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Researchers' Report 2014

Country Profile: Belgium



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1. Key data

National R&D intensity target

“Belgium is not on track to reach its R&D intensity target for 2020 of 3%. After a peak in 2001 at 2.07%, Belgian R&D intensity decreased to 1.83% in 2005. This decrease was due to a fall in business R&D intensity (from 1.51% in 2001 to 1.24% in 2005). Business R&D intensity partially recovered in 2006-2008, up to 1.34%, and in 2011 slightly increased further, up to 1.37%, but this remains still well below its 2001 peak. However, thanks to an increase in public R&D intensity since 2000 (public R&D intensity was 0.52% in 2000, 0.55% in 2007 and 0.65% in 2011), overall R&D intensity in 2008-2011 was again close to its 2001 peak¹. Since 2010, public investment in R&D has been stable and a 5% increase is expected for 2013. However, the growing role of fiscal incentives must be stressed. If coupled with a reorientation of business investment in Belgium, this may foster R&D business intensity and hence help Belgium to improve its trend to meet the headline target.

The decrease in business R&D intensity during the last decade is linked to a strong reduction of R&D activities in Belgium in two industry sectors: radio, TV and communication equipment, and chemicals and chemical products (excluding pharmaceuticals). In 2000, radio, TV and communication equipment (18%), chemicals and chemical products (excluding pharmaceuticals) (17%) and pharmaceuticals (16%) accounted for slightly more than half of Belgian business R&D expenditure (BERD). Since then, these three sectors have experienced diverging trends. While pharmaceuticals-related R&D expenditure has more than doubled, representing 28% of total Belgian business R&D expenditure in 2009, the R&D expenditure of the two other sectors has declined. R&D expenditure decreased by 8% in the case of chemicals and chemical products (excluding pharmaceuticals) and by 62% in the case of radio, TV and communication equipment, reducing their shares in BERD in 2009 to respectively 11% and 5%. The service sector "Computer and related activities" has on the contrary become increasingly important, accounting for 8% of BERD in 2009, compared to 4% in 2000.

Belgium has been very successful in the EU Framework Programme. Up to early 2012, slightly over 3 350 Belgian participants had been partners in an FP7 project (a success rate of 24%), with a total EC financial contribution of EUR 1.0 billion. Regarding the other main source of EU funding, the FEDER Regional Funds, in the programming period 2007-2013, a total of EUR 643 million (31.2% of the total FEDER fund to Belgium) was allocated to research, innovation and entrepreneurship in the Belgian regions.”² {R&D intensity target: 3%, R&D expenditure as % of the GDP: 2.24 in 2012}³.

Key indicators measuring the country's research performance

The figure below presents key indicators measuring Belgium's performance on aspects of an open labour market for researchers against a reference group and the EU average⁴.

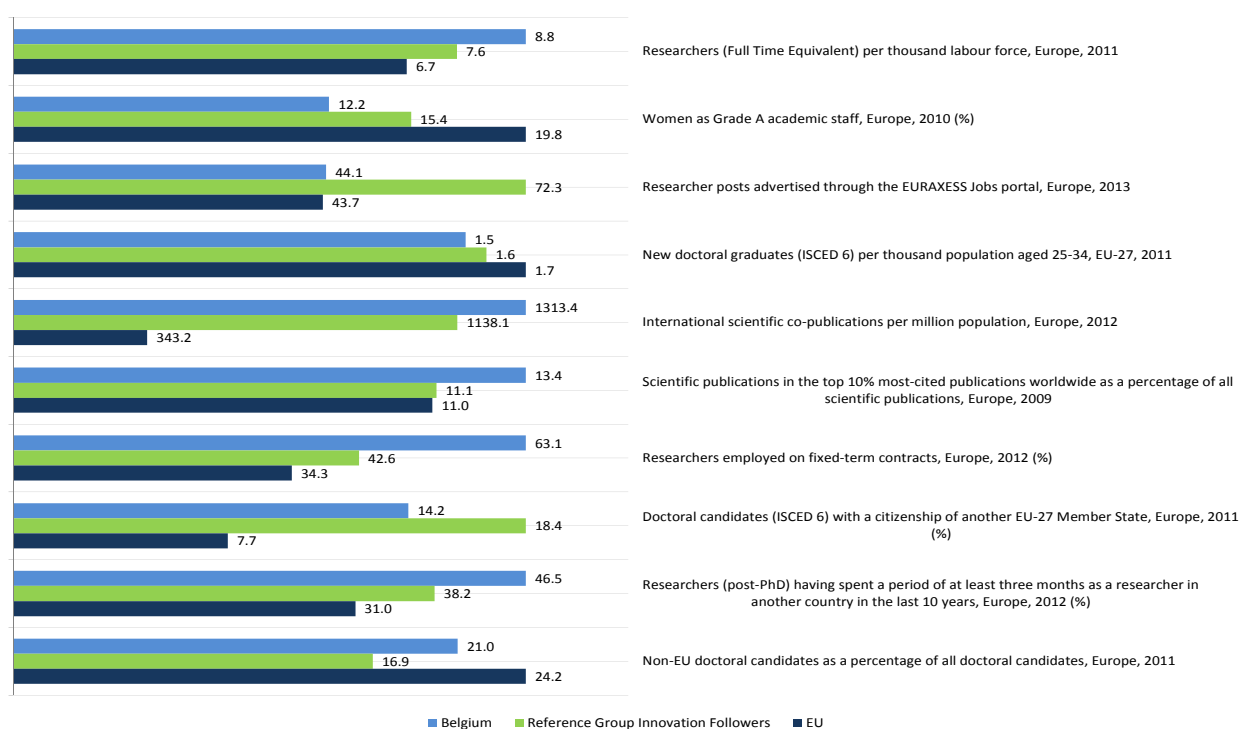
¹ In 2012, R&D expenditure was 2.24% (Eurostat, 2014).

