

Policies and initiatives to promote
career options for doctoral and
postdoctoral scientists

Country Note: Belgium



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Preface

This Country Note for Belgium was prepared for a project on “policies and initiatives to promote career options and pathways for doctoral and postdoctoral scientists”, which is part of the programme of work of the OECD Global Science Forum (GSF), Science and Technology Policy Division, Directorate for Science, Technology and Innovation. The GSF project is overseen by an international expert group and is expected to be completed in mid-2023. (see <https://www.oecd.org/science/inno/global-science-forum.htm> for further information on GSF)

Early in the development of the GSF project, the expert group members of the 14 participating countries, including the author, reached an agreement on the conceptual framework for the work, identified the major policy issues for investigation, and finalised a country note template (see [APPENDIX: Country note template](#)) to collect information on the situation in different national contexts. This note follows the structure of the provided template.

The author would like to thank Anneleen Mortier and Noëmi Debacker from ECOOM UGent who provided the data on doctoral and postdoctoral scientists for the Flemish community, as well as Véronique Halloin, Frederik Van Acker, Raphaël Beck, Danielle Gilliot, Nele Robberechts, Gentiane Haesbroeck, Lien Wille, Audrey Ségerie, Christel Ameryckx and Baptiste Dethier who provided valuable feedback and information for the preparation of this note.

The views expressed in this note are those of the author and do not necessarily reflect the opinions of the Belgian authorities, the OECD, and the F.R.S.-FNRS. This document may be freely used, provided that full authorship credit is given. Please address questions and comments to: neda.bebiroglu@frs-fnrs.be

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COUNTRY NOTE: BELGIUM

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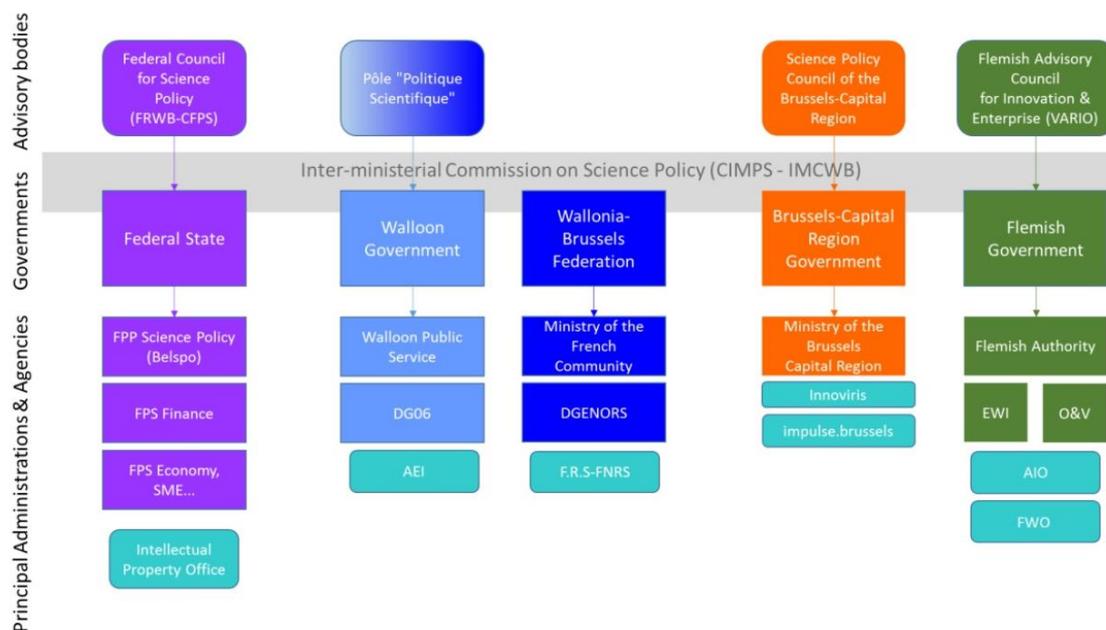
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A. NATIONAL CONTEXT: INTRODUCTION

Belgium is a federal state. As such, scientific research is a competence shared by the Federal State, the Regions (the Flemish region; 6,629,143 inhabitants), the Brussels-Capital region; 1,218,255 inhabitants), and the Walloon region; 3,645,243 inhabitants)¹ and the Communities (the Flemish Community, the French Community, and the German community). The figure below describes the Research and Innovation (R & I) governance in Belgium² (Figure 1).

Figure 1. The R&I governance in Belgium³



Source: Kelchtermans, S, and Robledo-Bottcher N, RIO Country Report 2017: Belgium, EUR 29152 EN, Publications Office of the European Union, Luxembourg, 2018, ISBN 978-92-79-81195-1, doi:10.2760/066103, JRC111253.

The Federal Government oversees the federal scientific institutes, intellectual property (IP) law, standardization, fundamental metrology, nuclear energy research, polar research, defence research, public health research, corporate taxation, employment legislation, social security, and the R&D tax credit⁴. The communities are responsible for education and fundamental research at universities and higher education establishments as well as the scientific institutes. The regions are competent in economically oriented research, technological development, and innovation. They cover areas such as applied industrial research related to the economy,

¹These numbers provided by Statbel are based on population statistics of January 1st, 2021: <https://statbel.fgov.be/en/themes/population/structure-population#:~:text=On%201%20January%202021%2C%20Belgium%20had%201%2C521%2C238%20legal%20inhabitants%20according,Statbel%2C%20the%20Belgian%20statistical%20office>

² Spithoven, A. (Ed.). (2013). Annual report on science and technology indicators for Belgium 2013. Annual report on science and technology indicators for Belgium. Brussels, Belgium

³ Please note that DGENORS is now named DGESVR.

⁴ Kelchtermans, S, and Robledo-Bottcher N, RIO Country Report 2017: Belgium, EUR 29152 EN, Publications Office of the European Union, Luxembourg, 2018, ISBN 978-92-79-81195-1, doi:10.2760/066103, JRC111253.



energy policy, public works, telecommunications, environment, transport, water, preservation of nature, land, agriculture, trade, employment.⁵ Access to finance is a competence of the regions and communities. The funding schemes are therefore sometimes complex, with different levels of power that fund different forms of research, even if the boundaries between them (basic, strategic, and applied research) are sometimes vague.⁶

1. Research funding models

➤ The French community

In the French Community of Belgium, basic and applied research is mainly carried out within six universities, namely, Université catholique de Louvain (UCLouvain), Université libre de Bruxelles (ULB), Université de Liège (ULiège), Université de Mons (UMons), Université de Namur (UNamur), Université Saint-Louis - Bruxelles (USL-B), and three university hospitals linked to them, namely, le CHU de Liège (ULiège), les Cliniques universitaires Saint-Luc (UCLouvain), l'hôpital Erasme (ULB). Since 2019, university colleges⁷ can also apply for applied research funding through the FRHE action (Financement de la Recherche en Hautes Écoles).⁸

The policy is implemented by the agencies whereas their monitoring and evaluation is done within the administration of the respective governments: the directorate DGO6 for the public services of the Walloon Region and DGESVR (Direction générale de l'Enseignement supérieur, de l'Enseignement tout au long de la vie et de la Recherche scientifique), formerly known as DGENORS, for the French Community, respectively. In this context, the General Administration of Education of the Ministry of the French Community supports research for two major players: universities and Fonds de la Recherche Scientifique-FNRS (F.R.S.-FNRS). F.R.S.-FNRS is a strategic and fundamental research funding agency, with the status of a private foundation with public utility. This support is provided through five funding lines:

- operating allowance to universities, 25% of which is estimated to be devoted to research activities,
- subsidies granted to the F.R.S.-FNRS,
- Special Research Funds (FSR) allocated to universities,
- Concerted Research Actions (ARC) allocated to universities,
- And various subsidies granted directly to researchers or teams for research activities and the dissemination of scientific knowledge, or to institutions other than universities or the F.R.S.-FNRS (e.g., The Royal Academy of Sciences, Letters and of Fine Arts of Belgium).⁹

Since 1996, the Rectors' Conference, French Community of Belgium (CRef) has been publishing yearly statistics on the academic and scientific staff as well as the student population of the French-speaking universities of Belgium. These statistics are available online.¹⁰

⁵ Belgian Science Policy Office (2010). Belgian Report on Science, Technology and Innovation 2010, BELSPO, Brussels, Belgium

⁶F.R.S.-FNRS (2019). Plan stratégique. Phare 20.25. https://www.frs-fnrs.be/docs/FRS-FNRS_PHARE_2025.pdf

⁷ University colleges are non-university institutions that offer vocational training. There are 19 university colleges in the French Community. University colleges in the French community cannot offer doctoral training nor doctoral degrees.

⁸ <http://www.recherchescientifique.be/index.php?id=2190>

⁹ <https://statistiques.cfwb.be/recherche-scientifique/>

¹⁰ <http://www.cref.be/annuaire/>



➤ **The Flemish community**

The Flemish higher education system is a binary system, consisting of 18 publicly funded higher education institutions: five universities, and 13 small and medium sized university colleges, also known as universities of applied sciences (and arts)¹¹.

- Universities are research intensive institutions, offering academic bachelor's degrees, master's degrees, advanced master's degrees¹², PhD's, and postgraduate certificates.
- Universities of applied sciences (and arts) are higher education institutions with a strong practice-based focus, offering associate degrees, professional bachelor's degrees, advanced bachelor's degrees¹³, and postgraduate certificates.
 - The schools of arts are integrated in the universities of applied sciences and arts. Beside professional bachelor's degrees, schools of arts also offer academic bachelor's degrees, master's degrees, advanced master's degrees, and PhDs.
 - The Antwerp Maritime Academy offers professional as well as academic bachelor's degrees, master's degrees, and PhDs.

There are four funding sources for academic research in Flanders: non-competitive government funding, competitive government funding, public and private funding for applied research and finally private funding for academic services.

The first source of public funding is the department of education (Departement Onderwijs en Vorming¹⁴). Part of this funding supports research at the Flemish universities, a major part supports education. The second source of public funding is the department of economy, science, and innovation. On the one hand, they provide the largest part of Research Foundation Flanders' (FWO) funding (mostly inter-university project-based competition). On the other hand, they provide the so-called the Bijzonder Onderzoeksfonds (BOF, Special Research Fund), which are funds allocated directly to the universities, based on a competitive allocation key.

2. Budgetary pressures in Belgium

➤ **Public funding to universities in the French Community**

The number of undergraduate and graduate students in the French-speaking universities of Belgium has been steadily increasing.¹⁵ Since the budget allocated to universities did not match this increase, the annual endowment received per student dropped gradually (Figure 2).

¹¹ <https://www.studyinlanders.be/higher-education-in-flanders>

¹² An advanced master's programme involves a broadening of the knowledge of a certain study field. A master's degree is required for admission to an advanced master's programme.

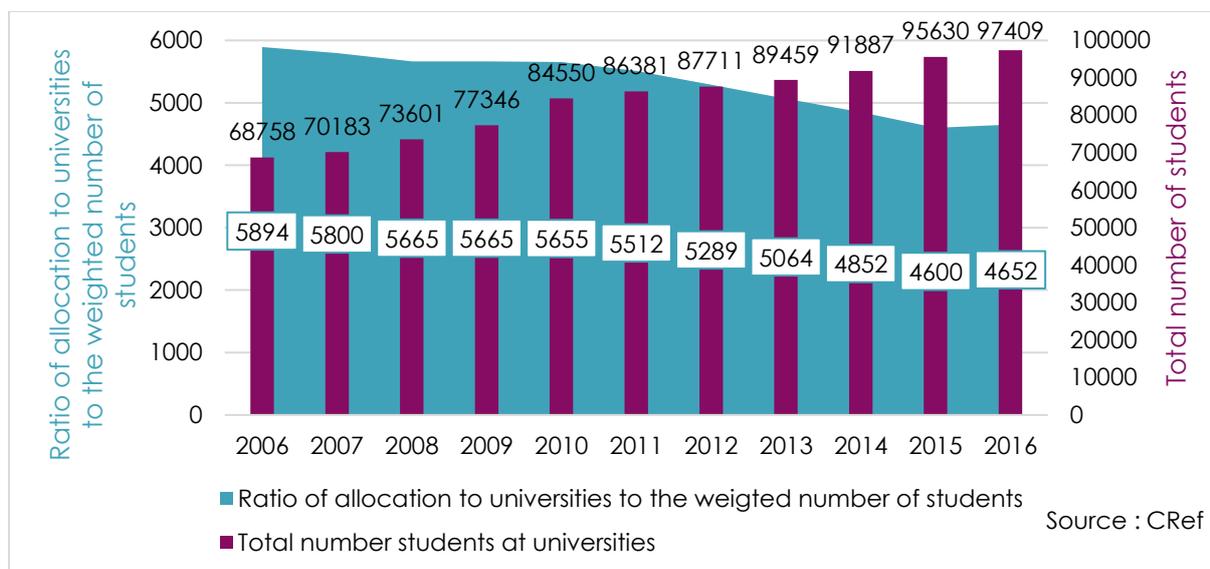
¹³ Those students who already hold a Bachelor's degree may be admitted to advanced bachelor programmes to complement their degree with more specialized knowledge in their field.

¹⁴ <https://onderwijs.vlaanderen.be/nl/over-onderwijs-en-voorming/departement-onderwijs-en-voorming>

¹⁵ CRef (2018). Mémoire en perspective des élections législatives de 2019. http://www.cref.be/communication/20181204_Memorandum_CREF_2018.pdf



Figure 2. The number of students in the French-speaking universities of Belgium and the ratio of allocation to universities to the weighted number of students between 2006 and 2016



➤ **Public funding to universities in the Flemish Community**

As can be seen in *Table 1*, public funding for Flemish universities has grown consistently since 2008 with the exception of 2010 and 2016¹⁶.

Table 1. Total public funding to universities in the Flemish community (2008-2018)

Item	Total public funding (EUR) ¹	Total public funding as percentage of GDP ²	Inflation rate ³	Student numbers ⁴	Staff numbers ⁵
Sources	Flemish Interuniversity Council	Eurostat (for GDP at market prices)	Eurostat	Flemish Interuniversity Council	Flemish Interuniversity Council
2008	1.190.218.607 c	N/A	4,5%	95.684 c	19.771 c
2009	1.247.052.870 c	N/A	0%	102.366 c	20.787 c
2010	1.252.044.500 c	N/A	2,3%	107.488 c	21.111 c
2011	1.303.362.189 c	N/A	3,4%	112.030 c	21.444 c
2012	1.374.623.095 c	N/A	2,6%	115.514 c	22.117 c
2013	1.394.656.455 c	N/A	1,2%	145.329 c	24.681 c
2014	1.574.912.095 c	N/A	0,5%	146.825 c	25.003 c
2015	1.602.763.369 c	N/A	0,6%	145.681 c	25.120 c
2016	1.598.850.897 c	N/A	1,8%	145.891 c	25.442 c
2017	1.672.427.124 c	N/A	2,2%	142.439 c	25.905
2018	1.784.361.277	N/A	2,3%	N/A	N/A

¹⁶ <https://eua.eu/downloads/publications/pfo%20country%20sheets.pdf>



Source: European University Association EUA. (2019). Public Funding Observatory - Country sheets. Retrieved from <https://eua.eu/downloads/publications/pfo%20country%20sheets.pdf>

In 2008, a new financing system for the whole of higher education (university colleges and universities) was introduced (decree of 14 March 2008 concerning the financing of the operations of the Flemish university colleges and universities). The system was adapted by the decree of 13 July 2012 on the integration of academic programmes in the universities. It was decided to implement a model of sub-budgets for the various types of education¹⁷:

- A fixed education lump sum payment for the university colleges and universities,
- A variable education part for professional programmes offered by the university colleges
- A variable education part for academic-oriented programmes offered by the university colleges,
- A variable education part for academic-oriented programmes offered by the universities,
- A research lump sum payment for the universities,
- A variable research part for the universities.

From budget year 2014 onwards, the fixed education lump sum payment is divided among the university colleges, the schools of arts, and the universities. Institutions are allocated operational resources in the form of a 'lump sum'. They decide autonomously how these resources are distributed and must draw up rules in this regard. However, they are bound by a minimum number of decree stipulations, e.g., regarding the recruitment and appointment of staff.

➤ **Public funding to Fonds de la Recherche Scientifique – FNRS**

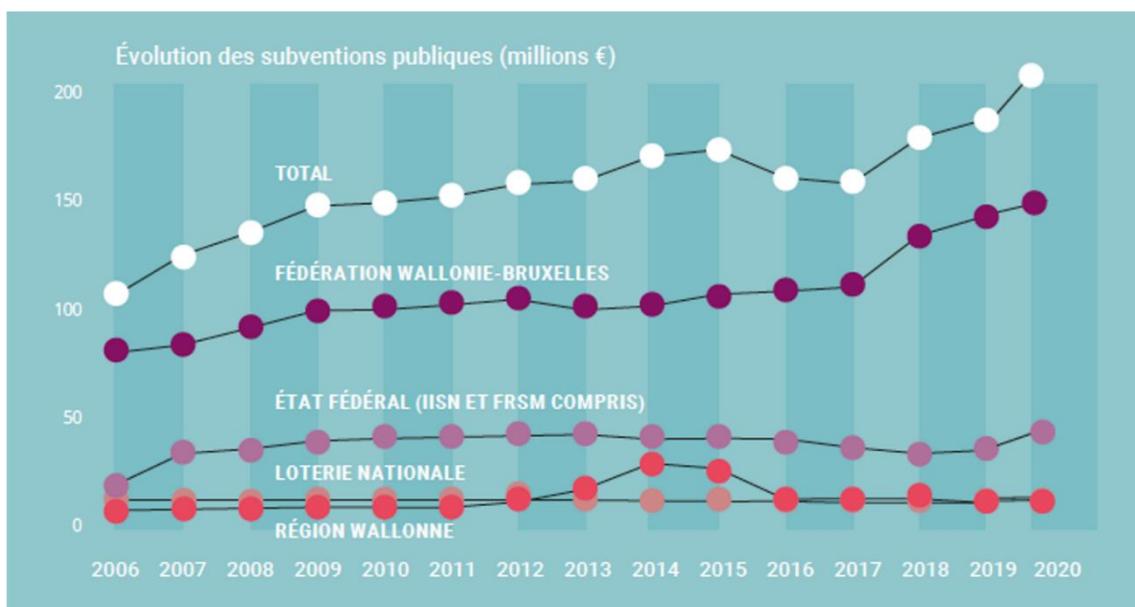
Public funding allocated to F.R.S.–FNRS includes funding from different sources: the French Community, the federal state (including Interuniversity Institute of Nuclear Sciences and Fund for Medical Scientific Research), the Walloon Region, and the National Lottery. A quick look at the evaluation of the public funding allocated to F.R.S.–FNRS between 2017 and 2020 indicates that the public funding has been slowly increasing and for the first time has exceeded 200 million €¹⁸ in 2020 (Figure 3).

¹⁷ <https://eurydice.eacea.ec.europa.eu/>

¹⁸F.R.S.–FNRS (2021). Rapport d'activités FNRS 2020. <https://www.fnrs2020.be/>



Figure 3. Evolution of public funding to F.R.S.-FNRS between 2006 and 2020



However, a closer look indicates that this increase is closely related to the increase in the budget from the French community. There is a trend of stagnation from other sources¹⁹, including the subsidies from the federal state, from the National Lottery and Walloon Region.

- At the federal level, particularly the abolition of the "Employment Plan" with an annual budget of 6M € has impacted postdoctoral researchers since it ensured the salary of over 80 postdoctoral researchers. The federal subsidy to the Fund for Medical Scientific Research (FRSM) has been removed retroactively starting from 2017.
- The subsidies granted by the National Lottery have undergone a reduction of 13% between 2014 and 2019.
- Subsidies from the Walloon Region, despite an increase between 2011 and 2014, have rapidly declined after 2014 and have stagnated until 2021. It is important to note that in 2021, the Walloon region has decided to double the WELBIO budget (strategic fundamental research in life sciences)²⁰ and bring it to 15M € annually.

At the Wallonia-Brussels Federation level, the budget has been increasing and the funding to F.R.S.-FNRS is protected by a decree. However, the level of public funding is considered insufficient for F.R.S.-FNRS in relation to the large number of applications. Between 2015 and 2020, the number of applicants for postdoctoral fellowships has fluctuated between 400 and 500 annually, with success rates that are around 20%, which results in the rejection of excellent researchers.

