job search, etc, haven't been introduced neither are plans to introduce them.

D. International Mobility.

1. What is the situation about incoming and outgoing young researchers at the doctoral and postdoctoral level? Is there any debate in your country about "brain drain" and "brain gain"? Please provide data if available.

At PhD level, the percentage of grants awarded to Portuguese researchers for research abroad is very high (over 52%) as can be seen in table 2. In 2001, the top four foreign countries were: 1st UK, 2nd USA, 3rd France and 4th Spain, this four countries welcomed more than 75% of Portuguese ESRs abroad.

At Post-doc level, mobility relative to the institute in which PhD was taken

and, particularly, mobility of PhD holders from foreign universities to Portugal is valued in the evaluation of grants' applications. In 2001, only one third of the total post-doctoral grants were awarded to research abroad. The top four foreign countries in that same year were: 1st USA, 2nd France, 3rd UK, 4th Spain, which represents slightly less than 75% of the total.

In 1998, FCT started awarding PhD and post-doctoral grants in Portugal to foreigners without requiring one year of official residence in the country (as it was the case until then).

The number of foreigners taking their PhD or post-doc in Portugal was then very small; in 2001, over 300 foreigners were taking their post-graduate research in Portugal, (56% of the post-doctoral grants and 11% of the PhD grants). About 40% of these foreigner post-doctoral grant holders are coming from other EU countries, USA or Canada; about 20% come from Eastern European countries, namely Russia, Ukraine and Romania; about 20% come from China, 22% from India and 7% from Brazil. The equivalent percentages referring to foreigner PhD grant holders in Portugal are, respectively, 25%, 27%, 14%, 0% and 21% [4].

Brain drain has been widely discussed, e.g. many articles in the press reporting particular cases of researchers who have preferred to move abroad due to lack of research conditions in Portugal, but there is no available data on this issue.

2. What is the current situation of recognition of academic degrees and titles earned abroad? Do you have any "joint degree programmes" for European or international Ph.D.s?

For those who earned their academic degrees abroad, the process of getting recognition is too long and expensive.

There is the possibility of getting a "joint degree programme" when the doctoral researcher is jointly supervised by two supervisors from universities on two different countries (one in Portugal and one abroad) and there is a mutual agreement between the two institutions.

3. What are the five most important obstacles that, according to your organization, burdens young researchers mobility?

For outgoing portuguese young researchers

- a) Social-cultural: Being away from one's family and friends; Many get married during their doctoral programmes; In average Portuguese graduates are older than EU's average; Hard to adapt oneself to different cultures, language;
- b) Lack of information: Not enough information about mobility programmes, grants; usually there aren't "mobility offices" at universities or research institutes;

- c) Lack of funds: Erasmus funds are lower than the real costs; FCT awards an allowance yearly to grant holders to support the costs for an international presentation in scientific meetings; Other funds are difficult to get;
- d) Administrative: For example Erasmus involves a lot of bureaucracy;
- e) Gender: Less acceptable for a woman to go abroad by herself; Children; Marriage.

For incoming young researchers

- a) Immigration law: If they are from an EU third country it is difficult to get a visa; when married the partner isn't allowed to work;
- b) Lack of Information: Web pages usually in Portuguese; No information offices for foreign researchers; No help in settling down (rent a house, for example);
- c) Language: Not enough Portuguese courses or very expensive;
- d) Lack of funds: Very few funds to invite foreign researchers;
- e) Gender: No child care facilities.

E. Professional Future.

1. What are the perspectives for the employment of young researchers in Universities and research institutes? Are there any specific programs or initiative for recruitment? What does your national association suggest in order to improve the current situation?

Due to quenched vacancies in state laboratories and underpopulated universities, the employment perspectives for young researchers in the public sector are almost equal to zero, which means that the only options for being engaged in research are applying to grants or working for free.

2. Are there any programs to promote the collaboration between academia and industry? Are there any programs provided by the government to support the employment of young researchers in the private sector? What is the view of your national association about these programs?

In recent years there has been a governmental programme for professional employment of doctors and masters in the private sector at low costs to the industry - in the first year 75% of the researcher's wage is supported by the state, in the second year 50% and in the third year 25%. The outcome of this program has been very unsatisfactory: since 1997 only 148 researchers (Table 3).

Table 3

Year	PhD	Master	Total
1997	13	4	17
1998	8	11	19
1999	6	4	10
2000	3	2	5
2001	11	7	18
2002	20	15	35
2003	14	20	34
January 2004	2	8	10
Total	77	71	148

Source: AI [3]

This year a new programme has been implemented: PhD in industrial environment. There is no data on the success of this new programme.

3. In general, what are the career prospects and salary conditions for researchers, related with other professions?

Career prospects are poor (this led to an increase of the number of people applying for grants or enrolled in posgraduate courses).

F. Gender Equality.

1. What is the situation in your country about social rights for maternity/paternity leave for early stage researchers, and for experienced researchers?

Maternity leave is included in Portuguese grants, but not paternity leave. Experienced researchers (except if they are post-docs) are civil servants therefore they have maternity/paternity leaves.

2. Are there universities/institutions having specific programs to facilitate the mobility of women researchers (e.g. child care facilities,...)? If yes, please give examples.

Most universities/research institutes do have child care facilities. Nevertheless, these facilities are not specific for foreign women/men and often have long waiting queues, which is the common situation.

3. What does your association think about the necessity of taking into account family issues in the career of a researcher, whereas scientific production is often seen only from the "quantitative" side?

The portuguese society is in general machistic and does not recognise family issues as particularly relevant.

Nevertheless, and for a lot of various socio-cultural reasons, Portugal shows the highest R&D feminisation rate (53%, in the Government institutions sector [6]) in EU.

G. General discussion.

Which are the ideas your association would like to put forward for EURODOC policy in 2004?

Continuing to pursue the struggle for the recognition of doctoral students as productive researchers who play a crucial role in the R&D national effort, to implement the social benefits available for other career researchers.

Lobby EU states to reform their R&D budgets in order to achieve the "Lisbon Strategy".

Create an Eurodoc Newsletter, with information on Eurodoc's objectives and policy, including also national's associations.

References

[1] Fundação para a Ciência e a Tecnologia:

www.fct.mces.pt

[2] Observatório da Ciência e do Ensino Superior:

www.oces.mces.pt

[3] Agência de Inovação:

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[4] Mobisc: *Science Careers in Portugal*; Heloísa Perista (coord.), Alexandra Silva; CESIS, January 2004

[5] Eurostat:

<http://europa.eu.int/comm/eurostat/>

[6] Eurostat: *Women in Public Research and Higher Education in Europe*; I. Laafia, A. Larsson; Theme 9, July 2001

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