² European Commission (2013), "Research and Innovation performance in EU Member States and Associated countries. Innovation Union progress at country level 2013"

³ Source: Eurostat, March 2014

⁴ The values refer to 2012 or the latest year available

Figure 1: Key indicators – Belgium



Source: Deloitte

Data: Eurostat, SHE Figures, EURAXESS Jobs Portal, UNESCO OECD Eurostat education survey, Innovation Union Scoreboard 2014, MORE2. Notes: Based on their average innovation performance across 25 indicators, Austria, Belgium, Cyprus, Estonia, France, Ireland, Luxembourg, Netherlands, Slovenia and the UK show a performance above or close to that of the EU average. These countries are the “Innovation followers”⁵.

Stock of researchers

The table below presents the stock of researchers by Head Count (HC) and Full Time Equivalent (FTE) and in relation to the active labour force.

Table 1: Human resources – Stock of researchers

Indicator	Belgium	EU Average/Total
Head Count per 1 000 active labour force (2011)	13.2	10.55
Head Count (2011)	63 207	2 545 346
FTE per 1 000 active labour force (2011)	8.79	6.75
Full time equivalent (FTE) (2011)	42 686	1 628 127

Source: Deloitte

Data: Eurostat

2. National strategies

In Belgium, the implementation of human resource strategies falls within the jurisdiction of the Communities (the *Vlaamse Gemeenschap* [Flemish Community], the FWB, the *Fédération Wallonie-Bruxelles* [Wallonia-Brussels Federation]) and the regions (Flanders, Wallonia and Brussels-Capital). The Wallonia-Brussels Federation and Wallonia have together published the Wallonia-Brussels partnership for researchers to strengthen their strategies and research policies.

At Federal level, the State safeguards the legal framework by ensuring access to the labour market, equal opportunities and gender equality. The table below presents key programmes and initiatives intended to

⁵ European Commission (2014), “Innovation Union Scoreboard 2014”

implement the strategic objectives to train enough researchers to reach Belgium's R&D targets, to promote attractive working conditions, and to address gender and dual career aspects.

Table 2: National strategies

Measure	Description
Federal level	
Guide for mobile researchers, published under the auspices of the Belgian Federal Science Policy Office⁶ (2011)	The Guide includes practical information for researchers working and residing in- or outside Belgium (e.g. visa, social security benefits and contributions, individual tax status, labour law, relocation and housing).
New federal Government formed in December 2011	The relevant federal Minister is in charge of Science Policy and Development Cooperation. A policy orientation note was issued, with the mobility of researchers and visa issues high on the agenda. The government does not expect any major changes due to a budget constraint on most expenditure (reduction in the 2012 operating budget of 15%).
Roadmaps of the Federal Scientific Institutions (FSI's) (ongoing)	<p>The FSI's under the authority of Belgian Federal Science Policy Office (BELSPO) have developed their own roadmaps to outline their priorities and strategies, including human resources, services to society, scientific development and federal museums. The roadmaps include the topics of mobility and career opportunities for researchers in the Federal Scientific Institutions as well as their integration in the academic sphere (at national and international levels). These roadmaps were included in the BELSPO "Contrat de Gestion" (management contract) approved and endorsed by the Minister in June 2012.</p> <p>In that context, BELSPO has a five-year agreement with the International Foundation for Science to foster mobility in the scientific domains in which the IFS is active (water, plants and environment). This scheme is for use by the FSI's, but also by the VLIR-UOS and the CUD (the Flemish and French-speaking agencies in charge of development cooperation).</p>
Flemish Community	
Action Plan for Researchers (2010)	<p>The Action Plan for Researchers was developed by both the Flemish Ministry of Innovation and the Ministry of Education. It includes 20 actions with the aim of:</p> <ul style="list-style-type: none"> – Multiplying career opportunities for young people and opening up the recruitment process; – Supporting the researcher's career (working conditions, social security, training, etc.); – Promoting researcher mobility and exchange of knowledge; and – Attracting and maintaining researchers in the open international realm of research. <p>There is no formal evaluation of the Action Plan. However, most of the actions from this Action Plan have been successfully completed. The achievements include:</p> <ul style="list-style-type: none"> – The Research Foundation Flanders and all Flemish universities have been acknowledged in the HR excellence in research process, or are working towards it; – Belgium and Flanders ratified the Convention on the Recognition of Qualifications concerning Higher Education in the European Region (ETS no. 165) in 2009; – Language legislation at the universities was made more flexible; – Workshops were organised on several topics related to the Action Plan; – The new legislation on research funding has introduced gender-friendly measures for research funds at the Universities; and – Doctoral schools have received funding to support young researchers.

⁶ Belgian Science Policy Office, available at: <http://www.euraxess.be/docs/guide.pdf>

Measure	Description
Action plan on mobility (planned for 2013-2014)	In 2013, the Flemish Community published an action plan on the mobility of students: “Brains on the move” ⁷ . An action plan to improve the mobility of staff members is planned.
High-level action group “Gender at Universities” (ongoing)	To ensure that gender policy at universities is developed bottom-up, the Flemish Interuniversity Council (<i>Vlaamse Interuniversitaire Raad/VLIR</i>) set up the Gender at Universities high-level action group. The group aimed to improve the gender balance among professors, researchers and students by means of university-based gender action plans. As of January 2014, all Flemish universities had published their gender action plan.
Wallonia-Brussels Federation (FWB) and Wallonia	
The Wallonia-Brussels Partnership for Researchers⁸ (WBP) (2011)	The Governments of the Wallonia-Brussels Federation and of Wallonia in May 2011 adopted the Wallonia-Brussels Partnership for Researchers, which is the contribution of the Wallonia-Brussels Federation to the implementation of the European Charter for Researchers, the European Code of Conduct, the European Commission Partnership for Researchers, the recommendations of the Helsinki Group on Women and Science, and the key “Innovation Union” initiative of the European Union. The Partnership includes 25 actions (divided into six chapters ⁹) describing the development and implementation of new legislation/measures for the research profession. It aims to boost investments in research, and in particular in human capital and R&D personnel.

Source: Deloitte

3. Women in the research profession

Measures supporting women researchers in top-level positions

In 2010, the percentage of women grade A academic staff was 12.2% in Belgium compared with 15.4% among the Innovation Union reference group and an EU average of 19.8%¹⁰.

At Federal level, the Ministry for the Interior and Equal Opportunities together with the Centre for Equal Opportunities and Opposition to Racism, and the Federal Public Service for Diversity and Equal Opportunities promote equal opportunities.