➤ Public funding to FWO²¹

In the period 2012-2018²², the FWO went through a thorough reorganisation. New policy structures were introduced in 2016 and new programs were added such as strategic basic research (SBO), strategic basic research doctoral grant, applied biomedical research and research infrastructure. Since 2016, FWO has been working in accordance with the financial rules of the Flemish government, whereby a division has been made between commitment

¹⁹ F.R.S.-FNRS(2019). Plan stratégique. Phare 20.25. https://www.frs-fnrs.be/docs/FRS-FNRS_PHARE_2025.pdf

²⁰ <https://www.lecho.be/economie-politique/belgique/wallonie/la-wallonie-double-le-financement-de-welbio/10341497.html>

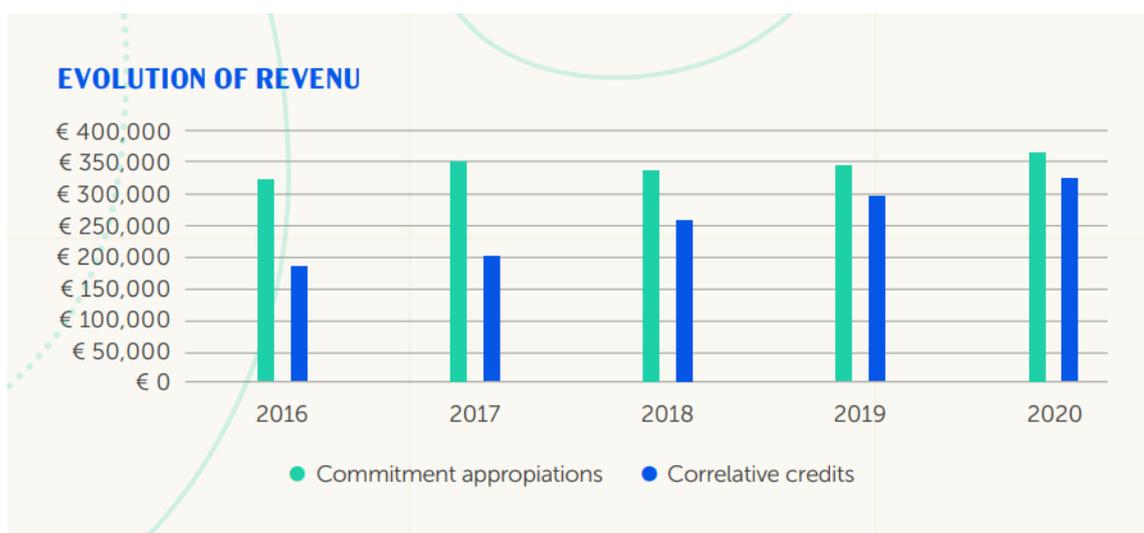
²¹ <https://www.fwo.be/media/1024665/facts-and-figures.pdf>

²² <https://www.fwo.be/media/1023695/beleidsplan-20192023.pdf>



appropriations and the correlative credits. Commitment appropriations consist of the budget available to the FWO to commit each year. Therefore, they represent the cumulated budget that is available to the FWO for combined calls (fellowships, projects, mobility grants, etc.) and that will be transferred/paid across several years. The correlative credits are the amount that the FWO can effectively pay or transfer in a given year to its researchers or the funded research centers²³. Please note that the appropriation credits and correlative credits in a given year tend to be similar. The large difference in Figure 4 for the year 2016 is due to the addition of new programs. As can be seen in the Figure 4, the revenue to the FWO by commitment appropriations and correlative credits, has been increasing. FWO aims to provide a success rate of 33 percent for different programs.

Figure 4. Evolution of FWO revenue



The success rates of doctoral candidates and postdoctoral researchers between 2012-2017 are shown in Table 1. Due to a systematic increase in the budget of FWO, the success rates for doctoral candidates and postdocs remain largely stable.

Table 2. FWO success rates for doctoral candidates, and postdoctoral researchers between 2012-2017

	2012			2013			2014			2015			2016			2017		
	A (n)	T (n)	S (%)	A (n)	T (n)	S (%)	A (n)	T (n)	S (%)	A (n)	T (n)	S (%)	A (n)	T (n)	S (%)	A (n)	T (n)	S (%)
Aspiranten	988	212	21	922	217	24	969	212	22	979	218	22	983	203	21	1006	221	21
SB*	688	200	29	789	200	25	755	200	26	721	203	28	662	200	30	672	200	30
Postdoc	545	157	29	611	165	27	649	179	28	822	194	24	672	160	24	709	197	28

A: Number of applicants; T: Number granted; S: Success rate

²³ For example, a call for projects may have an appropriation credit of €100M in 2021. If the projects funded span a period of four years, provided they would start on January 1st, the correlative credit for this call would be 1/4th of €100M or €25M in 2021.

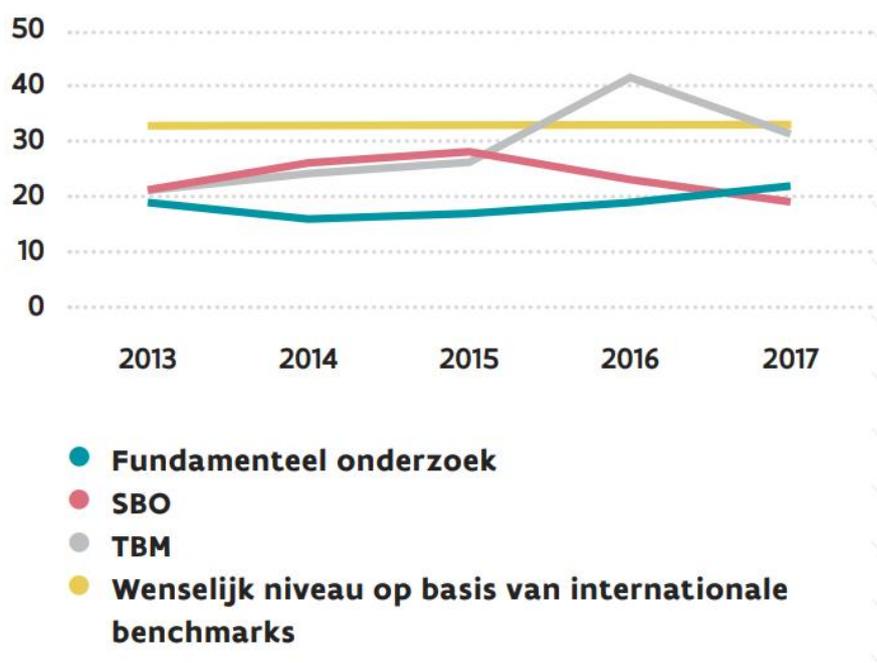


SB: Doctoral fellowships for strategic basic research

ASP: Doctoral fellowships for fundamental research

The success rates for different types of research (fundamental research, strategic basic research (SBO) and applied biomedical research (TBM) are shown in the figure 5 below.

Figure 5. FWO Success rates for fundamental research, strategic basic research (SBO) and applied biomedical research (TBM)



Fundamenteel onderzoek: Fundamental research

SBO: Strategic basic research

TBM: Applied biomedical research

Yellow line: Target level based on international benchmarks

Thanks to the extra budget provided as of 2017, the success rates increased for the first time since 2012 to above 20 percent for fundamental research. For strategic basic research (SBO), since a strong increase in the volume of applications has been observed, the success rate has been decreasing since 2015. For applied biomedical research, the success rate increased significantly in 2016 due to extra available resources.

➤ Research & Development (R&D) Expenditure on Higher Education and Government

Since 2000, the European Union has endorsed the knowledge economy framework for economic growth.²⁴ The Europe 2020 strategy set the target of increasing investment in R&D to 3% of Gross Domestic Product (GDP) by 2020.²⁵ In 2020, the R&D intensity, i.e. R&D expenditure as a percentage of GDP, stood at 2.3% in the Member States of the European Union.²⁶ The same year, the R&D intensity in Belgium was recorded at 3.48% of GDP, the second highest

²⁴ <https://eur-lex.europa.eu/legal-content/EN/TXT/HTML/?uri=LEGISSUM:i23010&from=EN>

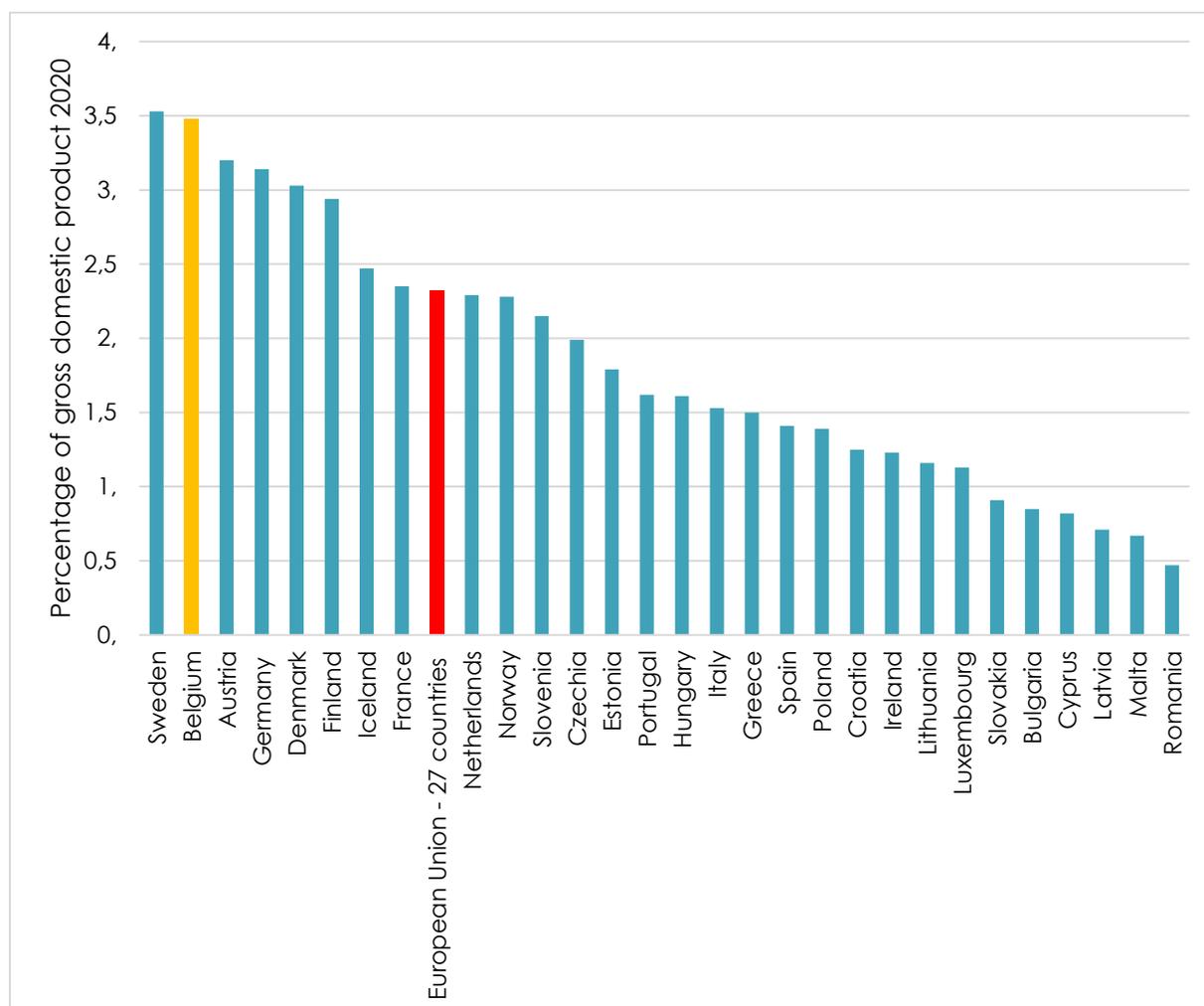
²⁵ <https://ec.europa.eu/eu2020/pdf/COMPLET%20EN%20BARROSO%20%20%20007%20-%20Europe%202020%20-%20EN%20version.pdf>

²⁶ <https://ec.europa.eu/eurostat/en/web/products-eurostat-news/-/DDN-20211129-2>



R&D intensity in the EU after Sweden (3.53%) (Figure Figure 6). However, business sector is the main sector in which R&D expenditure is spent. When we specifically consider R&D expenditure on higher education and government in Belgium, data suggest that it accounts for 0.6% and 0.3% of GDP²⁷.

Figure 6. R&D expenditure as a percentage of GDP in European countries (blue), EU-28, (red) and Belgium (orange) in 2020



3. Relevant national administrative or survey data on research careers

➤ The French community

The most relevant and recent data on the research careers in the French Community of Belgium come from the “Future of PhD Holders 2022” survey data, conducted by the Observatory of Research and Scientific Careers – F.R.S.-FNRS²⁸ in February 2022. This survey specifically targeted the job transition of doctorate holders from all six French-speaking universities of Belgium. It included a high diversity of topics such as doctoral training experience,

²⁷https://ec.europa.eu/eurostat/databrowser/view/RD_E_GERDTOT_custom_1637912/bookmark/table?lang=en&bookmarkId=999ebe67-78b5-4e71-910e-29166b557063

²⁸ <http://www.observatoire.frs-fnrs.be/index.html>



transition to employment, current career, job satisfaction, and mobility experiences. Since the Observatory is currently still in the data analysis phase, the data presented in the country note will be based on the "Future of PhD Holders 2019" survey data, collected in January 2019. 2,065 doctorate holders who defended their doctoral dissertations between January 2012 and May 2018 from one of the six French-speaking universities in Belgium completed the questionnaire, which equates to an overall response rate of 42.0%.

Three thematic reports have already been published based on these data and multiple other publications are currently underway:

- The Future of PhD Holders: Thematic Report Volume 1: Employment status of PhD holders in the Federation Wallonia-Brussels
 - http://www.observatoire.frs-fnrs.be/docs/REPORT%20EMPLOYMENT%20ENG_FINAL.pdf
 - The Future of PhD Holders: Thematic Report Volume 2: Education-job match among PhD holders in the Federation Wallonia-Brussels
 - http://www.observatoire.frs-fnrs.be/docs/REPORT_EMPLOYMENT_Vol2_ENG.pdf
 - The Future of PhD Holders: Thematic Report Volume 3: Their suggestions for improving the job transition after the doctorate
 - <http://www.observatoire.frs-fnrs.be/media/report.employment.vol3.eng.pdf>
- **The Flemish community**

For the Flemish Community, relevant data on researchers are provided by ECOOM UGent²⁹. They focus on "Human Resources in Research": who are they and how do they evolve over time. On the one hand, the academic trajectory - both the doctoral trajectory itself and the further postdoctoral career: success rates, mobility, barriers and keys to success are targeted. On the other hand, because most of the researchers eventually leave the university, attention is paid to the monitoring of the non-academic career. The researchers and their careers are usually monitored based on data specifically collected for this purpose by ECOOM UGent: via administrative databases (Human Resources in Research Flanders database) and surveys (Survey of Junior Researchers, Survey of Senior Researchers, PhD career track survey) supplemented with in-depth interviews. For some purposes, available international data sets are used, such as the European Union Labor Force Survey (EC) or the Career of Doctorate Holders Survey (OECD). The publications of ECOOM UGent can be found in this link:

<https://www.ecoom.be/en/publications?query=&university%5B%5D=2&year%5Bfrom%5D=&year%5Btill%5D=>

The data on the job transition of doctorate holders in the Flemish Community used in this document come from the [PhD Career Survey](#), obtained by [ECOOM-UGent](#). The PhD Career Survey is a survey that was administered in 2017. It was answered by 2982 doctorate holders who obtained their doctorate in Flanders³⁰. The survey asked questions about the crucial moments in their career, namely during the doctorate, the first job after the doctorate and the current job if one has had several jobs after the doctorate. The sample had 1441 doctorate holders (48.4%) who worked inside academia and 1538 doctorate holders (51.6%) who worked outside of academia.

- **Evolution of number of doctorates awarded in the French Community**

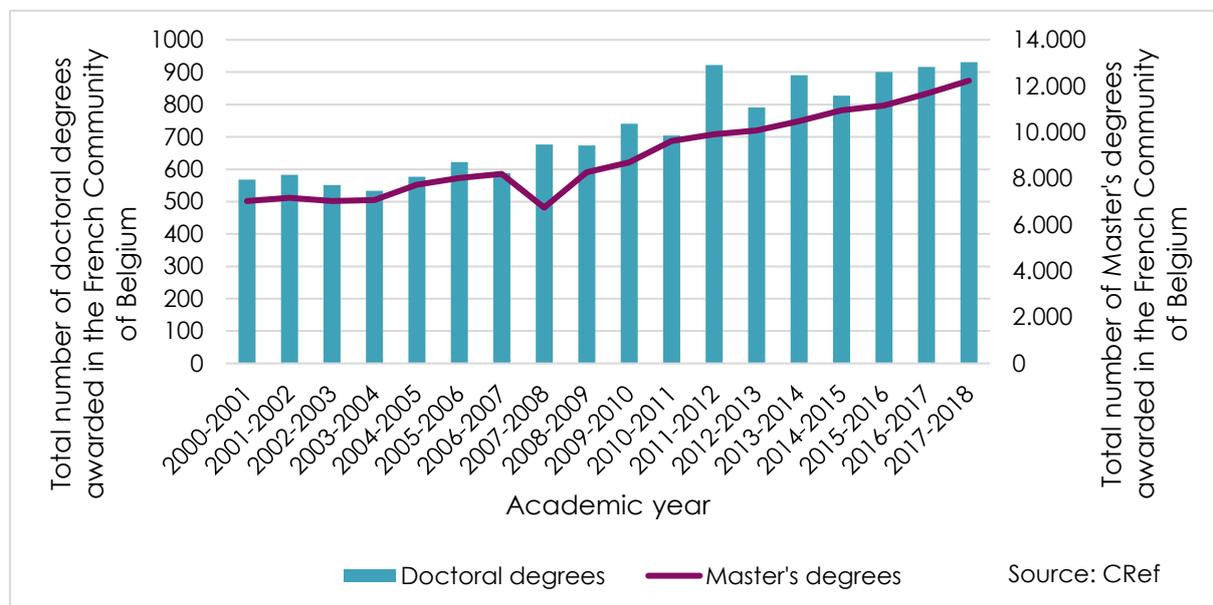
²⁹ <https://www.ecoom.be/en/universities/u-gent>

³⁰ ECOOM letter 25



When we look at the number of doctoral degrees awarded between 2000 and 2018 in the French-speaking universities of Belgium, we see a clear increase, from 568 doctoral degrees awarded in the academic year 2000-2001 to 931 doctoral degrees awarded in 2017-2018, an increase of 64% in 18 years (Figure 7).

Figure 7. Total number of doctoral and master's degrees awarded in the French-speaking universities of Belgium between 2000 and 2018



However, as observed in many parts of the world, this increase in the number of doctorate holders in the French Community of Belgium is not matched by an increase in the number of available permanent academic positions. For instance, between 2014 and 2018, the number of full-time permanent academic and scientific positions that were opened in all the French-speaking universities in Belgium ranged from 68.5 to 90.6, with an average of 80.9 positions per year³¹ (Figure 8). Since these vacant positions are open internationally and the doctorate holders in a given year are also in competition with previous cohorts in the queue, to secure a permanent position is highly challenging. Therefore, many doctorate holders either find themselves in increasingly longer periods of postdoctoral training waiting mostly unsuccessfully for a tenured academic position or enter the non-academic labour market.

³¹ Bebiroglu, N., Dethier, B., & Ameryckx, C. (May, 2019). Employment status of PhD holders in the Federation Wallonia-Brussels. ORCS Thematic Report Series #1, Observatory of Research and Scientific Careers, Brussels, Belgium. http://www.observatoire.frs-fnrs.be/docs/REPORT%20EMPLOYMENT%20ENG_FINAL.pdf



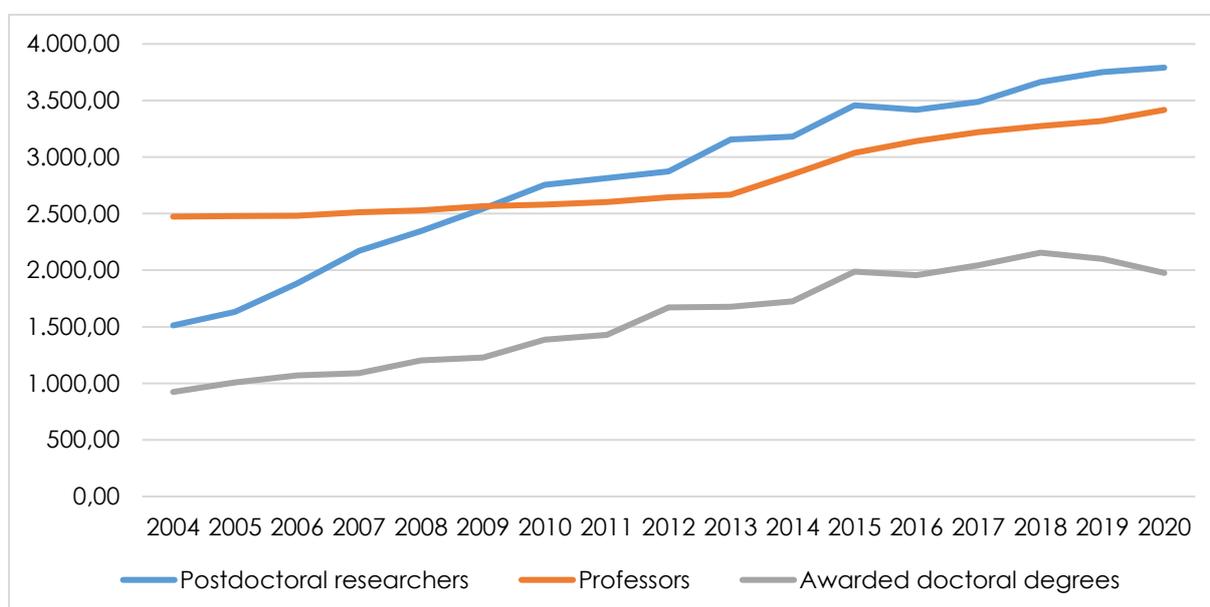
Figure 8. Estimation of available permanent academic and scientific positions in the French Community of Belgium- Full-time equivalence, excluding administrative staff and researchers on permanent contracts granted by professors who have external budgets



➤ **Evolution of the number of doctorates awarded (DHO) in relation to the postdoctoral researchers and professors in the Flemish Community**

When we look at the number of doctoral degrees³² awarded in Flanders³³ between 2004 and 2020, we see an increase, from 924 doctoral degrees awarded in the year 2004 to 1975 doctoral degrees awarded in 2020, an increase of 114% in 16 years (Figure 7).

Figure 9. Total number of postdoctoral researchers, professors and doctoral degrees awarded in Flanders between 2004 and 2020



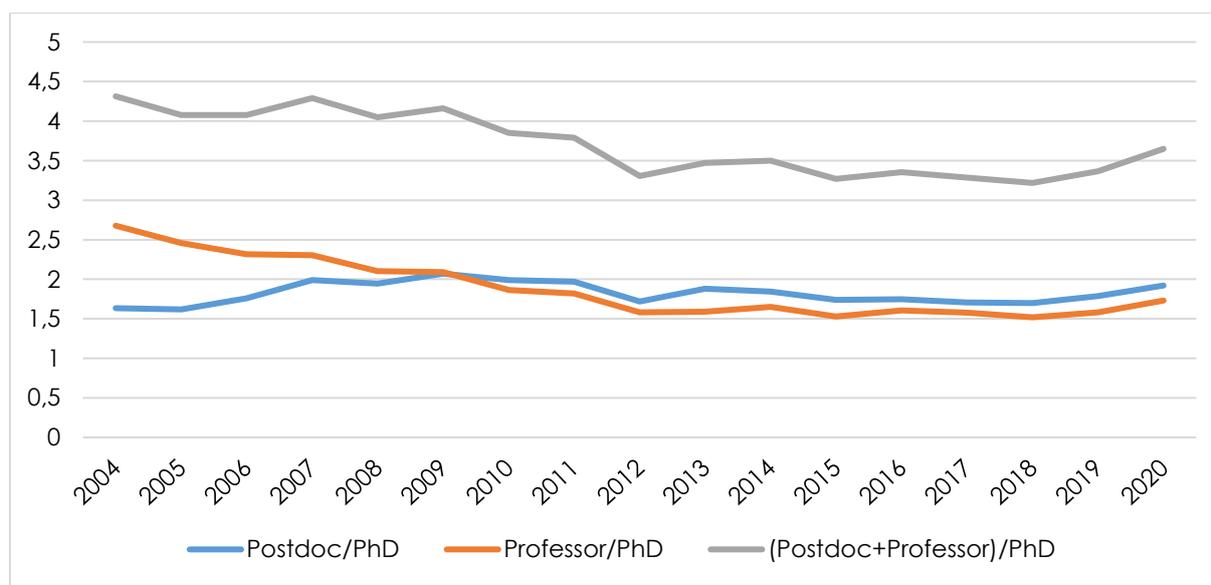
³² For the number of doctoral degrees: Statistisch jaarboek van het Vlaams onderwijs (Number by academic year): <https://onderwijs.vlaanderen.be/nl/onderwijsstatistieken/statistisch-jaarboek-van-het-vlaams-onderwijs>

³³ For the numbers (headcounts) with respect to staff statistics (situation at 1/2/yyyy, VLIR staff statistisc): <https://www.vlaamsindicatorenboek.be/3.3.1/evolutie-van-het-aantal-onderzoekers>



The figure below shows the number of postdocs and/or professors by awarded PhD. Over time the increase in the number of awarded PhDs is higher than the increase of professors. However, since 2012, the situation has remained stable: there was no further decline in the ratio postdoc/PhD, professor/PhD. It might be worthwhile to explore this by scientific cluster or organizational units.

Figure 10. Ratio of the number of postdoctoral researchers and professors to the number of PhD degrees awarded in Flanders between 2004 and 2020



The share of doctorate holders starting as a professor at a Flemish university should be maximum 20% nowadays. The share is higher in the Social Sciences and Medical and Health Sciences and lower in Natural, Engineering and Technology and Agricultural and Food Sciences.

4. Labour market for researchers

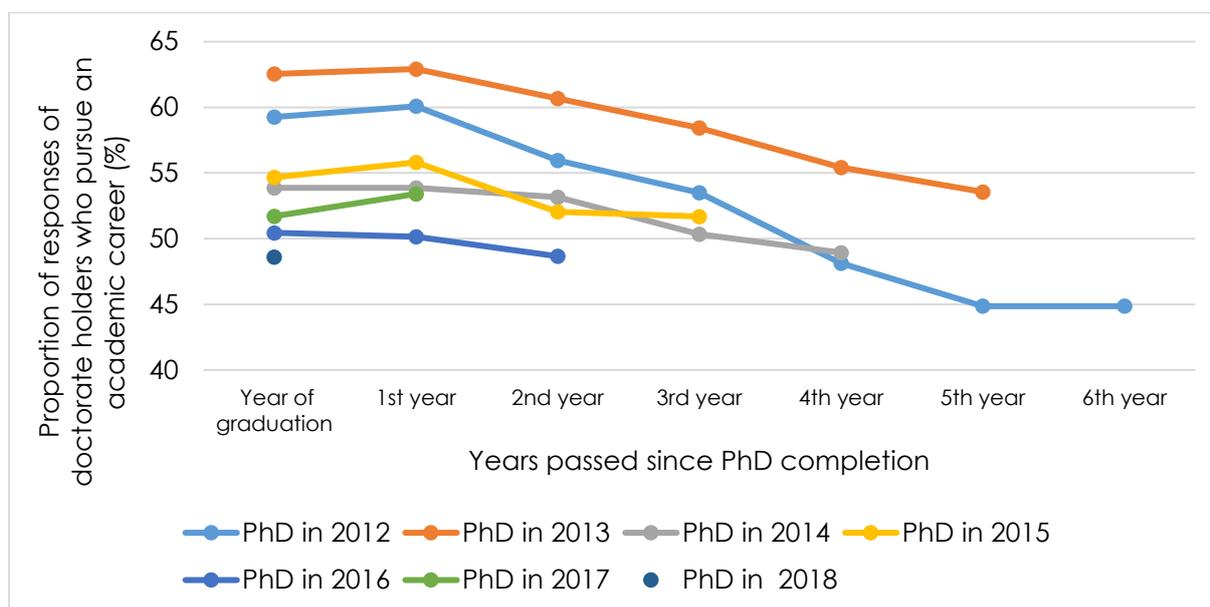
➤ The French community

For the French Community, the “Future of PhD Holders 2019” survey data have revealed that most doctorate holders are quick to find a job after getting their doctorate, since for a majority (72.2%) the job search lasts less than 4 months. In addition, they have an unemployment rate of 3.8%, which is lower than the national unemployment rate in Belgium in 2018 (6.2%).

Pursuing an academic career is an attractive option for recent doctorate holders in the French Community of Belgium since 49% to 63% of all graduating cohorts start by pursuing an academic career (Figure 11). However, looking at Figure 11, we realize that the proportion of doctorate holders who pursue an academic career in each cohort decreases over time. For instance, for doctorate holders who completed their degree in 2012 (the blue line), the percentage goes down from 59.3% in the year of doctoral completion to 44.9% in year six. It is likely that regardless of the year the doctoral degree was awarded, those who cannot succeed in securing a permanent contract after years of postdoctoral work quit academia. Interestingly, more than half of doctorate holders (55.8%) who do not pursue an academic career indicate they would have liked an academic job if they had had the opportunity. Therefore, it seems like for those who do not pursue an academic career, to leave academia is perceived as a forced-choice or a plan B.



Figure 11. Answers to the question “Have you pursued an academic career since your dissertation defence?” in “Future of PhD Holders” survey, conducted in the French Community in 2019



➤ The Flemish community

In Flanders, it is expected that nowadays the share of doctorate holders starting as a postdoctoral researcher at a Flemish university will be no more than 30%^{34,35}. This means that about 70% leaves the Flemish universities. Most of them will start at the non-academic labour market in Flanders or elsewhere, a small part will pursue a further academic career outside Flanders. Unfortunately, we do not know how large that share is. Given that postdoctoral research is temporary, in the long run about more than 80% will leave the Flemish universities, most of which will start working at the non-academic labour market in Flanders or elsewhere and an unknown part will pursue an academic career outside Flanders. There are some differences with respect to the scientific cluster in which the PhD was obtained: in Natural and in Agricultural, veterinary and food sciences the share leaving the Flemish universities is highest and in Social and Medical and health sciences it is lowest.

5. Differences between sectors

➤ Share of researchers by sector

In the **French Community**, the university sector remains the main employment sector for doctorate holders, regardless of their research field (Table 3). Other important sectors of employment include industry, government/public and service sectors.

³⁴ We do not know how large the share is that starts postdoctoral research outside Flanders.

³⁵ Ecoom brief 39, HRRF Basic indicators

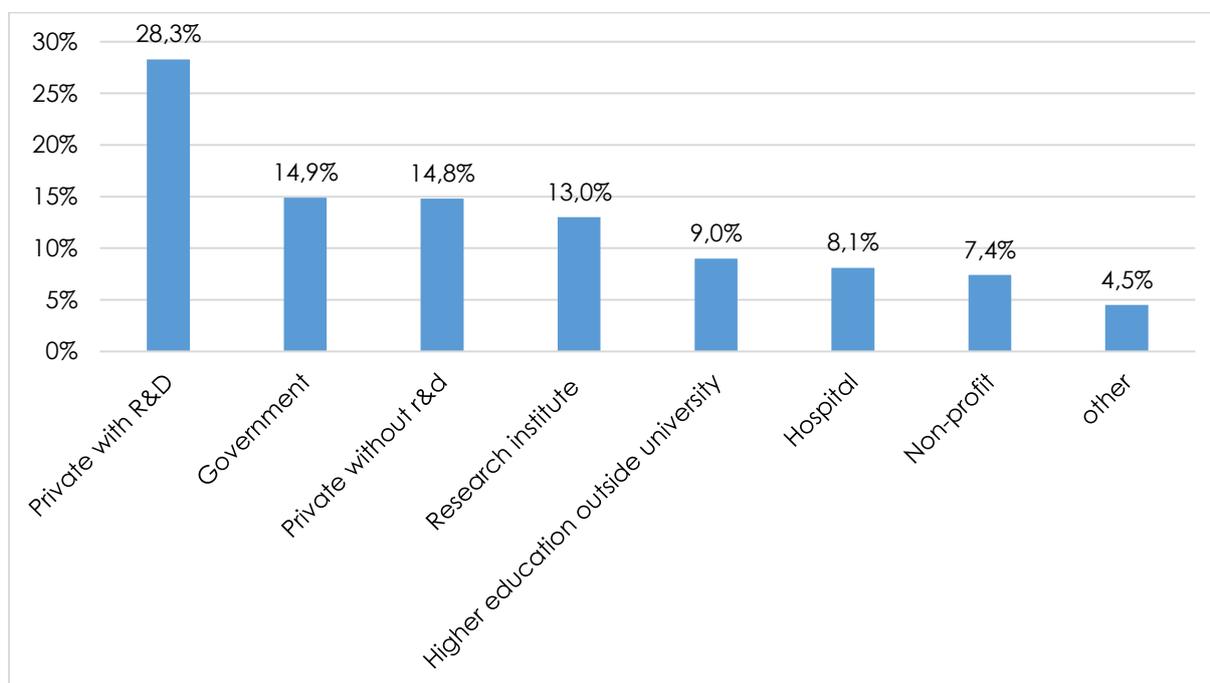


Table 3. Sector of employment (total proportion) of doctorate holders by research field in the French Community³⁶

(%)	Education outside of HE	HE outside university	Gov/ Public	Hospital	Industry	Service	Non-profit	University	Research Institute
Total	3,7	5,6	9,6	5,8	14,5	9,0	5,5	44,4	2,6
SSH	3,9	7,7	12,5	2,0	1,4	8,0	8,8	55,6	1,6
ENS	4,3	4,9	8,9	0,6	21,0	11,9	4,3	38,6	3,3
LHS	2,3	4,2	6,9	21,0	18,9	4,4	3,6	40,8	2,7

In the Flemish community, the PhD Career Survey sample had 1441 doctorate holders (48.4%) who worked inside academia and 1538 doctorate holders (51.6%) who worked outside of academia³⁷. Eight different non-academic sectors are used: (1) hospital; (2) research institutes; (3) higher education outside of the university; (4) government; (5) private with research- and development activities (R&D); (6) private without research and development activities; (7) non-profit organizations; and (8) others. This last category includes freelance, entrepreneurs and not higher education. The **Figure 12** shows the non-academic sectors of employment for doctorate holders. As can be seen, the largest share of doctorate holders is employed in the private sector with R&D activities (28.3%), followed by the government (14.9%) and the private industry without R&D activities (14.8%).

Figure 12. Sector of employment of doctorate holders working outside of academia in their first job after their doctorate in the Flemish Community (n = 1535)

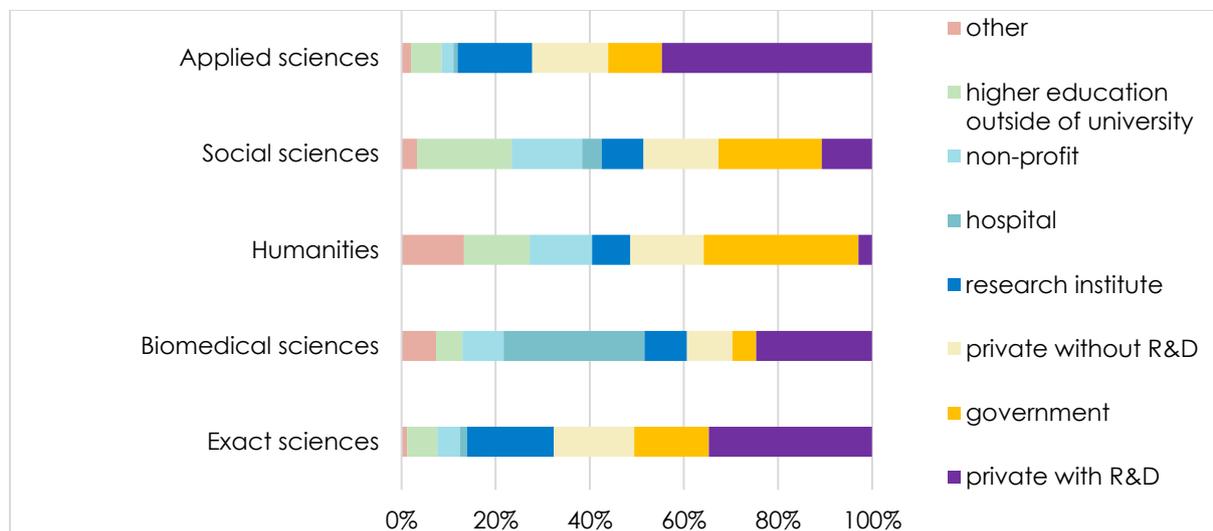


³⁶ HE = Higher education, SSH= Social Sciences and Humanities, ENS= Exact and Natural Sciences, LHS= Life and Health Sciences

³⁷ The sample is not representative towards the general population on this, because the contact details of doctorate holders employed at a university were easily accessible, resulting in a sampling bias based on sector. Because of this, data on Flanders will only focus on the doctorate holders who were employed in a non-academic job after obtaining their doctorate.



Figure 13. Sector of employment of doctorate holders working outside of academia in their first job after their doctorate, broken down by scientific discipline in the Flemish Community (n = 1534)

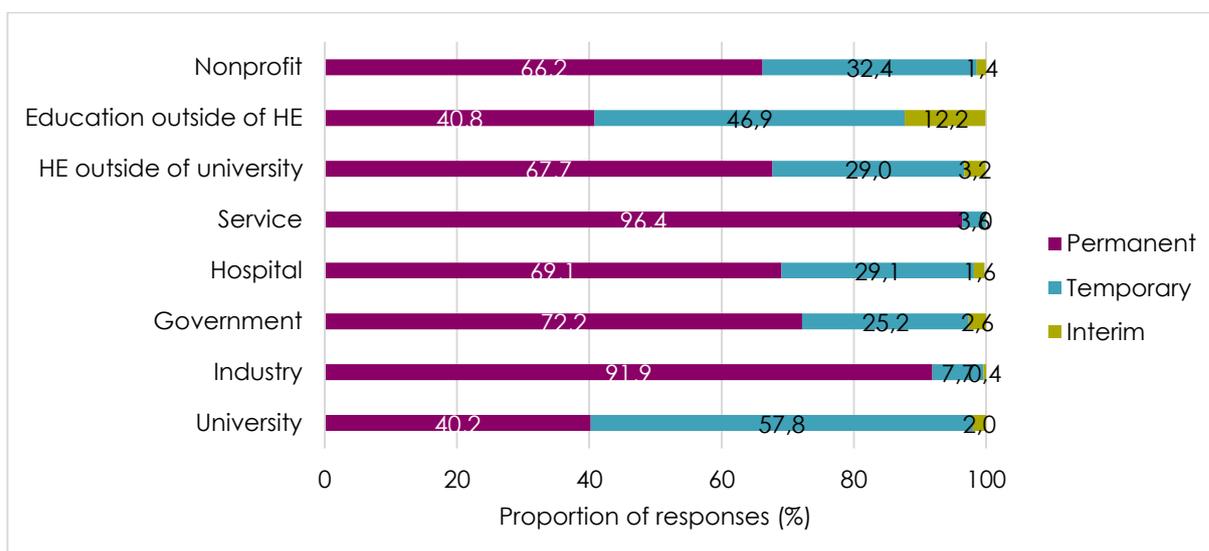


Different patterns emerge when we look at sector of employment broken down by the scientific discipline of the doctorate: For Applied sciences and Exact sciences, the largest share of employment is the private sector with R&D activities (44.70% and 34.7%, respectively); for Social sciences and Humanities, the largest share is the government (22.0% and 32.9%, respectively); and for the Biomedical sectors, it is the hospital sector (29.9%).

➤ Working conditions

In the **French Community**, since there are very few permanent positions in the university sector, a non-negligible proportion of those who work at the university sector (58%) work under temporary contracts (Figure 14).