All Flemish universities have action plans on gender equality in the research profession. These were drawn up in collaboration with the Flemish Interuniversity Council (see chapter 2 “National Strategies”). They will start the implementation of these plans in 2014.

In early 2014, the Wallonia-Brussels Federation allocated a EUR 150 000 budget to finance a “Gender contact person” (*personne de contact genre*) in each university of the Wallonia-Brussels Federation. They will be in charge of gender matters within their university. Their first mission will be to write an annual report on gender balance.

New legislation on research funding through the special research funds (valid from 1 January 2013) puts emphasis on gender balance at universities. It fosters equality in the make-up as between women and men for post-doctoral and permanent faculty positions, and encourages gender balance in administrative boards, research councils and selection juries.

⁷ <http://www.ond.vlaanderen.be/hogeronderwijs/beleid/ActieplanMobiliteit/actieplan2013.pdf>

⁸ The Wallonia-Brussels Partnership for Researchers (WBP). Available at: http://www.euraxess-cfwb.be/doc/SPW_DG06_Parteneriat_FWB_UK_BD.pdf

⁹ The six chapters included in the Wallonia-Brussels Partnership for Researchers (WBP) are:

1. Open recruiting and portability of subsidies;
2. Social security, tax system, visas and other matters falling under federal authority;
3. Employment and working conditions;
4. Training;
5. Gender equality;
6. Access to jobs after the doctorate.

¹⁰ See Figure 1 “Key indicators – Belgium”

The Wallonia-Brussels Federation has established a 'Women and Science' standing working group aimed at enforcing equality between men and women. The group will implement the Wallonia-Brussels Partnership's actions on gender equality as well as the Walloon Government's Roadmap on equal opportunities.

Measures to ensure a representative gender balance

The Flemish Government Act of 13.07.2007 includes provisions aimed at safeguarding gender balance in advisory bodies and steering committees. For instance, in the Agency for Innovation by Science and Technology, 30% of the internal scientific advisors are women.

Parental leave

The Flemish Community and the Federal authorities grant the same rights (including maternity leave) to researchers under employment contracts as all employees. For those receiving a fellowship, benefits vary depending on the institution's policy:

- Research Foundation - Flanders (FWO) fellowship beneficiaries: the mandate can be suspended during civilian service, long illness, maternity leave, parental leave or palliative care leave. (The same holds true for federal fellowships and for most research programmes.) During this time, the welfare system takes over the payment. In these cases, the mandate is extended by the length of the period of suspension. In order to allow the fellows to be competitive when applying for their next grant, fellowships suspended beyond 31 December are automatically extended to the end of the academic year; and
- Agency for Innovation by Science and Technology (IWT) doctorates: the payment of the grant is temporarily suspended during long illnesses, maternity leave or a stay abroad with alternative funding. The welfare system takes over the payment from the first day of the maternity leave.

In addition to social security provisions (including maternity leave provisions), the Walloon Government ensures that all researchers enjoy the same rights to grant extension and alternative incomes during maternity leave. The provisions are applicable to researchers with fixed-term contracts as well as grant beneficiaries.

The Wallonia-Brussels Federation's *Fonds de la Recherche scientifique-FRS-FNRS* (Fund for Scientific Research) allows for an extension of a mandate or a grant for a period equal to that of the suspension when a fixed-term mandate or a grant is suspended due to maternity, paternal or adoption leave. A replacement income is then provided by the health care mutual (as is also the case for open-ended mandates) and a complement is provided by the FRS-FNRS to compensate for the loss of income. For mobility schemes and research programmes funded by BELSPO, maternity leaves and number of children can be invoked to prolong contracts or be mentioned in the application form as extra information for the jury.

4. Open, transparent and merit-based recruitment

Recruitment system

Recruitment policies are a matter for academic autonomy, but the Federal State encourages institutions to recruit as openly as possible (the 'Charter & Code' has been endorsed by BELSPO, but not by all Federal institutions). The traditions of some institutions and linguistic laws can be seen as barriers to the openness of the recruitment process.

The Wallonia-Brussels Federation's *Fonds de la Recherche scientifique-FRS-FNRS* has reformed its recruitment system throughout the selection process. In detail, the reform:

- Eliminates the age criterion formerly applied to applicants for FRS-FNRS mandates;
- Provides pre-defined evaluation criteria that are communicated to the candidates in advance;
- Provides candidates with feedback;
- Develops an evaluation procedure for the selection of projects that involves more external experts from outside the Wallonia-Brussels Federation);
- Advertises the calls for candidates and the mechanisms for obtaining a mandate in FRS-FNRS/Associated Funds more widely on different internet portals (FRS-FNRS, EURAXESS, etc.); and
- Provides a renewed internet portal containing information of better quality on the FRS-FNRS procedures (mechanisms, calls, results, etc.)

Open recruitment in institutions

The table below presents information on open recruitment in higher education and public research institutions.

Table 3: Open recruitment in higher education and public research institutions

Do institutions in the country currently have policies to ...?	Yes/No	Description
– publish job vacancies on relevant national online platforms	Yes	Institutions publish job vacancies on relevant national online platforms.
– publish job vacancies on relevant Europe-wide online platforms (e.g. EURAXESS)	Yes	Institutions publish job vacancies on relevant Europe-wide online platforms.
– publish job vacancies in English	Yes	Institutions publish job vacancies in English on relevant Europe-wide and international online platforms.
– systematically establish selection panels	Yes	Institutions at Federal and Community level systematically establish selection panels. For permanent positions, this is overseen by Selor (http://www.selor.be). Selor is the public sector human resources agency and job portal.
– establish clear rules for the composition of selection panels (e.g. number and role of members, inclusion of foreign experts, gender balance, etc.)	Yes	Following reforms of the FRS-FNRS ¹¹ and FWO recruiting systems, institutions established clear rules for the composition of selection panels. For the Federal authority this is overseen by ‘Selor’ and the trade unions.
– publish the composition of a selection panel (obliging the recruiting institution)	Yes	Institutions at Walloon level publish the composition of selection panels. The composition is public but not specifically published for Federal selection panels.
– publish the selection criteria together with job advert	Yes	Institutions publish the selection criteria together with the job advert.
– regulate a minimum time period between vacancy publication and the deadline for applying	Yes	Institutions have a legal obligation to publish all long-term contract/permanent positions offered by the State Universities and the Federal Scientific Institutions (FSIs). The texts published in the Belgian Official Gazette become effective within 10 days. The minimum time period is not always respected.
– place the burden of proof on the employer to prove that the recruitment procedure was open and transparent	No	Institutions do not place the burden of proof on the employer to prove that the recruitment procedure was open and transparent. The procedure is monitored by ‘Selor’ and the trade unions, and (for permanent positions) goes through an administrative process.
– offer applicants the right to receive adequate feedback	Yes	Walloon institutions do not have policies in place offering applicants the right to receive adequate feedback. Such rules exist at Flemish level and for the Federal authority.
– offer applicants the right to appeal	Yes/ No	Walloon institutions do not have policies in place offering applicants the right to appeal. Such rules exist at Flemish level.