Figure 14. Type of contract by sector of employment for doctorate holders in the French Community

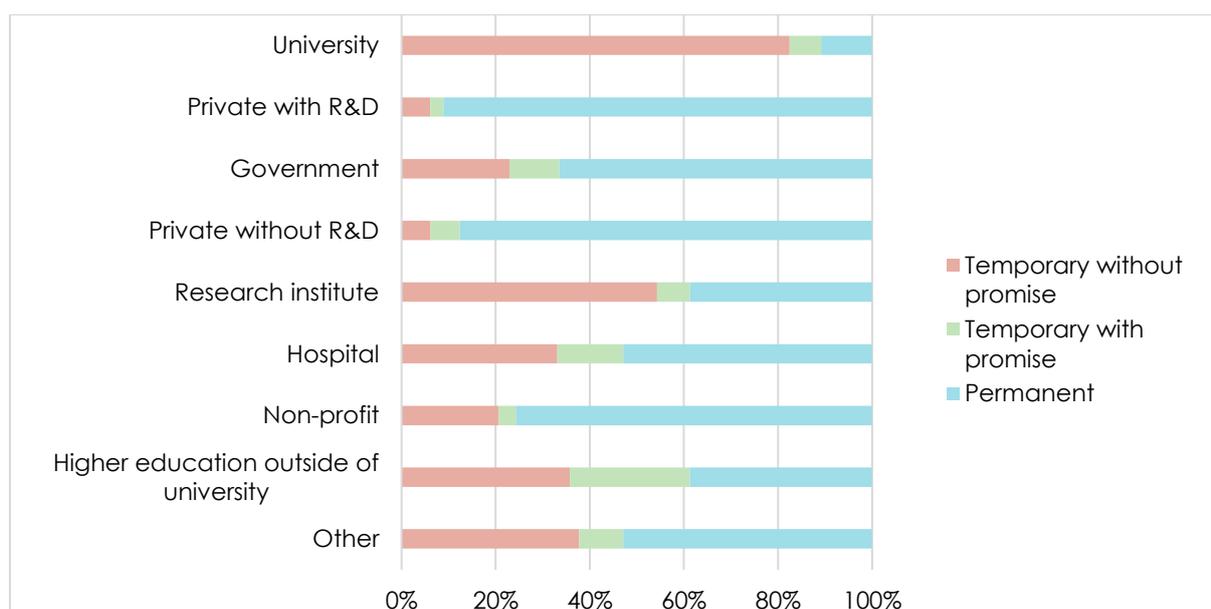




Doctorate holders who work outside the university sector find positions that are related to their research domain and continue to do research (see Figure 16). However, most of them hold positions that require a master's degree (56.7% of those who work outside of university sector) or less (6.1%).³⁸ Doctorate holders in Social Sciences and Humanities have the highest rate of overeducation, with 78.1% holding positions that require a master's degree or less. This rate is 63.7% in Exact and Natural Sciences and 57.9% in Life and Health Sciences.

In the **Flemish community**, Figure 15 shows that for doctorate holders employed inside academia, temporary contracts without a promise of a permanent contract have the largest share (82.5%). Only a small proportion has a temporary contract with promise of a permanent job contract (6.7%) and a permanent contract (10.8%). However, outside of academia, we see that almost 7 out of 10 doctorate holders have a permanent job contract (69.3%). Less than 10% of the doctorate holders are employed on a temporary contract with a promise of a permanent contract. Lastly, 22.3% is employed on a temporary contract without a promise of a permanent contract. Looking at non-academic sectors, the largest share of permanent job contracts is found in the private industry, both with R&D (91.0%) and without R&D (87.6%). The largest share of temporary job contracts with a promise of a permanent contract is in the sector of higher education outside of university (25.5%).

Figure 15. Type of contract by sector of employment for doctorate holders in the Flemish Community (n = 2900)



➤ Involvement in research

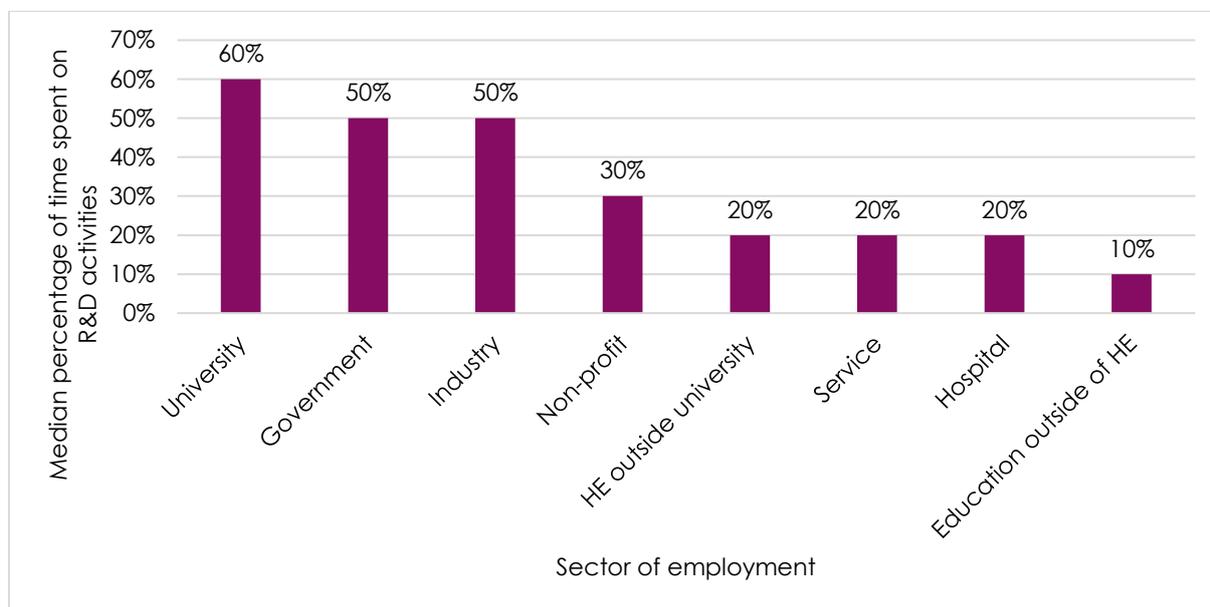
Doctorate holders from **the French Community** were asked to indicate what percentage of their time in the workplace was spent on R&D activities (data collection, analysis, publication). Responses ranged from 0% to 100%. Results indicate that 41.8% of doctorate holders spend between 60% and 100% of their time in the workplace on R&D activities. Only 30.3% of them spend less than 20% of their time in the workplace on R&D activities. These results demonstrate that most doctorate holders have jobs that involve research. However, time spent on R&D

³⁸ Bebiroglu, N., Dethier, B., & Ameryckx, C. (January, 2020). Education-job match among PhD holders in the Federation Wallonia-Brussels. Observatory Thematic Report Series #1, Volume 2: http://www.observatoire.frs-fnrs.be/docs/REPORT_EMPLOYMENT_Vol2_ENG.pdf



depends on the sector of employment: doctorate holders who work in the university sector, the government/public sector and industry engage in more R&D activities than those who work in other sectors (Figure 16).

Figure 16. Time spent on R&D activities for doctorate holders from the French Community, by sector of employment (n = 1856)

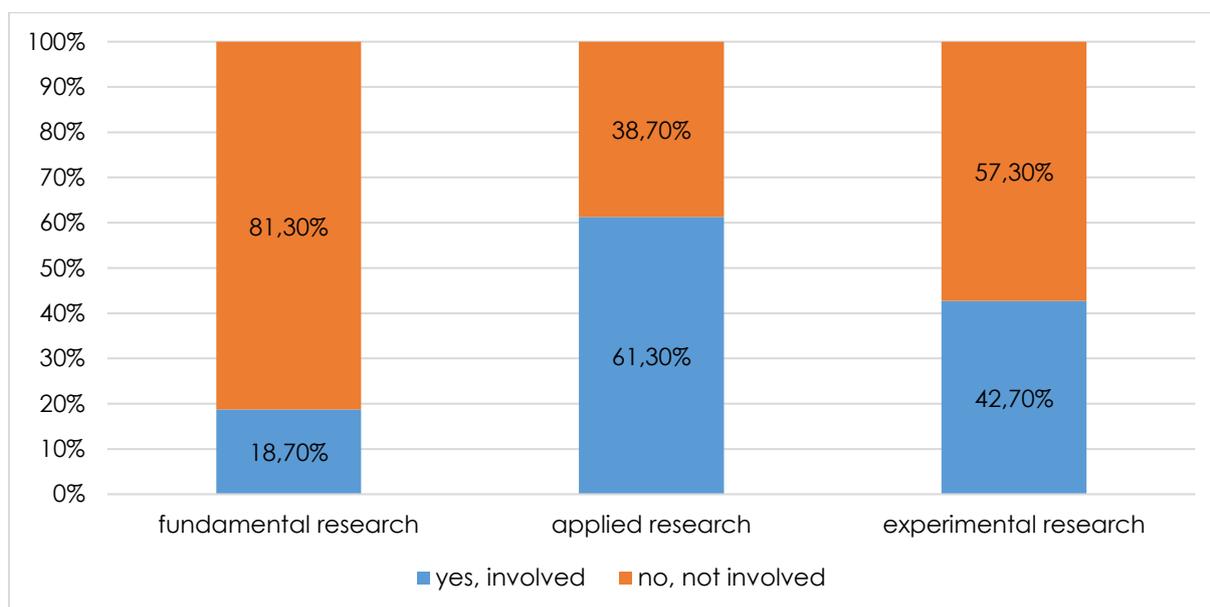


The data from **the Flemish Community** show that 28.1% of doctorate holders employed outside of academia are no longer involved in any type of research. Figure 17 shows the type of research doctorate holders are engaged in by distinguishing three types: basic research, applied research and experimental development³⁹. For each one of them, respondents indicated if they were involved in this type of research (yes or no). More than half (61.3%) indicated that they were involved in applied research, while two in five were involved in experimental development and almost one in five in basic research. In addition, they had the right to choose multiple types of research. Almost one in three were involved in one (30.6%) or two types of research (32.1%), whereas 9.2% of doctorate holders were involved in all three types of research.

³⁹ These three types of research are based on the Frascati manual (OECD, 2015): (1) basic research, which aims to gather new knowledge about the underlying foundations of phenomena and observable facts, independent of any practical application or use; (2) applied research, which aims to gather new knowledge primarily directed at a specific practical objective or application and (3) experimental development, which is systematic work founded on findings from research and practical experience that aims to produce new materials, products and devices; on installing new processes, systems and services; or on substantially improving already existing materials, products and devices or already installed processes, systems and services.



Figure 17. Proportion of doctorate holders from the Flemish Community involved in fundamental research, applied research and experimental development in a first non-academic job ($n_{\text{fundamental}}=1532$; $n_{\text{applied}}=1532$; $n_{\text{experimental}}=1524$)



6. Doctoral education framework

The legislative framework in Belgium gives an autonomy to universities to organize research, within the framework imposed by the regional and European authorities. While several decrees outline the general framework (e.g. Paysage" Decree of 7 November 2013 in the French community), the European Charter for Researchers (2005), the Code of Conduct for the Recruitment of Researchers (2005) and the principles of innovative Doctoral Training (2011)⁴⁰, as well as the Salzburg recommendations of the EUA (2005, 2010 and 2016) are the guiding principles. Each university places its own emphasis on the setting up of doctoral studies, but the finality and the nature of the activities are broadly the same.

- Admission requirements. Holding a master's degree is a general admission requirement for being admitted to a doctoral programme.
- Supervision⁴¹. Each doctoral student has at least one supervisor, assisted by a guidance committee. Every university has drawn up a 'charter of the doctoral candidate' in which the general expectations of the candidate are listed. In many universities, a key feature of these charters is that it also sets out expectations regarding the supervisor as well as common supervisor-supervisee relationship issues (e.g., co-authorship, career advice, etc.).
- Provision of a structured PhD program that offers courses on specialist topics and transferable skills. The obligations related to the courses to take, and the number of credits may differ from one university to another.
- A degree of doctor is granted after a public presentation and defence of a doctoral thesis. The preparation of a doctoral thesis aims to contribute to the training of a researcher who can independently make a valuable contribution to the development and growth of scientific knowledge.
- Funding. Many doctoral candidates either have a fixed-term employment contract with the university (for instance as a research assistant) or receive a personal PhD

⁴⁰https://euraxess.ec.europa.eu/sites/default/files/policy_library/principles_for_innovative_doctoral_training.pdf

⁴¹ https://eacea.ec.europa.eu/national-policies/eurydice/content/third-cycle-phd-programmes-3_en



scholarship. Most doctoral fundings have a duration of four years (sometimes renewable after the first two years). Although it is difficult to identify doctoral candidates without funding, in a study conducted on doctoral candidates in one of the French-speaking universities, this number was at 26%⁴².

- Transferable skills training. Although all universities offer transferable skills training, the obligation to take these courses vary from one university to another and sometimes may differ from one faculty to another.
- Coursework. More emphasis on the "learning by doing" under the guidance of the supervisor than intensive course work⁴³.
- Success rates. In the **Flemish Community**, 68% of the doctoral students obtain their PhD within six years⁴⁴. The highest success rates are observed among researchers with competitive funding, such as FWO and VLAIO (>80%). Success rates are lower among women than among men and among Belgians compared to non-Belgians. In the **French Community**, a longitudinal study conducted in two French-speaking universities indicated the success rates of doctoral candidates to be around 54.3% within 8 years⁴⁵. In addition, four factors were directly associated with doctoral dropout: marital status, the grade obtained upon graduating from master's program, research field and funding. Those who have competitive grants such as FNRS fellowships have the lowest dropout rates compared to those with other types of funding (e.g., university funding) and those without funding⁴⁶.
- Time to degree for the PhD. The median duration to obtain a PhD is 5,2 years in the **Flemish Community**. According to the "Future of PhD Holders: 2019" survey, the length of doctoral completion in **the French Community** is on average 5.1 years (SD = 1.6). The average length varies between research fields: 4.9 years (SD = 0.4) for Exact and Natural Sciences (ENS), 5.2 years (SD = 0.8) for Life and Health Sciences (LHS) and 5.3 years (SD = 0.7) for Social Sciences and Humanities (SSH)⁴⁷.

Despite these similarities, there are several differences between the two communities when it comes to doctoral education framework:

- Doctoral schools. In the **Flemish community**, doctoral schools organise doctoral courses, which may or may not be mandatory for doctoral students. In addition to a comprehensive offer of courses and programmes doctoral schools also organise information sessions and other related activities for doctoral students and post-doctoral staff members. The organisation of the doctoral school belongs to the autonomy of the research university and therefore differs from one university to another. The coordination of doctoral education policy is ensured by Flemish universities at Vlaamse

⁴² Van Der Haert, M., Arias Ortiz, E., Emplit, P., Halloin, V., & Dehon, C. (2014). Are dropout and degree completion in doctoral study significantly dependent on type of financial support and field of research?. *Studies in Higher Education*, 39(10), 1885-1909.

⁴³ Levecque, K., Anseel, F., De Beuckelaer, A., Van der Heyden, J., & Gisle, L. (2017). Work organization and mental health problems in PhD students. *Research policy*, 46(4), 868-879.

⁴⁴ <https://biblio.ugent.be/publication/8683415>

⁴⁵ Wollast, R., Boudrenghien, G., Van der Linden, N., Galand, B., Roland, N., Devos, C., ... & Frenay, M. (2018). Who are the doctoral students who drop out? Factors associated with the rate of doctoral degree completion in universities. *International Journal of Higher Education*, 7(4), 143-156.

⁴⁶ Van Der Haert, M., Arias Ortiz, E., Emplit, P., Halloin, V., & Dehon, C. (2014). Are dropout and degree completion in doctoral study significantly dependent on type of financial support and field of research?. *Studies in Higher Education*, 39(10), 1885-1909.

⁴⁷ Bebiroglu, N., Dethier, B., & Ameryckx, C. (May, 2019). Employment status of PhD holders in the Federation Wallonia-Brussels. ORCS Thematic Report Series #1, Observatory of Research and Scientific Careers, Brussels, Belgium.

http://www.observatoire.frs-fnrs.be/docs/REPORT%20EMPLOYMENT%20ENG_FINAL.pdf



Interuniversitaire Raadlevel⁴⁸ (VLIR) Flemish Interuniversity Council) level. Flemish universities use this forum to co-organise aspects of the doctoral education programme (e.g., interuniversity job fair, opening course offers to participants from other universities). In the **French Community**, the preparation of doctoral candidates for careers (e.g., transferable skills training, information sessions, or courses not related to scientific content) is taken mostly in charge by career services or research administration services of universities. Scientific and thematic training of doctoral candidates is taken in charge by several entities: universities, university faculties or research units and the F.R.S.-FNRS⁴⁹. The courses offered by these entities mostly focus on thematic courses (e.g., veterinary sciences), with a few exceptions (e.g., the FNRS doctoral school “structure and function of biological macromolecules, bioinformatics and modeling (SFMBBM)” organized a workshop on scientific writing).

- Internships. Two years ago, the FWO⁵⁰ has started to give flexible funding that encourages researchers to spend their time on activities (such as internships or collaborations) other than their doctoral or postdoctoral research. The goal was on the one hand to support researchers and help them gain experience within and outside of university and on the other hand facilitate companies and institutes to profit from the skills of doctoral candidates and doctorate holders. “Every FWO researcher can spend 20 percent of their available time on activities other than the actual PhD or postdoctoral research, so long as they contribute to the researcher’s development”. This initiative opened the way for doctoral and postdoctoral researchers to do internships. It is important to note however that despite this encouraging rule change, internships for doctoral candidates are not commonplace in the **Flemish community** due to legal/fiscal framework for doctoral candidates. For instance, within these restrictive frameworks paid internships are largely impossible unless scholarships are suspended for the duration. In addition, many doctoral candidates operate under funding regulations from funding bodies that are not the FWO (so this change does not impact all doctoral candidates in Flanders), and therefore barriers remain to undertaking internships. There is no such equivalent flexible funding in the **French Community**. Internships during the doctorate or the postdoctoral phase are thus rare.

7. Brief description of any policy initiatives to deal with emerging issues resulting from the Covid-19 pandemic

In the **Flemish community**, there were multiple initiatives that were implemented to offset the impact of COVID-19:

- The Flemish Government decided in June 2021 to provide extra resources (2.4 million €) to enable FWO PhD fellows to extend their ongoing fellowship for a period of 3 to 6 months⁵¹. In June 2021, a first call was launched to PhD fellows who were then in their last fellowship year. A new call to PhD fellows currently in their last year was launched in 2022.
- The FWO offered last year PhD and postdoctoral fellows the opportunity, as an alternative to an extension, to continue to use the remainder of their bench fee, with a maximum of €1,500, for up to three months after the end of their fellowship. During this period, however, the fellows must remain affiliated to the host institution where they carried out their fellowship⁵².

⁴⁸ <https://vlir.be>

⁴⁹ <https://www.frs-fnrs.be/fr/financements/chercheur-doctorant/ecoles-doctorales/ecoles-doctorales-pres-le-fnrs>

⁵⁰ <https://www.fwo.be/en/the-fwo/research-policy/hr-strategy/research-careers>

⁵¹ <https://www.hildecrevits.be/nieuws/786-doctoraatstudenten-krijgen-verlenging-van-mandaat-wegens-corona/>

⁵² <https://www.fwo.be/en/fellowships-funding/researchers-and-corona-update-measures-fwo/>



- FWO fellows and staff working on an FWO project were given exceptionally, the opportunity to claim the reimbursement of expenses for home working, such as an internet subscription at home, the bench fee of a fellowship, or the consumables of a project.
- Moreover, in the reports on their fellowships, both doctoral and postdoctoral researchers were given the possibility to indicate the delays and problems they experienced due to the coronavirus situation. The FWO explicitly asked the expert panels responsible for assessment of the reports, to take these extraordinary circumstances into account⁵³.
- Universities in Flanders took several measures, such as showing flexibility in terms of research progress where COVID had prevented activities taking place, re-organising training offers into a digital format, reviewing funding options for candidates whose funding would run out during COVID and whose research project had experienced pandemic-related delays.

In the French Community,

- The Ministry of Higher Education, Scientific Research, Youth and Sports of the Wallonia-Brussels Federation⁵⁴ and CRef⁵⁵ issued statements to deal with emerging issues resulting from the Covid-19 pandemic. These statements were followed by multiple communications by each individual university. Although in these university communications, the difficulties to continue research activities were acknowledged, the focus was mostly on safety measures, online learning and the end of year examination period and the modalities of online exams.
- In January 2021, the Wallonia-Brussels Federation Government approved a 3.8 million € special funding for doctoral researchers to help those whose research has been affected by the pandemic⁵⁶. A contract prolongation was also accorded up to 3 months. In July 2021, a 4.2 million € extra funding has also been approved to support postdoctoral researchers. In addition, postdoctoral researchers were given the opportunity to use up to 10,000€ to “stimulate their career”⁵⁷.
- The Board of Directors of F.R.S.–FNRS⁵⁸ decided to reimburse researchers and academic institutions for events cancelled due to coronavirus, granted extensions for postdoctoral fellowship “*chargé de recherche*” applications to doctoral candidates who may not be able to defend their dissertation on time, and extended the duration of all project agreements and research credits by 12 months, without granting additional financial means.
- In addition, F.R.S.–FNRS announced a 4M € fund devoted to research related to coronavirus: 1M € to CURE (Crédits urgents de recherche)⁵⁹ and 3M € to PER (Projets Exceptionnels de Recherche).⁶⁰
- At the initiative of the Royal Academy of Medicine and the Royal Academy of Sciences, Letters and Fine Arts, supported by the universities of the French Community, F.R.S.–FNRS was asked to create an inventory that groups together all scientific projects, business initiatives or expertise available in the French Community to help combat the pandemic. This inventory is currently published on the website <https://www.covid19-wb.be/>

⁵³ <https://www.fwo.be/en/fellowships-funding/researchers-and-corona-update-measures-fwo/>

⁵⁴ <https://glatigny.cfwb.be/home/presse--actualites.html>

⁵⁵ <http://www.cref.be/communication/>

⁵⁶ https://glatigny.cfwb.be/home/presse--actualites/publications/la-federation-wallonie-bruxelles-soutient-les-doctorants-impacts-par-la-crise-sanitaire_publicationfull.html

⁵⁷ <http://archive.pfwb.be/1000000020cd044>

⁵⁸ <https://www.frs-fnrs.be/fr/l-actualite-fnrs/1065-faq-comment-les-mesures-covid-19-du-fnrs-s-appliquent-concretement-aux-bourses-mandats-projets-et-credits>

⁵⁹ <https://www.frs-fnrs.be/fr/l-actualite-fnrs/1139-candidatures-retenues-pour-l-appel-coronavirus-credits-urgents-de-recherche-cur>

⁶⁰ <https://www.frs-fnrs.be/en/l-actualite-fnrs/988-coronavirus-le-fnrs-consacre-3-millions-a-la-recherche>



B. NATIONAL POLICY CONCERNS

1. Increasing the participation of young researchers in professional development activities in line with their career goals and helping them make informed decisions about which activities to participate

In recent years, within each Belgian university, there have been important initiatives related to talent management and professional development of doctoral and postdoctoral researchers. Almost all universities now offer transferable skills training programs, career counselling for doctoral and postdoctoral researcher, and organize specific events for doctoral candidates (see section E for all activities). In addition, the training offer has been increased in quantity (many more courses offered), quality (more in line with the demands of the labour market) and complexity (a range of content from leadership to business).

However, barriers to participation remain, especially in universities that do not explicitly give candidates the right to follow courses from these programs. One possible **barrier** is the lack of time. As a doctorate holder in the “Future of PhD Holders” sample wrote:

“Offering post-PhD guidance would be more relevant, because while we’re studying, we have to focus 100% on our research. I really can’t see, given the pressure I was already under to manage my research, at what point, I could have jammed in work experience in a company or some form of non-academic collaboration.” (Anonymous PhD holder, p. 12, Dethier, et al., 2021) ⁶¹

Time seems to be a barrier and a concern for doctorate holders in the sample from the French Community. Given the push to shorten the doctoral training further (e.g., Shaller & Barbier, 2021), their concern that professional development activities may slow the research progress and lengthen the time to degree is understandable. Especially, if the supervisors are reluctant to recognise the value of time spent outside of research, to spare time to such activities may be difficult for doctoral candidates.

A related concern is to help young researchers make informed decisions about which professional development activities to choose among the offers. Since many would like to pursue an academic career, they may be more likely to choose activities related to working in academia (e.g., grant writing) instead of activities more related to working in a non-academic sector (e.g., entrepreneurship).

2. Increasing and facilitating intersectoral mobility during the doctoral and postdoctoral phase

Professional experience outside of university seems to be a very important factor for the non-academic employers. Indeed 88% of them in the “Recruiting Talents” study consider that this experience is either “necessary” or “very necessary” or “a plus” to hire a doctorate holder. Universities can provide this experience while doctoral candidates and postdoctoral researchers are still in training through internships and collaborative doctoral programmes. Considering that 74% of employers in the “Recruiting Talents” survey are in favour of temporarily hosting doctoral students as interns and 55% of hiring doctoral candidates in collaboration with a university, integrating internships and collaborative doctorates within the doctoral and postdoctoral programme could be considered.

Although there are several initiatives of collaborative doctorates in Belgium, they are limited in their scope. For instance, « Win4Doc⁶² » of the Walloon Region, exclusively focuses on industrial

⁶¹ This excerpt is from responses to open-ended questions in the “Future of PhD holders” survey, the analysis of which was previously reported (Dethier, Bebiroglu, Ameryckx, 2021).

⁶² [Win4Doc - La Recherche en Wallonie](#)



research and technological advancement, thus targeting mostly PhD holders from STEM fields. Similarly, Baekeland mandates⁶³ in the Flemish community focus on strategic basic research with economic finality. Moreover, existing initiatives have a very limited budget so very few doctoral candidates can profit from them. For instance, in the Brussels-Capital region, the « Applied PhD⁶⁴ » program funds an average of 7 doctorates per year⁶⁵, divided between Flemish and French-speaking universities and the institutions of higher education outside of university. The existing funding schemes could be broadened to include multiple sectors, including the public sector, and candidates from all domains, including those from Social Sciences and Humanities and to fund a greater number of doctoral candidates.

Universities are also confronted with legislations and regulations that are very restrictive. In addition, the existing programmes may not meet the expectation of the companies (e.g., companies that may prefer longer internships). It is important to remove such restrictions that create barriers for intersectoral mobility. Therefore, in the Flemish Community, the change in the regulations of the FWO (giving the opportunity to FWO researchers to spend 20 percent of their available time on activities other than the actual PhD or postdoctoral research, so long as they contribute to the researcher's development) is in that respect very positive. However, it is worth remembering that relaxing rules from a single funding body does not change the legal/fiscal constraints that impact many other doctoral candidates who have funding from other sources.

A related concern on intersectoral mobility for both communities is how to value the mobility back to academia after working in non-academic sectors. Given the focus of academic evaluations on publication records, and the limited recognition of non-academic experience, the mobility back to academia is very difficult. There is a need to make these transitions easier.

3. Increasing partnerships with non-academic sectors and investing in non-academic employers and recruiters to sensitize them on the added value of PhD

For most non-academic employers (88%) in the "Recruiting Talents" study it is either "important" or "very important" to recruit MA's holders. However, this percentage is almost cut by half when it comes to recruiting PhD holders with 47% of employers indicating it to be "important" or "very important" for their organisation. In addition, only for 56% of non-academic employers in the sample PhD holders have an added value for their organisation compared to those with master's qualifications.

As the figures have shown, a growing number of doctorate holders in Belgium work outside the university sector and this number will be increasing in the coming years. Therefore, nurturing relations between universities and profit or non-profit organizations (companies, NGO's, etc.) from all sectors of activities (e.g., industry, public) may help promote the added value of PhD among employers and facilitate the job transition of PhD holders. Non-academic employers and recruiters should be given the possibility to participate in activities such as mentorship programs, company visits, laboratory visits, presentation of doctoral research projects to employers, etc. They can also be invited to do trainings and serve in advisory boards or councils that concern doctoral education.

⁶³ <https://www.vlaio.be/nl/subsidies-financiering/baekeland-mandaten/baekeland-mandates>

⁶⁴ <https://innoviris.brussels/news/applied-phd>

⁶⁵ [avis_cpsrwb_applied_phd.pdf \(innoviris.brussels\)](#)



C. AVAILABLE NATIONAL AND INTERNATIONAL EVIDENCE

1. Evidence of differences in career paths between population groups

➤ The Flemish Community

- Citizenship and career paths inside academia. Comparing two cohorts of doctorate holders⁶⁶, the doctorate holders from the academic years 1990-1991 to 2004-2005 on the one hand (cohort 1, N=10,044) and from the academic years 2005-2006 to 2015-2016 on the other hand (cohort 2, N=16,322), it seems like
 - a. The share of non-Belgian doctoral students who have obtained their PhD in Flanders that start as a postdoctoral researcher is rather low when compared to their Belgian colleagues. However, their share is increasing: it used to be 10% in cohort 1 and it increased to 18% in cohort 2. The share among Belgians is respectively 41% and 40%.
 - b. The share that eventually starts as professor is very low: 3% in cohort 1 and 1% in cohort 2. Among Belgians it is respectively 31% and 12%. Attention: the share in cohort 2 will still grow: it takes time from PhD degree to finally become professor.
- Gender and career paths inside academia. The share of male doctorate holders starting as a postdoctoral researcher differs only little of that of female doctorate holders: in cohort 1, more women than men started a postdoc (35% compared to 33%), in cohort 2 the opposite was true (32% versus 35%). The shares starting as professor are lower among women than among men (respectively 22% versus 26% in cohort 1 and 8% and 10% in cohort 2), with only one exception: in Human sciences in cohort 1 more women than men started as professor. It also takes longer for women than for men to start as a professor. Once professor the further promotion happens faster among men when compared to women (Dossier Vlaams Indicatorenboek, 2019).

Table 4. Career situation eight years after starting as an assistant professor broken down by gender for the 1999-2002 and 2005-2008 cohorts in the Flemish Community (1)

	Assistant professors who started in 1999-2002		Assistant professors who started in 2005-2008	
	Men (N = 410)	Women (N = 143)	Men (N = 367)	Women (N = 155)
Assistant professor	22.4%	27.3%	18.5%	30.3%
Associate professor	45.7%	57.3%	57.2%	56.8%
Full professor	30.2%	15.4%	24.0%	12.9%
Senior full professor	1.7%	0.0%	0.3%	0.0%
Comparison between men and women	p = 0.002	p = 0.002	p = 0.003	p = 0.003

(1) The leavers are excluded from this table

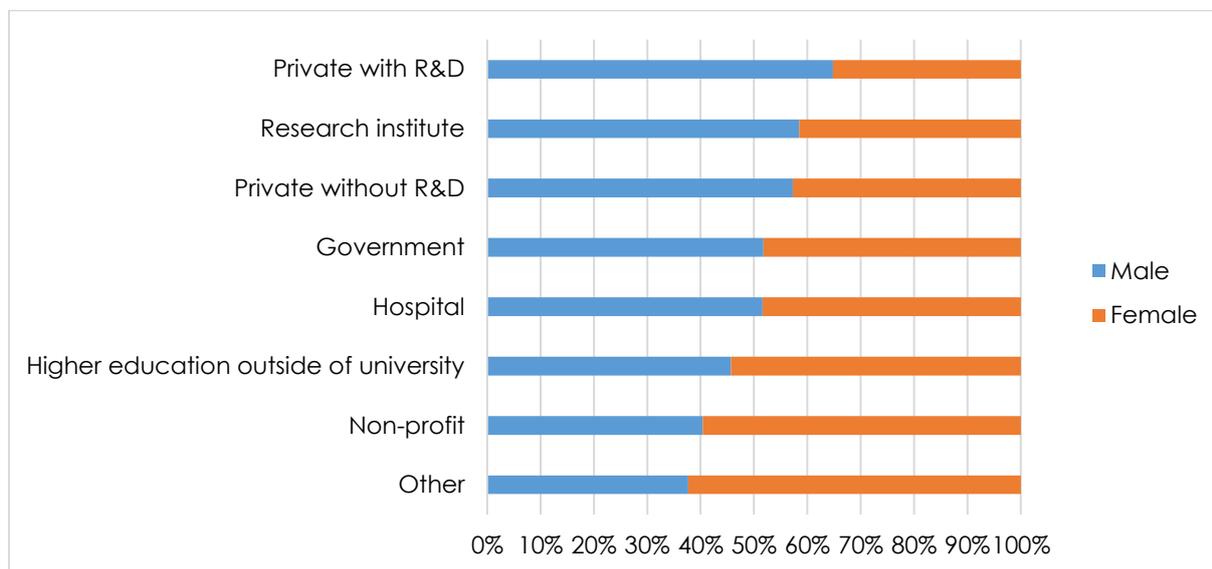
- Gender and career paths outside of academia. PhD Career Survey in Flanders, obtained by ECOOM-UGent indicates that there are differences between men and women for the following sectors: private industry with R&D activities, the higher education sector, the non-profit sector, and "other". More specifically: more men have a first job in the private sector with R&D as compared to

⁶⁶ <https://biblio.ugent.be/publication/8732757>



women. The opposite is true for the sectors of higher education, non-profit and “other”.

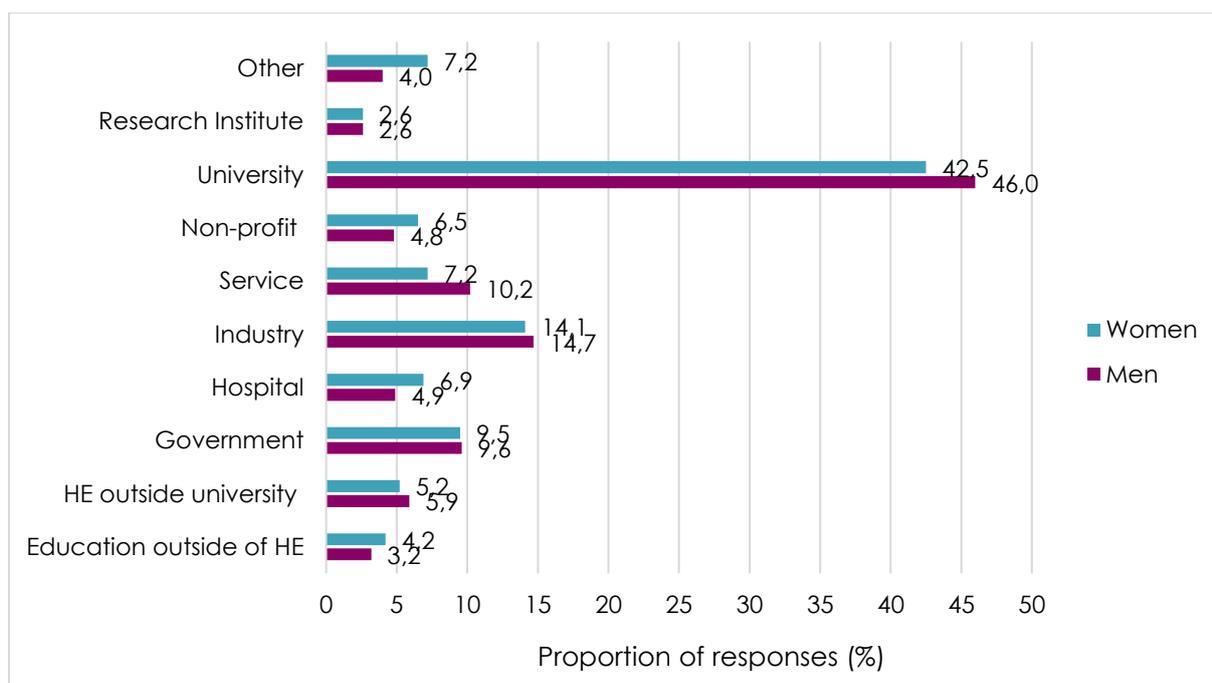
Figure 18. Employment in a given sector broken down by gender in the Flemish Community (n = 1535)



➤ **The French Community**

- Gender and sector of employment. When we look at the sector of employment by gender, we see differences for the university sector (Figure 19). Women doctorate holders are less likely to work in the university sector than men (Wald $\chi^2(1) = 4.74, p < .05; OR = .82, [CI = .68-.98]$).

Figure 19. Sector of employment by gender in the French Community

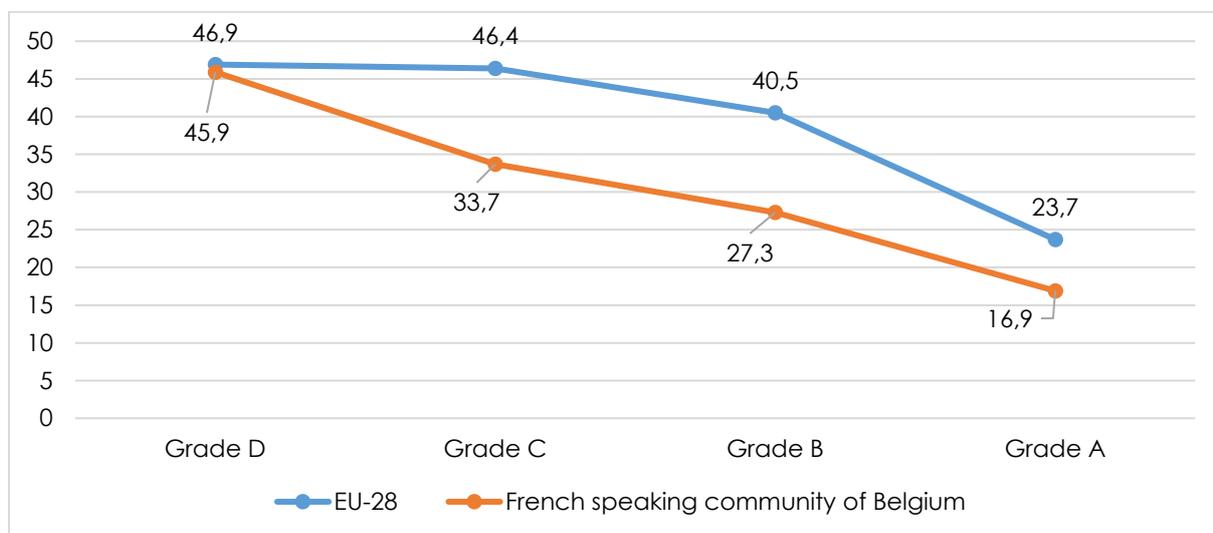


HE = Higher education



- Gender and career paths inside academia. As studies conducted in the French Community of Belgium within the framework of the GARCIA project^{67,68} highlight, the career model in Belgium may affect women academics more adversely. For instance, although most researchers feel that work-life balance is hard to achieve, this feeling is more present among mothers. In addition, researchers who are mothers seem to be more pessimistic about their job prospects than researchers without children and fathers. These gendered patterns are reflected when we consider the share of women in academic staff, which rapidly declines as women advance to higher grades.^{69,70}

Figure 20. Proportion (%) of women among academic staff, by grade and total in the French Community, 2016



To a lesser degree, we see a similar pattern when we specifically consider the share of women among the F.R.S.- FNRS researchers.⁷¹ Although at the doctoral level, there is not an important difference (47% women), the proportion of women slightly decreases at post-doctoral level (41% women) and goes down to 33% for permanent scientific staff.

⁶⁷ Dubois-Shaik, F, Fusulier, B (2016) Toward a gendered pipeline typology: A comparative analysis across six european countries, GARCIA working paper no. 12, University of Trento (ISBN 978-88-8443-694-8). Available at: http://garciaproject.eu/wp-content/uploads/2016/10/GARCIA_working_papers_12.pdf.

⁶⁸ Farah Dubois-Shaik and Bernard Fusulier (eds.) (2016) *Experiences of Early Career Researchers/Academics: a Qualitative Research on the Leaky Pipeline and Interrelated Phenomena in six European Countries*, GARCIA working paper n. 11, University of Trento (ISBN 978-88-8443-689-4)

⁶⁹ Grade A: The single highest grade/post at which research is normally conducted. Grade B: Researchers working in positions not as senior as top position (A) but more senior than newly qualified PhD holders. Grade C: The first grade/post into which a newly qualified PhD graduate would normally be recruited. Grade D: Either postgraduate students not yet holding a PhD degree who are engaged as researchers, or researchers working in posts that do not normally require a PhD.