Source: Deloitte

EURAXESS Services Network

In 2013, the number of researchers posts advertised through the EURAXESS Jobs portal per thousand researchers in the public sector was 44.1 in Belgium compared with 72.3 among the Innovation Union reference group and an EU average of 43.7¹².

Information on job opportunities, social security and pension contributions, accommodation and administrative assistance is available at EURAXESS portals¹³. The Flemish Community does not have a region-

¹¹ National Fund for Scientific Research (FNRS)

¹² See Figure 1 “Key indicators – Belgium”

¹³ www.euraxess.be; www.euraxess.be/flanders; www.euraxess.be/cfwb

wide job portal. It uses the EURAXESS Jobs portal to advertise researchers' positions. The Walloon Government aims to publish all publicly-funded research jobs online on the EURAXESS portal and at www.doctorat.be¹⁴. Following the endorsement of the 'Charter & Code' by BELSPO, all vacancies in the FSIs are published on the EURAXESS Jobs portal.

5. Education and training

Measures to attract and train people to become researchers

The Belgian Federal Ministry, the Communities and the Brussels-Capital Region have created new programmes and improved existing initiatives aimed at increasing young people's interest in (natural) science and technology, with the ultimate aim of attracting them to become researchers. The table below summarises key measures implemented to achieve this objective.

Table 4: Human Resources – Key programmes and initiatives

Measure	Description
<i>Federal level</i>	
Federal Scientific Institutes (ongoing)	A dozen Federal Scientific Institutes (FSIs) have been established to become Centres of Excellence in close partnerships with Belgian universities in order to enhance the training of human resources. They take part in doctoral schools, at Belgian or EU level, in order to be more visible, to enhance their R&D potential and exchange knowledge. They have developed a register ('cadastre') of the participation of their researchers in and their partnerships with the universities. They foster researchers' outward mobility and welcome more Ph.D. students in order to become more attractive to international researchers. Inward mobility for researchers from developing countries in FSIs is also encouraged.
Legal instruments (ongoing)	Equal opportunities and access to the labour market are protected and promoted in national legislation.
Museum Night Fever in Brussels (ongoing)	This event aims to attract young people to access and to involve them in the creative use of the museums' exhibit rooms.
Researchers' Night (ongoing)	The event is organised once per year in collaboration with Belgian Universities with a view to informing and attracting (among others) young people (primary school, secondary school and higher education) to become interested in science and the research profession per se.
<i>Flemish Community</i>	
Support Programme for Young Researchers (ongoing)	<p>Since 2011, the Flemish Minister for innovation has provided a yearly sum of EUR 4 million to reach the following objectives:</p> <ul style="list-style-type: none"> – Train young researchers (doctoral schools); – Develop careers and open up career prospects; – Reinforce the international orientation of researchers' careers; and – Cooperate within Flanders. <p>In 2013, a first evaluation carried out by the Expertise Centre on R&D monitoring showed that the money had been used by the universities to reinforce their HR policy for young researchers and create more opportunities for training and career development for them. In 2013, this programme became a permanent funding programme for the universities.</p>
The Annual Science Communication Action Plan (1994-2011)	<p>From 1994-2011, the Flemish Government (the department of Economy, Science & Innovation invested approximately EUR 9 million per year (ca. EUR 7 million in 2011) in the implementation of an Annual Science Communication Action Plan. The initiative aimed to attract pupils, students and teachers into a research career by promoting science, technology and technological innovation.</p> <p>In 2012, the Annual Science Communication Action Plan was replaced by the Communication Policy Plan 2012-2014. The action plan for the stimulation of careers in STEM, a collaboration of the Ministries of Innovation and Science,</p>

¹⁴ The portal offers an online platform for doctorate holders in the Wallonia-Brussels Federation to publish their CVs. Companies and research institutions publish opportunities on this portal. Convergence and synergies between this portal and the EURAXESS jobs portal are currently encouraged

Measure	Description
	Labour and Social Economy, and Education, ¹⁵ is complementary to this plan.
Wallonia-Brussels Federation (FWB) and Wallonia	
Spring Science Season (ongoing)	The Spring Science Season activities target secondary education pupils and aim to communicate and popularise activities around science and scientific careers.
The Declaration of Community Policy (2009-2014)	The Declaration of Community Policy enhances synergies and partnerships between the Walloon Region and Brussels-Capital to promote research and innovation. For instance, it promotes doctoral schools and training for researchers working in research centres and private companies and encourages the financing of doctoral theses by companies and the private sector.
Wallonia-Brussels Partnership's action 22: Increase the number of PhDs in the research sector	Action 22 refers to the allocation of new resources to research in the context of the EU 2020 Strategy, and within the limits of budgetary resources. The objective is to maintain the quality of researchers' working conditions and job security. Additionally, support for candidates for European Research Council and European Marie Curie grants or similar grants from the National Contact Point – Fund for Scientific Research is being strengthened.
Brussels-Capital Region	
Awareness-raising actions for scientific careers (Brussels-Capital Region)	The Brussels-Capital Region dedicates part of its annual budget to measures aimed at increasing children and young people's interest in science and technology. To this end it every year finances several projects of scientific activities targeting primary or secondary education pupils. Over the last five years, it has also launched several awareness campaigns to stimulate young people's interest in scientific careers (e.g. photo campaigns and exhibitions).