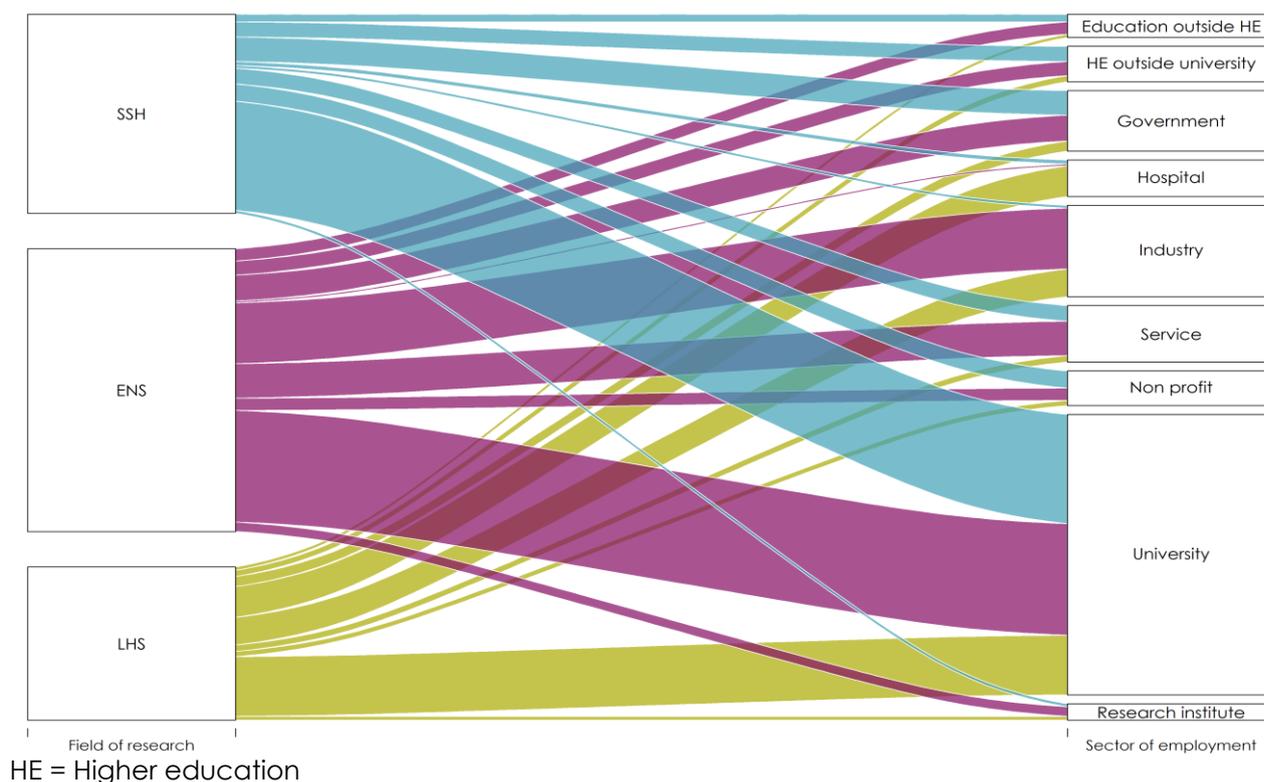
⁷⁰ European Commission (2019) She Figures 2018, Publications Office of the European Union, Luxembourg. Available at: https://ec.europa.eu/info/publications/she-figures-2018_en

⁷¹ F.R.S.-FNRS (2018). Rapport sur l'état de l'égalité de genre. Accessed at https://www.frs-fnrs.be/docs/FRS-FNRS_Rapport_etat_egalite_genre_2018.pdf



- Research fields and career paths. **Figure 21** demonstrates the flow between research fields Exact and Natural Sciences (ENS), Life and Health Sciences (LHS) and Social Sciences and Humanities (SSH). Even though the number of candidates is much higher than the number of permanent positions available in the university sector, doctorate holders choose to stay in large numbers in this sector regardless of their field of research.

Figure 21. Flow between the fields of research and sectors of employment in the French Community



2. Evidence of the views of the employers of doctorate holders (e.g., perception of employability, perception of value added of doctoral education and postdoctoral training, recognition of doctoral and postdoctoral experience, etc.)

➤ The Flemish Community

In Flanders, the mobility of doctorate holders from academia to the non-academic labour market is a two-sided story. Until now the employer-side of this outgoing mobility has often been overlooked, leaving many questions unanswered. For instance, what do non-academic employers think about doctorate holders? A review of the little number of studies conducted about this topic⁷² shows that both European and Flemish non-academic employers think that doctorate holders have a lack of management skills, a low ability to adapt, and little connection with the real world. On the other hand, doctorate holders are positively characterized as having sound scientific/research and work-organisational skills, being fast learners, and being expert innovators.

⁷² Wille, L., Legrand, V., Mortier, A., Levecque, K. (2020). PhD holders through the eyes of non-academic employers: A state-of-the-art literature review. ECOOM-brief 32 ECOOM UGhent.



Another relevant yet pending question concerns non-academic employers' hiring of doctorate holders. Do they hire doctorate holders, or are they considering this? What are reasons to (not) hire doctorate holders? For what kind of functions do they (consider to) hire doctorate holders and what do they (consider to) offer doctorate holders compared to masters? To provide answers to these questions in a Flemish context, ECOOM-UGent will launch the Survey of Employers among companies in Flanders in 2022. The insights gained in this way will help to further perpetuate and consolidate the intersectoral mobility of doctorate holders.

➤ The French Community

In the French Community, the most recent data on the views of employers of the doctorate is coming from the "Recruiting Talents⁷³" survey, which was conducted between January and July 2021. The survey includes 614 non-academic employers⁷⁴ (29.8% female), from organisations that are mostly based in Wallonia and Brussels. 89.6% ($n = 542$) of respondents had supervisory responsibilities (e.g., managers, directors, heads of service, and/or CEOs), with an average of 7.2 years of experience in their organisation. 39.7% ($n = 240$) indicated that they had a doctoral degree and 76.5% ($n = 414$) had staff members with a doctorate working in the organisation.

The participants worked across 17 different activity sectors. The activity sectors with highest number of participants were as follows: 31.9% in professional, scientific and technical services (e.g., scientific research and development, architectural and engineering activities, technical testing and analysis, legal and accounting activities, or advertising and market research), 18.0% in public administration (e.g., administration of the economic and social policy), 12.4% in manufactured products (e.g., manufacture of food products or manufacture of basic pharmaceutical products and pharmaceutical preparations), 8.8% in information and communication services (e.g., telecommunications or publishing activities), and 5.8% in human health (e.g., hospital activities or residential care)⁷⁵.

The organisations represented in the sample were mostly autonomous (68.6%). 21.4% of participants worked for an organisation that was part of a multinational group, and 10.0% worked for an organisation that was part of a national group. 38.2% of participants belonged to large organisations (250 or more employees), 23.8% to medium organisations (50 to 249 employees), 25.1% to small organisations (10 to 49 employees), and 12.8% to micro-organisations (1 to 9 employees).

- Welcoming PhD applications. Out of 569 non-academic employers who answered the question "would your organisation welcome more applications from PhD holders?" 45% ($n = 258$) answered "yes", as opposed to 42% ($n = 238$) who answered "no". Interestingly 73 employers (12.8%) indicated the need for more information on doctorate holders, particularly "on their added-value compared to master's holders".
- Recruitment of doctorate holders. In the survey, non-academic employers were asked about the job offers posted by their organisations. It seems like for most organisations in the sample having a PhD is not mentioned as a requirement since 71% of respondents chose "no". However, 37% mentioned that in some job offers a doctoral degree was mentioned as an asset in the job description.

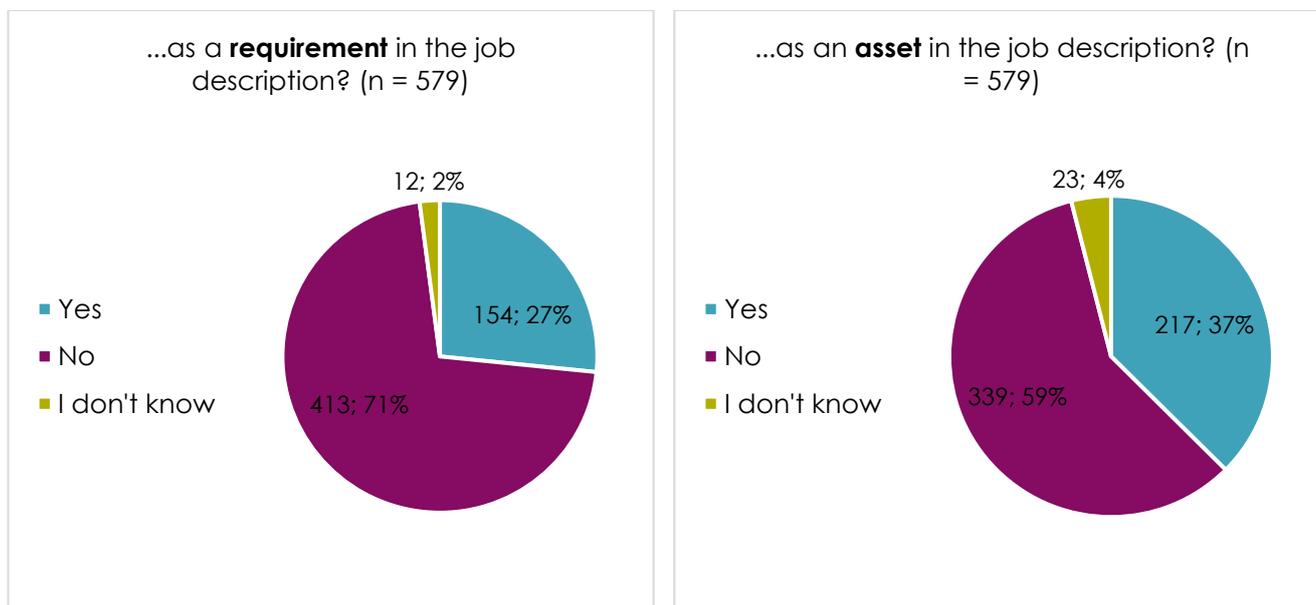
⁷³ <http://www.observatoire.frs-fnrs.be/media/recruiter-des-talents.final.eng.pdf>

⁷⁴ 5 additional individuals withheld their consent to participate.

⁷⁵ The activity sectors listed come from the [NACE Coder classification system](#). They have been chosen and, where necessary, specified by the participants themselves.

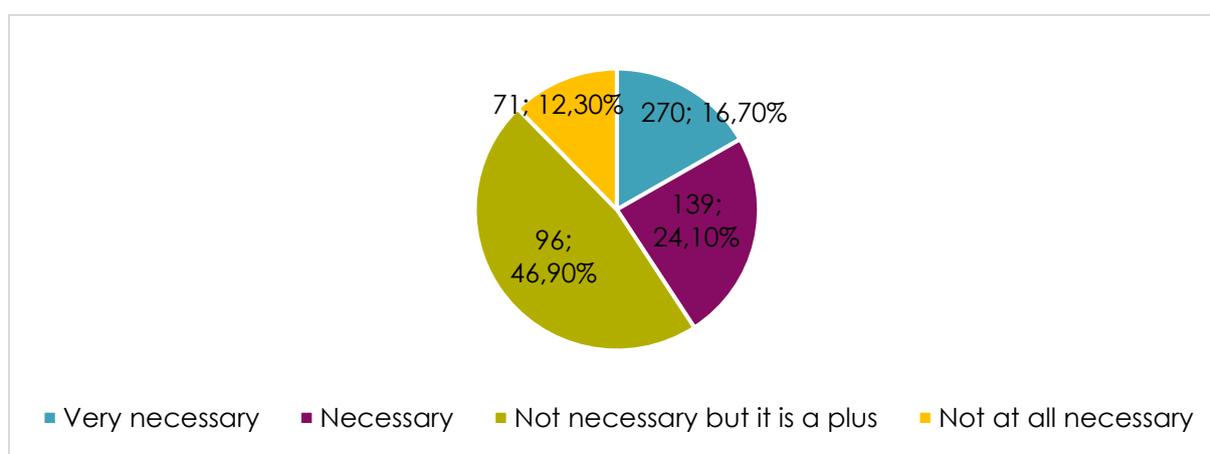


Figure 22. Answer of non-academic employers from the French Community to the question “In all or some job offers posted by your organisation, is having a PhD degree clearly mentioned...”



- o Importance of professional experience outside of university for non-academic employers. In the survey, non-academic employers were asked how necessary it was for doctorate holders to have professional experience outside of university to be hired by their organisation. Interestingly, only 12.3% of non-academic employers found it “not at all necessary”. For a very large majority of them to have professional experience outside of university was either “necessary” or “very necessary” or it was “a plus”.

Figure 23. Answer of non-academic employers from the French Community to the question “In your opinion, how necessary is it for PhD holders being hired by your organisation to have professional experience outside of university in general?” (n = 576)

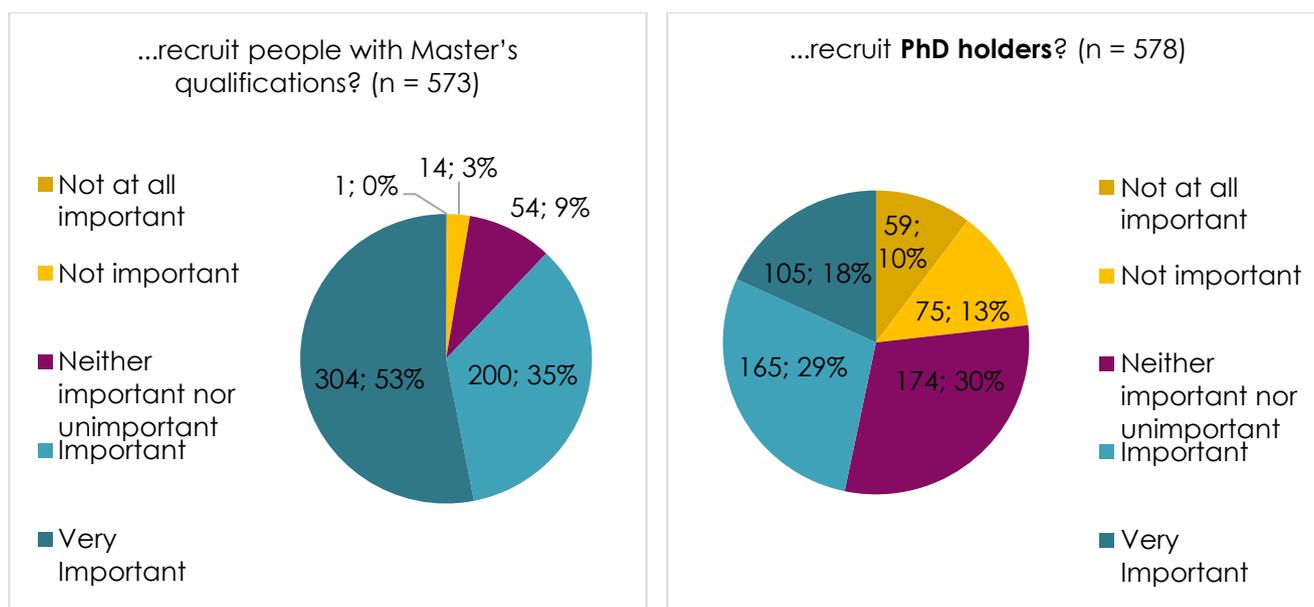


This finding raises the question of how that experience can be provided during doctoral and postdoctoral training.



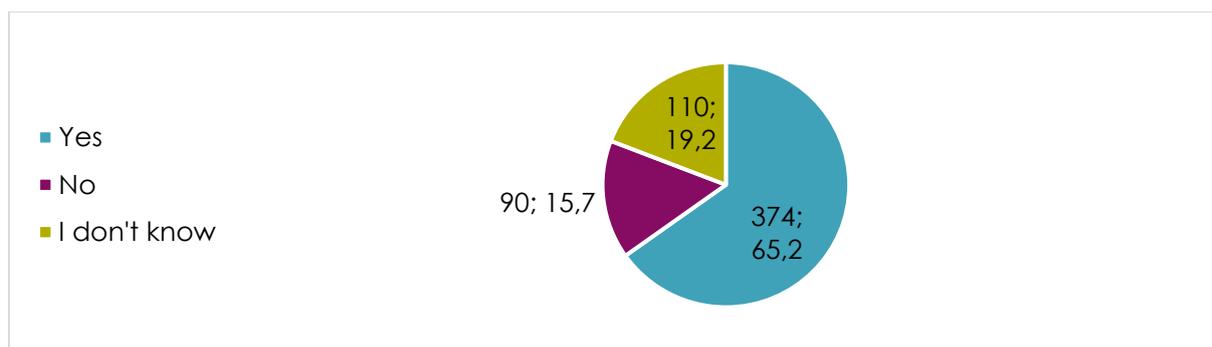
- Importance to recruit doctorate holders compared to MA holders. In the survey, non-academic employers were asked how important it was for their organisation to be able to recruit people with (a) Master's qualifications and (b) doctorate holders. The results showed that even though for most non-academic employers (88%), it is either "important" or "very important" to recruit MA's holders, this percentage is almost cut by half when it comes to recruiting doctorate holders with 47% of employers indicating it to be "important" or "very important" for their organisation.

Figure 24. Answer of non-academic employers from the French Community to the question "In your opinion, how important is it for your organisation to be able to..."



- Employability of doctorate holders. Non-academic employers answered if doctorate holders met their organisation's expectations of employability. Employability was defined as "the capacity to find and keep a job, to progress at work and to adapt to change throughout one's professional life". For many non-academic employers, doctorate holders did meet their expectations. Interestingly 19% of respondents chose "I don't know".

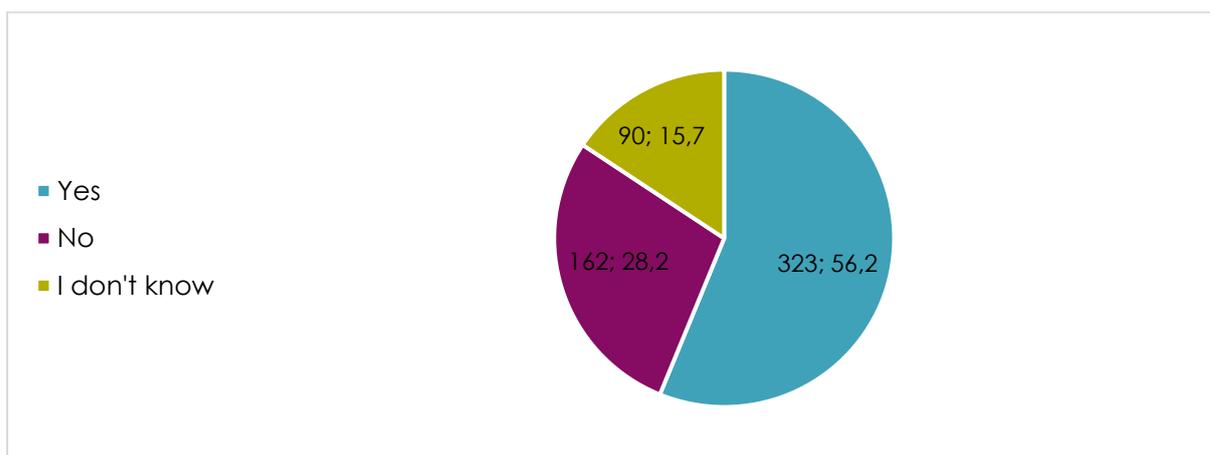
Figure 25. Answer of non-academic employers from the French Community to the question "In your opinion, do doctorate holders meet your organisation's expectations of employability?" (n = 574)





- o Added value of PhD. Given that sometimes, doctorate holders are in competition with master's holders, we wanted to find out the opinion of employers on the added value of PhD. Although more than half (56%) of respondents answered that doctorate holders had an added value for their organisation compared to those with master's qualifications, 28% answered "no" to this question.

Figure 26. Answer of non-academic employers from the French Community to the question "Do PhD holders have an added value for your organisation compared to those with master's qualifications?" (n = 575)



Participants were then asked the open-ended question "why?" to explain their choice. 86 people who chose "no" wrote their answer. The answers we received could be categorized into two major categories:

- Organisation-specific factors: For 28 employers, the type of sector of the organisation, the size (e.g., too small) or organisation's mission (e.g., no need to the research or no need of expertise) were given as an answer. For these employers, MA or BA were enough. The jobs within the organisation did not require a doctoral degree.

"A master's degree (if possible, in engineering) is more than enough and gives a good background to start in consultancy. The doctorate does absolutely nothing more."

- PhD-specific factors: 34 employers gave PhD-specific factors. For them, doctorate holders were considered to be "too specialised", too academic" or too "theoretical" to have an added value. In addition, they were perceived to have difficulties adapting to non-academic sectors.

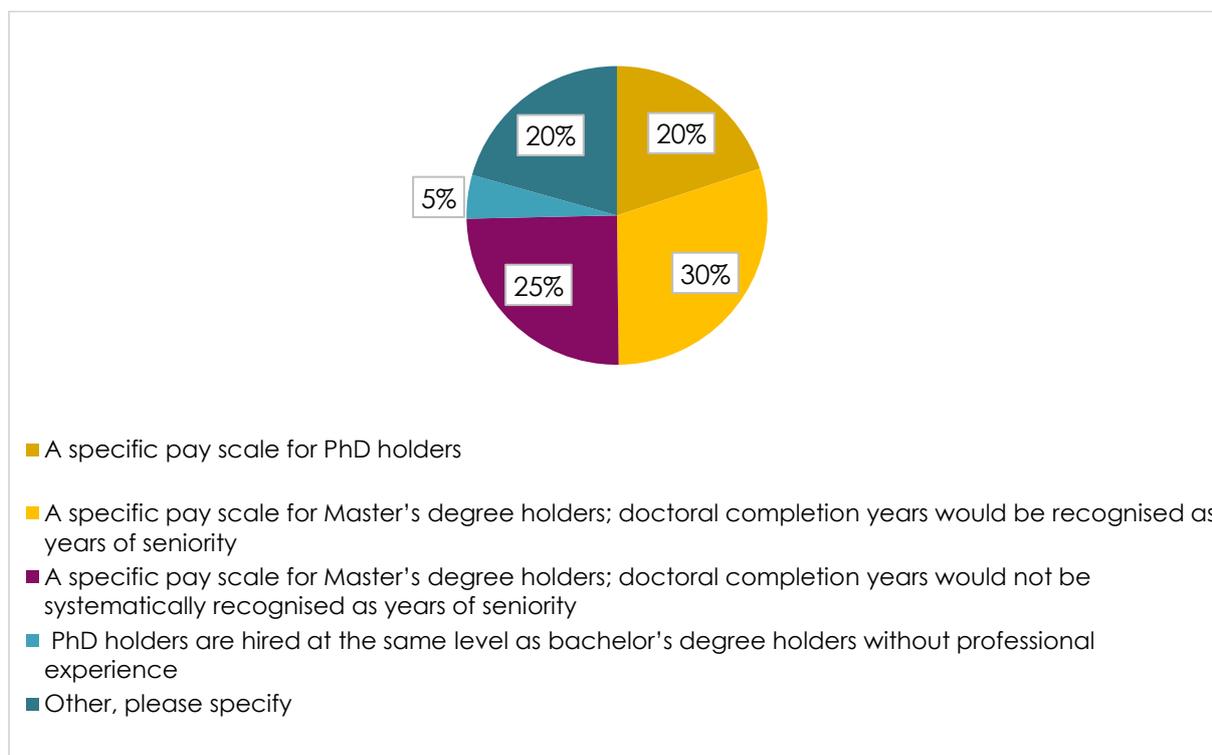
*"They are completely hands off and cannot work with short timeline. "
"Their academical experience is focused on other objectives/priorities, it may take a considerable amount of time for them to understand ours."*

- o Recognition of the doctoral experience. The question of how the starting salary of a person with a doctoral degree could be calculated outside of academia was considered in the survey. It is not surprising that the doctoral degree is rarely recognized by non-academic employers. For 30% of respondents, doctorate holders have the pay scale of master's or bachelor's degree holders. Importantly, for 20% of respondents, although doctorate holders do not have a specific pay scale, years doing the doctorate are considered as years of seniority, implying an increase in their salary.



Please note that those who answered "other", mostly specified that the pay depended on the function, the skills, and the role but not on the degree.

Figure 27. Answer of non-academic employers from the French Community to the question "Within your organisation, how would the starting salary of an employee who has just obtained a PhD degree generally be calculated? (n = 569)"





D. INFORMATION ON POLICY INITIATIVES

Policy initiatives that were implemented after 2010 to diversify the careers of doctoral and postdoctoral researchers (working within and beyond academia) and promote workforce diversity and inclusion in Belgium are synthesized in [Table 2](#). It is important to note that measurable targets were identified for few initiatives.

Table 5. Recent policy initiatives to diversify the careers of doctoral and postdoctoral researchers in Belgium

THE FRENCH COMMUNITY			
Governments/Agencies	Document title, hyperlink	Purpose and content of the policies, measurable targets and policy levers used	Observed effects of the policy
French Community	<p>Communiqué of the Government of the French Community</p> <p>« Communiqué Gouvernement De la Fédération Wallonie-Bruxelles »</p> <p>Séance du 24 mars 2022 20220324_CP_GFWB.pdf (cfwb.be)</p> <p>Séance du 29 avril 2021 20210429_CP_GFWB.pdf (cfwb.be)</p>	<p>the French Community has decided to allocate 5 million euros to support higher education establishments (universities and higher education institutions outside of university) and their researchers in obtaining European funding dedicated to research. This allocation aims to</p> <ul style="list-style-type: none"> • Create and/or strengthen the cells dedicated to supporting researchers • Organize events to encourage researchers to submit a project to the European Union and inform them on the possibilities • Provide the necessary funding to decrease researchers' teaching load to allow them to prepare one or more European projects; • Set up financial instruments to support very good projects or very good candidates • Increase the pool of applicants for project funding from the European Council <p>Measurable targets:</p>	



		<p>Number of applications to EU projects Number of organize event and information sessions</p> <p>Policy levers used: Funding Organisational</p>	
The Walloon region	<p>Recovery Plan for Wallonia October 2021</p> <p>« Plan de Relance de Wallonie Octobre 2021 » https://www.wallonie.be/sites/default/files/2021-10/plan_de_relance_de_la_wallonie_octobre_2021.pdf</p>	<p>Under its axis one "Focus on youth and Walloon talents", this plan aims to promote research and development, more specifically applied research and innovation technologies.</p> <p>Policy levers used: Funding Informational</p>	
French Community	<p>Decree of 3 May 2019 on various measures related to higher education and research.</p> <p>« Décret du 3 mai 2019 portant diverses mesures relatives à l'Enseignement supérieur et à la Recherche » http://www.ejustice.just.fgov.be/cgi/article_body.pl?language=fr&caller=summary&pub_date=19-08-02&numac=2019030780</p>	<p>This decree ensures continued annual funding to F.R.S.-FNRS to cover all or part of the expenses related to the activities of the "Observatory of Research and Scientific Careers" (Table 6).</p> <p>Measurable targets: The results of surveys and analyses are systematically published on the dedicated website</p> <p>Policy levers used: Funding: Permanent financial support of a dedicated service, through decree</p>	<ul style="list-style-type: none"> • Surveys conducted on the job transition of doctorate holders (2019 and 2022) • Publications of reports⁷⁶ • Publications of online articles • Presentations and webinars • Participation to scientific conferences • Creation of annual activity reports

⁷⁶ All publications of the Observatory can be found on this page: <http://www.observatoire.frs-fnrs.be/publications.html>



<p>French Community</p>	<p>Order of the Government of the French Community granting a subsidy to F.R.S.-FNRS for the creation of the Observatory of Research and Scientific Careers imputed on the 2018 budget</p> <p>« Arrêté du Gouvernement de la Communauté française octroyant une subvention au F.R.S.-FNRS pour la création d'un Observatoire de la Recherche et des Carrières Scientifiques imputée sur le budget de l'année 2018 »</p>	<p>This order ensured the creation of an Observatory of Research and Scientific Careers. This structure aims to track and analyse the careers of researchers through surveys and data cross-referencing, develop knowledge on the doctoral and postdoctoral process and make recommendations to facilitate the professional transition of doctorate holders and optimise the doctoral process in order to meet the expectations of researchers and society.</p> <p>Measurable targets: The results of surveys and analyses are systematically published on the dedicated website</p> <p>Policy levers used: Funding: Temporary financial support of a dedicated service</p>	<ul style="list-style-type: none"> • Same as above
<p>French Community</p>	<p>Decree of 10 March 2016 establishing the Committee on Women in Science</p> <p>« Décret du 10 mars 2016 instituant le Comité Femmes et Sciences »</p> <p>https://www.galilex.cfwb.be/document/pdf/42601001.pdf</p>	<p>This decree</p> <ul style="list-style-type: none"> • establishes the “Committee on Women in Science⁷⁷” to promote and improve the participation of women in scientific and academic careers. • ensures funding for a gender contact person from each university and the F.R.S.-FNRS. The gender contact person who is responsible for gender-related questions has three missions: information, raising awareness, and networking. <p>Policy levers used: Organisational Regulatory</p>	<p>Establishment of Committee on Woman in Science</p> <p>Research awards for researchers working on gender issues⁷⁸</p> <p>Recommendations to improve the participation of women in science⁷⁹</p> <p>Publication of an annual</p>

⁷⁷ [Accueil | Blog du Comité Femmes & Sciences \(femmes-sciences.be\)](#)

⁷⁸ [Prix CF&S 2022 - Master de spécialisation en études de genre | Blog du Comité Femmes & Sciences \(femmes-sciences.be\)](#)

⁷⁹ [Avis | Blog du Comité Femmes & Sciences \(femmes-sciences.be\)](#)



		Funding	"gender report" by each French speaking university and the F.R.S.-FNRS report" giving statistics on gender balance
French Community	<p>Circular n°4840 on the recognition of the seniority of researchers</p> <p>« Circulaire n°4840 du 20/05/2014 sur la reconnaissance de l'ancienneté des chercheurs »</p> <p>http://www.recherchescientifique.be/index.php?eID=tx_nawsecuredl&u=0&g=0&hash=fd05af36b6e2509e407a8b73323d543fa91962ae&file=fileadmin/sites/sirs/upload/sirs_super_editor/sirs_editor/documents/Circulaire/Circulaire_sur_la_reconnaissance_de_l_ancienete.pdf</p>	<p>Following the European Charter for Researchers, the European Code of Conduct, this circular encourages employers of researchers to recognize all types of mobility and research experience in the private sector as seniority.</p> <p>Policy levers used: Informational</p>	
French Community	<p>"Paysage" Decree of 7 November 2013, defining the landscape of higher education and the academic organization of studies.</p>	<p>This decree covers almost every aspect of university functioning based on the principles of the Bologna Process, including the doctorate.</p> <p>Policy levers used: Regulatory</p>	



	Décret du 7 novembre 2013 définissant le paysage de l'enseignement supérieur et l'organisation académique des études https://gallilex.cfwb.be/document/pdf/39681_044.pdf		
French Community	Decree of 17 July 2013 on financing research by Fonds national de la Recherche scientifique « Décret du 13 juillet 2013 relatif au financement de la Recherche par le Fonds national de la Recherche scientifique » https://gallilex.cfwb.be/document/pdf/39026_009.pdf	This decree <ul style="list-style-type: none">• guarantees funding to F.R.S.-FNRS with an additional 8 million € fund as of 2018.• ensures continued annual funding for the EOS-program, which promotes joint research between researchers in the Flemish and French communities by funding joint fundamental research projects in any scientific discipline. Policy levers used: Funding Regulatory	The total number of fellowships awarded per year can be found at the annual reports of F.R.S.-FNRS: https://www.frs-fnrs.be/fr/communication/publications
The French Community Wallonia-Brussels	Wallonia-Brussels Partnership for Researchers.	Adopted by the Governments of the Wallonia-Brussels Federation and Wallonia on 26 May 2011, The Wallonia-Brussels Partnership for Researchers is the contribution of the Wallonia-Brussels Federation to the implementation of the European Charter for Researchers, the European	



Federation and Wallonia region	http://www.recherchescientifique.be/index.php?eID=tx_nawsecuredl&u=0&g=0&hash=ba084c8d228e87764093e00d38db33c8a4c5b462&file=fileadmin/sites/sirs/upload/sirs_super_editor/sirs_editor/documents/SPW_DG06_Partenariat_FWB_UK_BD.pdf	<p>Code of Conduct, the European Commission Partnership for Researchers, the recommendations of the Helsinki Group on Women and Science and the human resources strategy of the key initiative "Innovation Union" of the European Union.</p> <p>It reflects the priority given by the Wallonia- Brussels Federation, through the Declarations of Community and Regional Policy and the Marshall Plan 2.Green, to investments in research and in particular in human capital and R&D personnel. This investment is meant to be both qualitative and quantitative and to approach all the problems relating to the careers and the mobility of researchers in an integrated way. This document is worked out in twenty-five actions, and among other things aims to:</p> <ul style="list-style-type: none"> • Encourage setting up permanent consultation between levels of power in Belgium on issues of federal competence that have an impact on the careers of researchers. • Promote the quality and the continuity of researchers' careers as well as the legibility of their status. • Examine the methods of creation of a scientific status for the "new activities" in research (e.g., confirmed senior researcher and project coordinator, joint research programme manager, technological platform manager, etc.). • Evaluate and identify good practices concerning doctoral training programmes (including transition between university and professional world, acquisition of transversal competences, interactions between universities, companies and other actors in civil society, etc.). • Support the initiatives facilitating the access of doctorate holders to jobs in the private, public and non-profit sectors. • Create a partnership with companies in order to supply the EURAXESS Jobs site with job offers. <p>Policy levers used: Informational</p>	
THE FLEMISH COMMUNITY			
Governments/Agencies	Document title, hyperlink	Purpose and content of the policies, measurable targets and policy levers used	Observed effects of the policy



<p>Flemish Community</p>	<p>“Amending various provisions of the Decree of the Flemish Government of 28 June 2013 on the framework of young researchers”</p> <p>24/05/ 2019</p> <p>“Besluit van de Vlaamse Regering tot wijziging van diverse bepalingen van het besluit van de Vlaamse Regering van 28 juni 2013 betreffende de omkadering van jonge onderzoekers”</p> <p>https://www.ejustice.just.fgov.be/cgi/article_body.pl?language=nl&caller=sum mary&pub_date=19-08-02&numac=2019041457</p>	<p>The amendment to the 2013 decree increases the government contribution and puts more emphasis on career development. It more specifically aims:</p> <ul style="list-style-type: none"> • to organize and increase the mobility of their researchers. This concerns international mobility, mobility between research disciplines or between the academic and business worlds. • to create a framework for the development, implementation and strengthening of activities in support of young researchers. For example, by offering extra education, training, coaching and awareness raising. In this way, universities can strengthen the further development of young researchers in the different phases of their careers. • In the new action plan for researchers, more attention is paid to mobility to and from industry, international mobility, career aspects, attracting and anchoring foreign top talents and interdisciplinarity, but also to well-being and stress prevention. <p>Policy levers used: Organizational Funding</p>	
<p>Flemish Community</p>	<p>Decree of 28 June 2013 of the Flemish Government on the framework of young researchers (called “OJO”)</p> <p>“Besluit van de Vlaamse Regering betreffende de omkadering van jonge onderzoekers”</p>	<p>The Flemish Government lays down an annual government contribution for the supervision and guidance of young researchers (doctoral and postdoctoral). To receive subsidies, universities must create a framework for and develop, implement, and strengthen activities related to the following objectives:</p> <ul style="list-style-type: none"> • Training of young researchers • Career development and promotion of career prospects • Strengthening the international orientation in the career of young researchers <p>Cooperation with other knowledge institutions within Flanders</p>	<p>The Department of Economy, Science and Innovation of the Flemish Region has commissioned an evaluation for OJO in 2018⁸⁰.</p> <ul style="list-style-type: none"> • Evaluation of organized activities: This subsidy translated in the enrichment of the training

⁸⁰ https://www.dialogic.nl/wp-content/uploads/2018/07/evaluatie_2018_omkadering_jonge_onderzoekers_ojo_mangementsamenvatting.pdf



	<p>https://data-onderwijs.vlaanderen.be/edulex/document.aspx?docid=14545</p>	<p>Measurable targets:</p> <p>In the use of funds, each beneficiary shall annually comply with the following minimum principles:</p> <ol style="list-style-type: none">1. training of young researchers (e.g., the beneficiaries organise training on scientific integrity)2. career development:<ol style="list-style-type: none">a) the website of each beneficiary includes information on statutes, employment conditions and career paths.(b) each beneficiary encourages open recruitment of doctoral and postdoctoral researchers in its own institution: vacancies shall, where possible, be published centrally.(c) all doctoral and postdoctoral researchers are provided with information on the broad labour market in function of a possible academic or non-academic career as an employed or self-employed person, and all interested doctoral candidates and postdoctoral researchers are prepared to position themselves in that market.(d) high-quality career guidance, e.g. mentoring and career interviews, is developed for doctoral and postdoctoral researchers;(e) the beneficiaries shall organize a single career event for doctoral and postgraduate researchers with a particular focus on a non-academic career, with the participation of the industrial sector and, where relevant, with other universities, colleges, research centers and the public sector.(f) each beneficiary organizes gender and diversity training for promoters, doctoral and postdoctoral researchers.(g) involving future employers in policy development on the training and guidance of young researchers so that supply meets the needs of the labour market.3. international orientation (e.g., all published vacancies at doctoral and postgraduate level are published on the European job portal site Euraxess)4. cooperation within Flanders :35% of the subsidies received are spent within a partnership with at least two other Flemish universities.5. all activities are monitored with a satisfaction survey	<p>offers provided by the university in terms of quantity (more courses), diversity of content (interdisciplinary and cross-disciplinary skills) and target groups (emergence of specific training courses for postdoctoral researchers).</p> <ul style="list-style-type: none">• Evaluation of participation and satisfaction. The evaluation identified two sets of participants: Frequent users and infrequent users. Those who participated in activities were generally satisfied.• Impact of OJO. <p><u>Cognitive impact:</u> The OJO raised the awareness of doctoral candidates for careers after thesis.</p> <p><u>Practical impact:</u> Increased training Increased awareness of supervisors: supervision became more structurally embedded Universities started to pay more attention to career aspects of doctoral and postdoctoral researchers.</p>
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		per activity. Policy levers used: Funding Organizational	However, the impact of OJO on future employers was found to be limited.
Flemish Community	Decision of the Flemish Government to release 4 million € for Flemish universities to better guide young researchers in their careers ⁸¹ 28/12/2011	This funding aims to <ul style="list-style-type: none">• support Flemish universities in making the careers of young researchers more attractive.• provide the young doctoral candidate with better training and guidance.• teach management skills, project management and academic English• raise the awareness of both researchers and the labour market: The doctorate holders should be able to make more conscious career choices. The labor market must also become more aware of the employability of this growing share of research talent.• attract more foreign researchers and offer researchers in Flanders more opportunities to work abroad. Policy levers used: Organizational Funding	

⁸¹ Ingrid Lieten Viceminister-President Van De Vlaamse Regering En Vlaams Minister Van Innovatie, Overheidsinvesteringen, Media En Armoedebestrijding
28 December 2011 4 Miljoen Voor Jonge Onderzoekers



Table 6. The creation of the Observatory of Research and Scientific Careers

An important initiative in the French Community to provide an information base and an evidence base on scientific careers and their diverse career paths has been the creation of the Observatory of Research and Scientific Careers. Comprehensive survey data for doctorate holders were not systematically collected in the French Community of Belgium. To address this gap, thanks to funding from the Federation Wallonia-Brussels (FWB), the Observatory of Research and Scientific Careers began its work in September 2018. Integrated in the F.R.S.-FNRS, this structure aims, among other things, to track and analyse the careers of researchers in the FWB through surveys and data cross-referencing. In collaboration with the six French-speaking universities, the Observatory is responsible for developing knowledge on the doctoral and postdoctoral process. It makes recommendations to facilitate the professional transition of doctorate holders and optimize the doctoral process to meet the expectations of researchers and society. Particular attention is paid to the various obstacles to a scientific career: stereotypes and discrimination related to gender, constraints related to the requirement of international mobility, impact of the pressure to publish early in one's career, etc. Although the Observatory initially started as a pilot project, given its importance, the Parliament of the Federation Wallonia-Brussels voted a decree in May 2019 to ensure continued annual funding to F.R.S.-FNRS to cover all or part of the expenses related to the activities of the Observatory of Research and Scientific Careers.⁸² Therefore, the job transition of doctorate holders from French-speaking universities may now be studied in the long term.

⁸² Ministère de la communauté française 3 MAI 2019. - Décret portant diverses mesures relatives à l'Enseignement supérieur et à la Recherche
http://www.ejustice.just.fgov.be/cgi/article_body.pl?language=fr&caller=summary&pub_date=19-08-02&numac=2019030780



E. INFORMATION ON EXISTING PRACTICES, PROGRAMMES, AND INITIATIVES

In recent years, multiple programmes and initiatives have been implemented in Belgium to diversify the career options of doctoral and postdoctoral researchers. Below we list some of these initiatives implemented first by funders (in the Flemish Community and in the French Community) and then by universities (in the Flemish Community and in the French Community).

1. Funders

➤ FWO (the Flemish Community)

- HR Excellence in Research. As a Member of the European Commission's HR Strategy Group, the FWO has elaborated a strategy to promote research careers in Flanders. Based on this strategy, the European Commission awarded the FWO with the "HR excellence in research" label in 2010, thereby recognising the efforts by the FWO to maximise career opportunities for researchers.