Source: Deloitte

Doctoral graduates by gender

The table below shows the number of doctoral graduates in Belgium by gender as a ratio of the total population.

Table 5: Doctoral graduates by gender

Indicator	Belgium	EU Average
New doctoral graduates (ISCED 6) per 1 000 population aged 25-34 (2011)	1.5	1.7
Graduates (ISCED 6) per 1 000 of the female population aged 25-34 (2011)	1.3	1.6
Graduates (ISCED 6) per 1 000 of the male population aged 25-34 (2011)	1.7	1.8

Source: Deloitte

Data: Eurostat

Funding of doctoral candidates

The table below presents information on funding opportunities for doctoral candidates.

Table 6: Funding opportunities for doctoral candidates

Funding scheme	Description
Stipend/Grant	<p>Personal PhD grant</p> <ul style="list-style-type: none"> – Tax-free; – Full social security coverage; – Duration: maximum 48 months (2 x 2 years or 4 x 1 year)¹⁶; – Financed by universities, the Agency for Innovation by Science and Technology (IWT), the Research Foundation - Flanders (FWO) and a limited number of research institutions for the sole purpose of financing free research; – Amount of the grant is based on the salary of a university assistant. <p>Project fellowships</p> <ul style="list-style-type: none"> – Tax-free;

¹⁵ (<http://www.ewi-vlaanderen.be/sites/default/files/documents/STEM-actieplan.pdf>).

¹⁶ FRIA and FRESH grants are for 27 and 21 months respectively (<http://www2.frs-fnrs.be/>).

Funding scheme	Description
	<ul style="list-style-type: none"> – Full social security coverage; – Duration: maximum 48 months (usually 2 x 2 years); – Fellowship value: based on the salary of a university assistant.
Employment contract	<p>Research assistant (doctoral candidates and post-docs)</p> <ul style="list-style-type: none"> – Financed from the core budget of the universities; – Duration: 3 x 2 years (with the possibility of a further one-year extension), or 3 + 2 years; – At least 50% of time should be spent on doctoral research; – Other duties: assist the professor, teaching duties; – Salary scales are set by the Government. <p>Project collaborators with employment contract</p> <ul style="list-style-type: none"> – Research projects.
Other	Junior scientific categories that are not required to complete a doctorate, e.g. young researchers on short-term research projects or on contract research projects.

Source: Deloitte

Measures to increase the quality of doctoral training

The Flemish Community finances the Support Programme for Young Researchers with a yearly budget of EUR 4 million (see also chapter 7 “Collaboration between academia and industry”). The Programme targets young researchers at doctoral and postdoctoral level, providing them with training, career development incentives, and support for participation in international events and job fairs.

In the FWB, doctoral schools were created by a decree of March 31, 2004. Life-long learning initiatives are undertaken individually by universities and doctoral schools. In addition, actions 12 and 13 of the Wallonia-Brussels Partnership promote doctoral training programmes and the participation of doctoral students in international doctoral schools. The Partnership encourages the organisation of doctoral training programmes by university academies and promotes the acquisition of cross-cutting competences by researchers¹⁷. The Partnership is also examining the procedures for support to university teams that coordinate and/or participate in international doctoral schools or international networks of doctoral schools.

Skills agenda for researchers

The Flemish government’s Support Programme for Young Researchers (see above) aims to train young researchers (via doctoral schools), guide them throughout their career and reinforce their international orientation. In the Wallonia-Brussels Federation, measures to improve researchers’ employment skills and competencies are taken individually by the universities and doctoral schools.

6. Working conditions

Measures to improve researchers’ funding opportunities

‘Back to Belgium’ grants for researchers and non-EU postdoc fellowships introduced by the federal government as well as the Research Foundation - Flanders and the Fund for Scientific Research grants are a source of funding for researchers (see chapter 8 “Mobility and international attractiveness”).

Under 2012 funding agreements between the Flemish government (Ministry of Innovation) and three strategic Research Centres (IMEC, VIB (*Vlaams Instituut voor Biotechnologie*) and iMINDS V.Z.W. (formerly IBBT V.Z.W.)), the research centre should:

- Have a coherent HR policy (on recruitment, career development, salary, training and working conditions);
- Have a non-discrimination policy; and
- Respect the principles of the ‘Charter & Code’ for recruitment.

The agreements contain details of the funding envisaged as well as the duties and rights of the beneficiaries (the three centres). They were signed in March (IMEC), April (VIB) and May (iMINDS V.Z.W.) 2012. The total budget foreseen for 2014 is some EUR 168 million.

¹⁷ Skills that are not linked with the scientific discipline they are enrolled in.

Remuneration

Since 2003, the cost of researchers' salaries has been reduced for the employer via a subsidy (in fact, a reduction in the employer's social charges). This applies to all universities, colleges and research centres, public and private non-profit institutions and companies (including research personnel in Young Innovative Companies). The reduction amounts to approximately 24% of the gross wage¹⁸.

For further information, see the country profile on remuneration of researchers from the MORE2 study on the EURAXESS website¹⁹.

Researcher's Statute

The Flemish Community does not provide a universal researchers' statute per se. The Act on the universities in the Flemish Community (University Act, 1991)²⁰ provides a 'statute' for all personnel as well as university assistants. Personnel regulations of the Agency for Innovation by Science and Technology (IWT), Research Foundation - Flanders (FWO) and universities set the rules, obligations and rights for their grantees.

In the Wallonia-Brussels Federation, the leading research institutions/universities have implemented the 'European Charter for Researchers' and the 'Code of Conduct for the Recruitment of Researchers' as well as applying the Scientific Visa.

In 2012, a working group was established in Flanders to examine the Statute of Researchers & Attractive Employment Conditions. The group produced a report with proposed actions for the higher education negotiation committee (*Vlaams onderhandelingscomité voor het Hoger Onderwijs-VOC*) in the autumn of 2012. The discussion focused, among others, on:

- Social security and job prospects for researchers with short-term employment;
- Grants or salaries; and
- Equal treatment and payment of doctoral researchers.

The group concluded that:

- Given that in Belgium grant holders are fully covered by social security, the statute of researchers in terms of his/her duties and rights (e.g. time to spend on research, etc.) seems to be very clear. The doctoral candidates also have sufficient means of representation in the labour market;
- The possibility of offering a grant to doctoral candidates is a valuable means of financing that should be maintained;
- Wages and benefits should gradually be harmonised among various profiles of doctoral researchers;
- Supervisor professors should try to reduce the workload, adopt a coaching approach and support researchers in their career planning;
- The institutions should continue to implement a specific and transparent career policy for postdoctoral researchers, allow for career tracks and support career guidance;
- The recruitment of researchers should be consistent with the principles of the European 'Charter & Code'. Recruiters should pay attention to qualitative, rather than quantitative aspects of the *curricula vitae*; and
- A slight differentiation in the wages of senior professors should be feasible.

The higher education negotiation committee incorporated some of these recommendations in the new collective agreement for higher education, concluded on December 13, 2013. This provides for acceptance of the European Framework for Research Careers, the implementation of the HRS4R, the harmonisation of working conditions of all doctoral candidates, the creation of a charter for doctoral researchers, and a study into publication pressure and an investigation of solutions.

¹⁸ Information is available at http://www.belspo.be/belspo/fisc/rech/univ_fr.stm (in French and Dutch)

¹⁹ <http://ec.europa.eu/euraxess/index.cfm/services/researchPolicies>

²⁰ *Decreet van 12.06.1991 betreffende de universiteiten in de Vlaamse Gemeenschap*

‘European Charter for Researchers’ & ‘Code of Conduct for the Recruitment of Researchers’

At Federal level, the BELSPO²¹ endorsed the ‘Charter & Code’ in 2011.

All strategic research centres and universities in Flanders have acknowledged and implemented the ‘Charter & Code’ principles. Most are actively implementing the principles while FWO, IWT, all universities and the life sciences research institute in Flanders (VIB) have either received the HR Excellence logo or are working towards it.

In the Wallonia-Brussels Federation, the EURAXESS Rights Group (made up of university representatives), the Fund for Scientific Research (FRS-FNRS) and the Walloon administration have agreed on a communication plan for the implementation of the ‘Charter & Code’. In addition, higher education institutions (via the *CGHE - Conseil général des Hautes Ecoles* and the *Interface ADISIF - Entreprises*, a service centre for research centres and higher education institutions) and research centres (via *accord-wallonie*, an association of research centres) have been invited to participate in the initiative.

Five universities of the Wallonia-Brussels Federation (UCL (Louvain), ULB (Université Libre de Bruxelles), ULG (Liège), UMONS (Mons), Unamur (Namur) have already obtained the HR Excellence in Research logo demonstrates their commitment to implement the ‘Charter & Code’ principles in their HR strategies (policies and practices). It also implies their full commitment to develop a more transparent system with regard to the research job opportunities and the recruitment selection process. The procedure is under way for F.R.S.-FNRS, and FUSL *Facultés universitaires Saint-Louis*. For example, in 2013 the FUNDP (*Facultés universitaires Notre-Dame de la Paix*) will implement new measures relating to open recruitment, such as better selection and recruitment procedures, non-discriminatory gender policies, transparent research job offers, work-life balance, equal access to salaries and fostering job stability.

Autonomy of institutions

Flemish universities enjoy autonomy in their human resource policies and the differentiation of their personnel’s salaries – subject to taking into account the general salary levels set by the Flemish Government. One percent of personnel expenditure can be spent on topping up researchers’ salaries.

Walloon institutions are also fully autonomous in their human resources’ management. However, pay scales for the University of Liège and the University of Mons are set statutorily.

The FSIs retain a certain degree of autonomy in HR policies, roadmap determination, museum activities, etc. Linguistic Laws apply for permanent positions. Specific wage scales are used in FSI's for scientific personnel (determined by Law).

Career development

The possibility of a tenure track system for researchers studying at Flemish universities was inserted in the University Act in 2008. The Flemish universities can offer tenure tracks with any type of funding. In parallel, the Flemish Government provides a specific yearly budget for tenure track fellows. The budget was EUR 9 234 000 million in 2013. In the Wallonia-Brussels Federation, post-doc experience is a prerequisite before a researcher is appointed to a temporary position (e.g. *Chargé de cours*, i.e. lecturer). This temporary position can then lead (after around three years) to a stable researcher or professor position.

Shift from core to project-based funding

Following a shift from core to project-based funding, universities in the Wallonia-Brussels Federation are entitled to draw on public funds to pay the researchers’ salaries between two short-term research projects.

Social security benefits (sickness, unemployment, and old-age)

Under the Belgian social security system, researchers (both doctoral candidates and post-doctorate researchers) are covered by full social security benefits, regardless of their nationality, as they are considered to be publicly funded researchers. The Belgian social security ‘general scheme’ covers sickness, maternity,

²¹ *Federaal Wetenschapsbeleid/Politique scientifique fédérale*

disability, pensions, unemployment, accidents, occupational diseases and family benefits. It is immaterial whether the researcher has an employment contract or receives a stipend. The general scheme applies to nationals of countries of the European Economic Area (EEA) and Switzerland, or a country tied to Belgium by a bilateral agreement on social security²². All other scholarship recipients are entitled to the coverage under a limited scheme²³.

7. Collaboration between academia and industry

The following table summarises programmes designed to develop (more) partnerships between industry and academia, and to foster doctoral training in cooperation with industry.

Table 7: Collaboration between academia and industry

Measure	Description
Federal level	
The Federal State has no competence to promote partnerships between academia and industry, except for contracts with the European Space Agency.	
Flemish Community	
Agency for Innovation by Science and Technology (IWT) Innovation Mandates (ongoing)	IWT Innovation mandates are set up with the objective of connecting the academic and the industrial world, and stimulating postdoctoral researchers to improve their skills in maximising the value of their research and to develop their careers, taking a step towards industry. Inter-sectoral mobility is encouraged during the fellowship. There are innovation mandates leading to the establishment of a spin-off company (so-called spin-off mandates) and those involving cooperation with existing companies. The annual budget is some EUR 2-3 million. Approximately 40 mandates are granted yearly.
Baekeland Programme (ongoing)	The Baekeland programme funds doctoral projects carried out at a Flemish university in close cooperation with a company. The PhD candidate is supervised jointly by an academic and an industrial supervisor, and spends a considerable amount of time at the company. Projects are co-funded by the company. The orientation of the research project should be strategic.
The Support Programme for Young Researchers (ongoing)	The Programme provides a yearly budget of EUR 4 million to Flemish universities in order to provide a support framework for young researchers. (See also chapter 5 "Education and training".)
Wallonia-Brussels Federation (FWB) and Wallonia	
BEWARE FELLOWSHIPS	The BEWARE FELLOWSHIP (Belgium Wallonia Research) Academia programme co-financed by the COFUND programme of the European Union (FP7 – Marie Curie Actions) funds inwardly mobile researchers on projects involving technology transfer between a university and a company (see chapter 8 "Mobility and international attractiveness").
DOCTIRIS Programme (ongoing)	The DOCTIRIS Programme encourages young researchers to carry out their PhD in collaboration with a Brussels-based enterprise. The candidates must spend at least 50% of their time working in the enterprise and are supervised by the higher education institution and by the host company.
FIRST INTERNATIONAL Programme (ongoing)	The first call was launched in September 2012 and the selection of the projects took place in March 2013. A second call was launched in October 2013. This programme aims to support and develop partnerships between Walloon companies and the research units of universities and other higher education institutions through the development and the validation of new products, processes or services. The five themes for this new industrial research programme are: sustainable development, energy, technologies, health and healthy ageing. Through industrial research that will be funded for three years at most, the young researcher (at Master or Doctorate level) is expected to disseminate emerging technologies within the Walloon company which co-finances the project. For his/her part, the researcher will benefit from

²² Belgium has concluded agreements on social security with several countries. For more information, see:

https://www.socialsecurity.be/CMS/en/coming_to_belgium/content/coming_to_belgium/themas/spfssfodsz/FODSZ_Convention.xml

²³ For more information, please see: <http://www.coming2belgium.be/>

Measure	Description
	experience of an international scientific partnership and mobility through a traineeship of at least six months within a foreign research organisation. It is hoped that the researcher will be able to pursue a career within the industry co-financing the project. A selection committee ranks the proposals on the following criteria: academic quality, technological quality, sustainable development and maximisation of industrial value, training of the researcher. The co-funding rate is 10% for SME's and 25% for major companies.
FIRST Spin-off Programme (ongoing)	<p>The overall objectives of the FIRST Spin-off Programme are to:</p> <ul style="list-style-type: none"> – Increase the scientific and technological potential of university research units by undertaking research likely to have a positive impact on the economic and social development of the region; – Train future managers of companies in emerging technologies as well as the techniques for creating and managing industrial activities; – Encourage university researchers to study the conditions for industrial and commercial exploitation of their research results and if possible create a spin-off in the Walloon Region. <p>FIRST Spin-off grants support projects designed to develop a new product, process or service, and carry out a technical market feasibility study for the exploitation of the results and draw up a business plan, with the general goal of launching a spin-off in Wallonia.</p>
Marshall Plan 2.Green (2009-2014)	<p>The objective of the Marshall Plan 2.Green is to encourage enterprise competitiveness and attractiveness and develop synergies with foreign investors. Its five priority axes are:</p> <ul style="list-style-type: none"> – Create competitiveness clusters; – Stimulate the creation of activities; – Reduce and remove some taxes on companies at local level; – Promote research and innovation, in close linkage with enterprises; – Improve the skills of the workforce.
PRODOC Programme (2007-2013)	<p>The objective of the Programme is to promote encounters between doctoral candidates, young researchers and economic players via cross-border events, such as the <i>Doctoriales franco-belges</i> and job forums, and foster the employability of young researchers and PhD graduates outside academia. Thanks to the participation of the <i>Objectif Recherche</i> association as well as the Wallonia-Brussels and Louvain Academies, this project will cover a majority of the doctorate holders who acquired their doctoral training in the French-speaking Community.</p>
Spin-off in Brussels Programme (SOIB Programme) (ongoing)	<p>The SOIB programme aims to increase the number of spin-offs and spin-outs in the Brussels Region. To this end, it finances projects targeting the economic exploitation of research results, mainly through the creation of new marketable products, processes or services. Each project must lead to creation of a new enterprise established in the Region. The Programme's main objectives are:</p> <ul style="list-style-type: none"> - Encourage research exploitation and entrepreneurial processes in universities; - Reduce the burden of risk for the researcher/entrepreneur; - Facilitate researchers' career change by financing business and management training; and - Ensure the continued existence of the new entity after the end of the subsidy period.

Source: Deloitte

In addition, as part of Marshall 2.Green (2009-2014), the Wallonia-Brussels Federation, promotes the recognition of the years preparing for a doctorate as relevant job experience in the public sector (in French-speaking Belgium), so that these years can be taken into account in the salary scale of the young civil servants/doctorate holders. This proposal has been approved by the governments of Wallonia and the Wallonia-Brussels Federation and is under the responsibility of the Minister of Public Service.

8. Mobility and international attractiveness

In 2011, the percentage of doctoral candidates (ISCED 6) who were citizens of another EU-27 Member State was 14.2% in Belgium compared with 18.4% among the Innovation Union reference group and an EU average of 7.7%²⁴. In the same year, the percentage of non-EU doctoral candidates as a percentage of all doctoral candidates was 21.0% in Belgium compared with 16.9% among the Innovation Union reference group and an EU average of 24.2%²⁵.

Measures aimed at attracting and retaining ‘leading’ national, EU and third country researchers

The Back to Belgium grants and the post-doc fellowships of the federal government as well as the Methusalem and Odysseus Programmes of the Flemish community and the Ulysses Programme of Wallonia-Brussels Federation target talented researchers to come/remain in Belgium and perform their research activities.

Inward mobility (funding)

The table below summarises the funding measures to support researchers’ inward mobility.

Table 8: Measures supporting researchers’ inward mobility

Measure	Description
Federal level	
Back to Belgium grants (ongoing)	These grants are part of an effort to promote the ERA. They are designed to promote the reintegration (and long-term stay) and use of the skills acquired during a post-doc stay abroad of highly qualified researchers (Belgians, or foreigners who have stayed at least three years in Belgium for studies), who have been working in another country for at least two years.
Non-EU post-doc fellowships (ongoing)	This 30-year old initiative aims at creating links between institutions (abroad and in Belgium) by affording fellowships of up to 18 months to approximately 25 non-EU researchers per year. The researcher receives a stipend; all social security expenses are covered by BELSPO.
Flemish Community	
Methusalem Programme (ongoing)	The Methusalem Programme targets top scientists who are already active in Flemish universities and provides them with a substantial amount of structural funding for their laboratories on the basis of proven merit. By providing senior Flemish researchers at universities with structural support, the Programme supports them in their efforts to lift their research groups to international quality standards. The structural support is designed to allow these researchers and their research groups to become leading authorities in their field.
Odysseus Programme (ongoing)	The Odysseus Programme is intended to offer start-up funding to a number of outstanding researchers, international as well as Belgian, who have built up a career outside Flanders, in order to develop a research group within a Flemish university or to set up a research line and become progressively more involved in the Flemish research establishment. The procedure consists of nominations by one or more Flemish universities and quality control by the FWO, which also monitors the finances. The total budget is EUR 12 million.
Wallonia-Brussels Federation (FWB) and Wallonia	
BEWARE FELLOWSHIPS Industry	The BEWARE FELLOWSHIP (Belgium Wallonia Research) programmes are co-financed by the COFUND programme of the European Union (FP7 – Marie Curie Actions). The Industry programme will grant 57 mandates over 5 years. These will enable SMEs or <i>accredited research</i> centres to benefit from the expertise of highly qualified foreign researchers who have spent fewer than 12 months in the previous three years (irrespective of whether they are Belgian or foreign nationals) to encourage the innovation process within the Walloon host. The first call for proposals was launched on January 21 st , 2014.
BEWARE FELLOWSHIPS Academia	The BEWARE FELLOWSHIP (Belgium Wallonia Research) programmes are co-financed by the COFUND programme of the European Union (FP7 – Marie Curie Actions). The Academia programme focuses on technology transfer. The project also runs over five years. A total of 80 mandates will be available for researchers who have spent fewer than 12 months in the previous three years (irrespective of whether they are Belgian or foreign nationals) to spend time at a French-speaking University, in partnership with a Walloon company. Over the period covered by the mandate (18-36 months), six months must be spent in the company. The first call for proposals was launched in March 2014.
Ulysses Mobility	The objective of the Ulysses Programme is to encourage highly qualified Belgian or foreign

²⁴ See Figure 1 “Key indicators – Belgium”

²⁵ Ibid

Measure	Description
(Mobilité Ulysse) Programme (ongoing)	researchers currently working abroad to develop their career at a university in the French-speaking Community of Belgium. The applicant should have the qualifications needed to lead a research team, have international scientific recognition and have been living abroad for at least five years at the time of the application. The mandate is granted for a maximum period of three years via a first mandate of two years, and a possible extension of one year.
Brussels-Capital Region	
Brains (Back) to Brussels (ongoing)	The objective of the BB2B programme is to attract foreign researchers and Belgian researchers currently settled abroad. It offers two kinds of support, one for short-term research projects in a Brussels-based higher education institution and the other for long-term projects for researchers who ultimately plan to settle down in Brussels. While the first option is only accessible to highly qualified researchers, the second option is available to any researcher wishing to plan a career in Brussels. The host institution is therefore strongly involved in the measure and must commit itself to offer a long-lasting position to the researcher.

Source: Deloitte

Outbound mobility

The table below presents funding opportunities for researchers to spend some time in another country.

Table 9: Measures supporting researchers' outbound mobility

Measure	Description
Flemish Community	
The Research Foundation - Flanders (FWO)	The FWO encourages researcher mobility by providing short as well as long-stay grants (five weeks to twelve months).
Wallonia-Brussels Federation (FWB) and Wallonia	
The Fund for Scientific Research (FRS-FNRS) Grants	The FRS-FNRS provides a range of grants supporting researchers' mobility at different stages of their career.
Wallonie-Bruxelles International²⁶	Among its funding schemes, Wallonie-Bruxelles International provides specific grants to sponsor research activities outside Belgium.

Source: Deloitte

Promotion of 'dual careers'

In the context of Back to Belgium grants and the post-doc fellowships of the Federal authority, requests in relation to dual careers are taken into consideration (and most of the time accepted) if the aim is improving the researcher's skills and enhancing the research project).

In addition, specific attention is now paid within Belspo's Management Plan to federal researchers (in FSI's, namely) who have an affiliation with a university (in Belgium or abroad). The plan is to harmonise their situation and make the arrangements more systematic.

Portability of national grants

The Flemish Community allows the portability of grants for short to medium-long stays in other countries during the mandate. The grants cannot be completely transferred abroad. The grant and fellowship beneficiary should be linked to a Flemish university, most often through their supervisor. The FWB does not permit portability of grants to other EU countries.

International portability is possible for the Back to Belgium grants for limited periods of time (up to three months). The fact that the Back to Belgium grant and the postdoc fellowship are connected both to the researcher and the host institution makes it difficult to transfer them to other researchers or host institutions.

²⁶ Wallonia-Brussels International (WBI) is a public sector entity in charge of the international relations of the Wallonia-Brussels Region. It is the instrument of international policy of the French-speaking Community of Belgium and the French Community Commission of Brussels Region

Access to cross-border grants

For the Flemish Community, a candidate of Belgian nationality, or from another EU Member State or the EEA, should possess a university degree in order to enrol as a PhD or final year student. Non-EEA candidates must have a basic degree from one of the Member States of the EEA. The candidate must submit proof to allow the university to grant him/her permission to do a PhD thesis. The candidate should furthermore have a link with a Flemish university, but does not necessarily have to reside in Belgium. For the FWB, national grants or fellowships are open to non-residents. They only have either to live in Belgium or promote collaboration between Belgium and their home country.