HR Strategy of FWO for 2019-2023 can be found here:

[HRS4R - strategie 2019-2023 v0 \(fwo.be\)](https://www.fwo.be/en/HR-Strategy-2019-2023)

- Equal Opportunity Policy.
 - All information is published both in Dutch and in English so that all relevant information is also accessible to foreign language speakers.
 - To avoid any discrimination based on age, the FWO uses relative scientific seniority (the number of years of research experience) as an eligibility requirement for fellowship and research project applications
 - The FWO does not impose a nationality requirement.
 - In the e-portal, there is not only a male (M) and female (F) but also a gender neutral (X) check box.
 - The FWO strives to achieve a diverse composition of the expert panels. More specifically in terms of gender, the FWO endeavours to ensure that no more than two-thirds of the members of its expert panels are of the same gender.
 - Panel members are made aware of unconscious biases in evaluating project and fellowship applications.
 - The FWO keeps, for each of its funding channels, statistics on the number of projects and fellowships applied for and granted per gender. These figures are published each year in the Annual Report.
 - Both at predoctoral and postdoctoral level, receive a bench fee to pay for the costs of their research. Where necessary, researchers can use this bench fee to pay for medical support in overcoming physical disabilities or functional impairments.
 - The FWO also makes it possible for both doctoral and postdoctoral fellows to move up the seniority limits by one year and to extend an ongoing fellowship by one year, for each pregnancy.
- Gender Equality Plan. The FWO Gender Equality Plan includes a description of requirements (e.g., dedicated resources) and recommended thematic areas (e.g., work-life balance and organisational culture) and how they can be translated into actions by the FWO. This plan was formally approved by the FWO's Board of Trustees on 22 December 2021.



The Gender Equality Plan of FWO can be found here:

[FWORB21150 Bijlage Gender Equality Plan](#)

- Open, Transparent and Merit-based Recruitment of Researchers. As doctoral and postdoctoral fellows are being selected and funded by the FWO, their procedures need to comply with the principles of open, transparent, and merit-based recruitment (OTM-R) as set out in the Charter and Code of the European Commission.
- Research careers. To provide young FWO researchers with the best possible opportunities to exploit their expertise also outside the academia, the FWO has implemented various new schemes to promote intersectoral mobility:

Doctoral and postdoctoral fellows of the FWO can carry out their research in collaboration with a company or other organisation.

- Every FWO researcher can spend 20 percent of their available time on activities other than the actual doctoral or postdoctoral research, so long as they contribute to the researcher's development. Such development in fact requires participation in activities as part of the doctoral training.
- A researcher may, however, also choose, in consultation with the supervisor, to devote all or part of this time to academic education or services. To develop specific skills, a junior researcher may also choose to do an internship within an organisation.
- Enterprising predoctoral researchers are given the opportunity to carry out a paid activity alongside their PhD provided such activity takes place outside the university and independently of their doctoral research.
- Postdoctoral researchers have the opportunity to suspend their fellowship to enable them to take up a paid full-time research fellowship or grant at a university, a scientific institute, within a company or organisation.
- When assessing researchers who apply for funding (candidates for fellowships or PI's for research projects) the FWO has implemented a policy that supports valorising relevant experience that was established not only within but also outside of academia, to allow for more diverse researcher profiles. Temporary breaks from an academic career, e.g., due to employment in industry, are explicitly taken into account during these assessments, as a measure to avoid disadvantaging mobility from industry, non-profit or government back to academia.

➤ **F.R.S.-FNRS (the French Community)**

- Non-discrimination policy
- The selection procedure at F.R.S.-FNRS is based on the sole criterion of scientific excellence irrespective the nationality, gender, sexual or political orientation of the researchers.
- Application forms to F.R.S.-FNRS research positions contain a section dedicated to career breaks allowing the applicants to document any career break longer than 2 months (occurring over the last 5 years).
- To avoid any discrimination based on age, for the three main fellowships (research fellow, postdoctoral researcher, and research associate), the eligibility criteria are based on the number of years following the graduation and giving access to the funding instrument (and not on the age of the applicant).
- During the maternity, paternity or adoption leave, the research fellow receives a replacement income paid by the mutual insurance company as from the time set by the law regarding sickness and invalidity insurance. In that case, the payment of the



remuneration is immediately suspended. The Fund gives the research fellow in the situation mentioned above an extra payment to the indemnity provided by the mutual insurance company to compensate for the loss of income.

- The eligibility period to F.R.S.-FNRS instruments is extended by one year per child (giving birth or adoption) for all applicants.
 - The fellowships interrupted due to a maternity, paternity or adoption leave can be extended for a duration equivalent to the duration of the interruption.
 - At all career stages, equal pay is ensured between men and women (at the same function and seniority) through fixed pay scales.
- o Gender equality
 - A systematic monitoring of gender data (submission and success rate of women and men by research domain and by instrument) is made after the end of calls for funding instruments, to make sure that there is no gender bias during the selection process.
 - A "gender contact person" has been appointed at the F.R.S.-FNRS for all actions pertaining to gender issues.
 - The F.R.S.-FNRS actively participates to the Belgian national group Women and Sciences and publishes a yearly report on the topic.
 - A Gender Equality Plan with actions to be implemented targeting gender balance in leadership and decision-making, gender equality in recruitment and career progression and work-life balance and organisational culture has been approved by the F.R.S.-FNRS's Board of Trustees in April 2022.

The Gender Equality Plan of F.R.S.-FNRS can be found here:

[Premier Plan d'égalité de genre du FNRS \(2022-2025\) \(frs-fnrs.be\)](https://frs-fnrs.be/premier-plan-d-egalite-de-genre-du-fnrs-2022-2025)

- o Recruitment/selection/evaluation procedure. F.R.S.-FNRS recruitment procedures are designed to meet the Charter and the Code requirements. Positions are opened to researchers of any nationalities, gender, age, etc. The evaluation is transparent:
- All documents pertaining to the F.R.S.-FNRS calls are available online (regulation, application forms, application guidelines, evaluators guidelines, composition of the scientific commissions, ...) in French and English.
- F.R.S.-FNRS call regulations present all the necessary requirements for the available positions as well as the eligibility criteria for applying and the evaluation criteria for the assessment.
- The F.R.S.-FNRS provides the researchers with information regarding the type of contract attached to the available positions. It also presents the benefits attached to the positions as well as the right and duties of the researchers towards the F.R.S.-F.R.S.-FNRS.
- The F.R.S.-FNRS selection procedures are based on international standards and adjusted according to the level of the position applied to. R1 selection procedure encompass file analysis by a central jury (i.e., Scientific Commission) (+ interview of the candidates depending on the supporting scheme). R2 to R4 applications are processed through a two-stage evaluation procedure with remote experts (min. 3 per file selected by the scientific officers of the F.R.S.-FNRS) and central jury (i.e., Scientific Commission) assessment. Research associate fellowship candidates have an additional final interview in their host university.
- The evaluation of applications submitted to the F.R.S.-FNRS considers various set of parameters concerning the researcher, the research project, and the research environment. The weighting of these parameters depends on the level of the position applied to. For the higher positions, another set of parameters is taken into account concerning the international recognition of the researcher.



- The bibliometric outputs are not only assessed quantitatively but also qualitatively as a section is available in the application forms where the applicants can describe their publication strategy. In addition, this information is not obligatory if considered not pertinent by the applicant. Scientific Commission members prior to their meetings are reminded that they should critically assess the applicant's outputs proportionally to their seniority.
- At the end of the procedure, full written feedback (anonymous remote experts reports and scientific commissions report) is given to all applicants.
- o Research careers. To provide researchers with the best possible professional experiences the F.R.S.-FNRS has implemented various measures. Doctoral researchers who have F.R.S.-FNRS fellowships have the right to do administrative work or tasks related to didactic supervision up to eight hours per week annually⁸³. In addition, postdoctoral researchers have the possibility to interrupt their F.R.S.-FNRS fellowship and use their 3-year fellowship over a period of 6 years, if an external postdoctoral funding is obtained to do research outside the French Community of Belgium⁸⁴.

2. Universities

➤ Training in transferable skills

All universities in Belgium have set up various training courses in transferable skills accessible to all researchers. These courses have a broad focus, ranging from communication skills to scientific integrity.

Some examples:

- o At UCLouvain, a team of doctoral candidates and postdocs has designed the MOOC "PhD and career development"⁸⁵ with the objective to reflect on their career plans in mind. This innovative training allows doctoral candidates to learn, think about and prepare for their future, thanks to the intervention of experts in supporting professional integration of doctoral candidates. The doctoral candidates have also the possibility to value their participation in the frame of their doctoral training.
- o ULiège offers multiple courses, in French and in English, targeting seven themes ranging from "starting your research to "supervision and leadership"⁸⁶ to develop the transferable skills of researchers at different stages in their career. The "Professional Skills for Research Leaders (PSRL)"⁸⁷ programme, which includes six workshops helps doctoral candidates identify a broad range of strategies and skills to establish themselves as research leaders.
- o In the Flemish Community, the OJO grant allowed training courses specifically designed for postdoctoral researchers to attune to their specific needs. For instance, at the Vrije Universiteit Brussel (VUB), "Leadership for postdocs" course is offered since 2016-2017, to train postdoctoral researchers on topics such as communication styles, dealing with resistance, giving feedback, etc.

⁸³ https://www.frs-fnrs.be/docs/Reglement-et-documents/FRS-FNRS_REGL_ASP_EN.pdf

⁸⁴ https://www.frs-fnrs.be/docs/Reglement-et-documents/FRS-FNRS_REGL_CR_EN.pdf

⁸⁵ <https://uclouvain.be/en/research/valodoc/news/a-mooc-to-reflect-on-your-career-plans-at-your-own-pace-this-is-what-uclouvain-offers-you.html>

⁸⁶ <https://www.recherche.uliege.be/books/formations-transversales/>

⁸⁷ [PSRL \(uliege.be\)](https://www.recherche.uliege.be/books/formations-transversales/)



➤ Career Development

- Raising awareness and informing doctoral candidates and postdoctoral researchers so that they can make conscious career choices

In all Belgian universities, there are information sessions or workshops on a variety of topics targeting different phases of the doctorate.

Some examples:

- At ULB a workshop entitled "AvanThèse"⁸⁸ is offered to students interested in doing a PhD to give information about the specificities of doctoral studies, careers in research, and the added value of a PhD even before they start the programme.
- Katholieke Universiteit Leuven (KU Leuven) offers a full-day programme "PhD Welcome Day"⁸⁹ for giving information on many aspects of the PhD (e.g., doctoral schools, well-being, etc.).
- VUB organises two times a year (Feb & Nov) an introductory week for new doctoral candidates to provide all information about the doctoral training, ethics and integrity, career perspectives, DMP and wellbeing (which is monitored on a yearly basis).
- Ghent University (UGent) introduced an onboarding track for all PhD candidates, with an additional section for international candidates, providing them with key information at the start of their PhD. This orientation track helps ensure all candidates start with the same basic information and understanding of the services available to them as well as the support structures around them, regardless of their background, scholarship, or appointment.

Many information sessions are organized to specifically target the job transition of doctoral candidates.

Some examples:

- Universiteit Hasselt (UHasselt) offers "Career development: Gain insight into your talents and ambitions"⁹⁰ workshop, which is a six-session workshop to inform doctoral candidates, to assist them in preparing for a job interview, and to ultimately help them transition to the labour market.
- Universiteit Antwerpen (UAntwerp) has started to offer the course "My Personal Development Plan as a PhD researcher"⁹¹ to help doctoral researchers critically reflect on their career development and professional goals, starting during their PhD, and elaborate a personal development plan.
- UGent recently reformed the way in which PhD candidates report on their progress each year, expanding the typical research progress report with a section on personal development supported by a new competency framework and guidance tool.

There are multiple tools and guidebooks at the disposition of researchers that have been created over the last few years.

Some examples:

- PhDs@Work was an inter-university project in the French Community. Within the framework of this project, Important resources have been introduced such as the « Welcome Pack »⁹², which gives resources to doctoral candidates on 12 different topics, ranging from the "strength of doctorate holders" to "job opportunities after

⁸⁸ <https://www.ulb.be/en/phd/information-about-phd-programmes>

⁸⁹ <https://set.kuleuven.be/phd/researchers/PhD-welcomePhD>

⁹⁰ <https://www.uhasselt.be/en/doctoral-schools/career-development-events-coaching-training-2022/career-development-gain-insight-into-your-talents-and-ambitions>

⁹¹ <https://www.uantwerpen.be/en/centres/antwerp-doctoral-school/doctoral-study-programme/training-offer/course-offer-ads/4700ads006/>

⁹² <https://www.unamur.be/recherche/euraxess/phd-welcome-pack>



- the doctorate". The brochure « Yes I can! Assessing my doctoral skills»⁹³, which helps doctoral students evaluate their skills was also developed within this framework.
- The career counselling at UGent and ECOOM-UGent created a guidebook⁹⁴ that supports young researchers in their job search (San Giorgi & Van Daele, 2016).
 - In addition, many universities organize events where doctoral candidates can freely exchange with one another or former doctoral candidates who have successfully made the transition to the non-academic labour market
 - The Net@Work at UCLouvain⁹⁵ are recurrent meeting events between doctorate holders and doctoral candidates.
 - USL-B organizes lunch seminars called "Le temps de midi des Doctorant·e·s"⁹⁶ where doctoral candidates can informally exchange around several themes that could interest them, ranging from "reconciling private life and research" to "Linkedin, why do you need it?"
 - UMONS and ULiège have created the PhD House^{97,98} as a space for doctoral candidates to exchange, co-work, network, collaborate and prepare their professional careers and simply socialize. There are several events organized annually.
- o Career counselling/ Individual coaching

Many universities in Belgium provide career counselling for doctorate candidates and postdoctoral researchers.

Some examples:

- The YouReCa Career Center⁹⁹ at KU Leuven offers individual career guidance to all young researchers. Participation in the career workshops is a mandatory prerequisite to apply for individual guidance.
- The "Cellule ProDoc" at UNamur provides individual coaching to all doctorate holders who are in need of advice for "after thesis". The service advises doctorate holders on their job search and job interviews and helps them reflect on their career and define a personalized career plan.
- The Career Centre at VUB guides young researchers to find the right job. They provide training and individual coaching. Career training and transferable skills training is inclusive to the mandatory doctoral training.
- A new PhD Career Hub at UGent will organise tailored events for sections of the PhD population to help them prepare for the transition into their next role (academic or non-academic) and will offer career coaching on an individual basis. This Hub will supplement the extensive course offer around career management that has been built up at UGent over the past decade (CV writing, grant writing, pitch training, etc.).

In addition to universities, a non-profit based in Brussels that is called "Focus Research" "Objectif Recherche" provides individual coaching¹⁰⁰. Focus Research supports the professional development of early career researchers in and outside of academia through personalized coaching and information on career resources. In addition, one of their goals is to promote the doctoral degree as an asset among employers.

⁹³ <https://cdn.uclouvain.be/groups/cms-editors-p2/brochures-thematiques/Brochure-PhDs%40Work-EN.pdf>

⁹⁴ <https://biblio.ugent.be/publication/8613448/file/8613452>

⁹⁵ <https://uclouvain.be/fr/chercheur/valodoc/doctorat-et-apres.html>

⁹⁶ [PhD@work - Université Saint-Louis - Bruxelles \(usaintlouis.be\)](https://www.usaintlouis.be)

⁹⁷ <https://orbi.uliege.be/bitstream/2268/260174/1/PhDHouse-Plan%20de%20projet.pdf>

⁹⁸ <https://web.umons.ac.be/en/recherche/le-doctorat/phd-house-en/>

⁹⁹ <https://www.kuleuven.be/personeel/careercenter/youreca-career-center/yourecaENG/youreca-careerguidance>

¹⁰⁰ <https://www.objectif-recherche.be/en>



- Mentorship programmes

Many universities in Belgium have started mentorship programmes to guide researchers. Some examples:

- The Team Mentorship programme¹⁰¹. Supported by the French Community, the T'M programme is an interuniversity programme lead by the UMons that offers 150 junior researchers (First Stage Researcher R1) from all research fields, who are in the process of completing their doctorate the opportunity to define their career objectives with the help of a mentor through constructing an interpersonal relationship. The project has two phases: orientation phase (4 months) where junior researchers get more information about the labour market through coaching, information sessions or company visits, and the in-depth phase (4 months) where each mentee is paired with a mentor to develop a career strategy and discover future positions.
- MentaMenza Programme¹⁰² at UGent is committed to helping postdoctoral researchers to improve their skills and advance their academic or non-academic career. Mentors are experienced Ghent University professors or doctorate holders working beyond academia. Apart from the one-on-one meetings, mentors and mentees are invited to a series of activities and workshops.

➤ **Facilitating the recruitment of doctorate holders/researchers by employers**

- Directories

In 2021, Flemish universities launched the PhD Talent Pool Flanders¹⁰³, an online recruitment platform designed to align the supply and demand better and faster for PhD talent. Doctorate holders can create their profile to make it visible for employers and look for vacancies and companies can post their vacancies. In addition, there are free training courses and events.

In 2021, the Observatory of Research and Scientific Careers published "PhD Employers Directory"¹⁰⁴ that lists 203 organizations based mostly in Wallonia and Brussels from different sectors: industry, service and government/public who would be interested in hiring doctorate holders. This directory, shared with the universities, is a tool for doctoral candidates and doctorate holders who are looking for a job outside of academia and career guidance professionals who advise them.

- Networking events

Universities organize events such as job fairs where non-academic employers get the opportunity to exchange directly with doctoral candidates or doctorate holders.

- The annual event "Interuniversity Job Market for Young Researchers"¹⁰⁵ organized by five Flemish universities gives the opportunity to speak face to face to recruiters.
- TRANSUNIV¹⁰⁶ project aimed to facilitate and promote the mobility and job transition of young doctoral candidates in the France-Wallonia-Flanders cross-border area. The partner universities of the project were: ULille, UGhent, KUL Kulak, UMONS, UClouvain Fucam Mons, and UNamur. Within this framework, job fairs were organized annually with the participation of non-academic employers.

¹⁰¹ <https://www.teammentorship.be/en>

¹⁰² <https://www.ugent.be/en/work/mobility-career/postdoc-talent-management/mentoring#SelectedforMenTa&MenZa?Andthen?>

¹⁰³ <https://phd-talents-be.jobteaser.com/en>

¹⁰⁴ <http://www.observatoire.frs-fnrs.be/media/phddirectory.obs.2021.pdf>

¹⁰⁵ <https://jobmarketforyoungresearchers.be/en/phd-students>

¹⁰⁶ <https://www.unamur.be/recherche/euraxess/emploi>



➤ Supporting and encouraging intersectoral mobility

Given the importance that non-academic employers place on professional experience outside of academia to hire candidates, there is a need to offer this experience during doctoral or postgraduate training.

- Internships. To facilitate internships and the intersectoral mobility of researchers, FWO made a change in their regulation (please see section E, funders, FWO). Every FWO researcher can spend 20 percent of their available time on activities other than the actual doctoral or postdoctoral research, so long as they contribute to the researcher's development. Although this is a very important initiative, the impact of this change is limited to doctoral candidates who have FWO funding.
- Collaborative doctorates. There are important initiatives such as the Win4Doc¹⁰⁷ of the Walloon Region, and the Applied PhD¹⁰⁸ of the Brussels Capital Region, or the Baekeland mandates¹⁰⁹ in the Flemish community, however these initiatives are limited in their scope. These funding schemes could be broadened to include multiple sectors, including the public sector, and candidates from all domains, including those from Social Sciences and Humanities and to fund a greater number of doctoral candidates (e.g., in the Brussels-Capital region, the « Applied PhD » program funds an average of 7 doctorates per year, divided between Flemish and French-speaking universities and higher education institutes other than universities).
- The PhD to SME programme¹¹⁰ is a joint effort of VOKA (Flanders' Chamber of Commerce and Industry) and UGent, the aim of which is to build bridges between the world of research and small and medium-sized enterprises. 16 (post)doctoral researchers are given the opportunity to learn more about how SMEs are run and to put this knowledge into practice. Participants are given a chance to gain first-hand (leadership) experience in a Flemish SME in order to increase their hiring potential and smoothen their transition into the non-academic labour market.

➤ Supporting knowledge transfer

- Created in 2003, the LiEU Network¹¹¹ gathers Universities' Knowledge Transfer Offices of the French Community in Belgium. It fosters innovation by facilitating access to research skills and equipment of more than 1,000 university research units in the French Community and assist knowledge transfer and collaborations between researchers and companies. The LiEU Network also organizes events to promote Business – Research collaborations, around targeted themes and in collaboration with its privileged partners (competitiveness clusters, clusters, professional federations, etc.).
- The Flemish universities work together with their Technology Transfer Offices to better support doctoral candidates who are interested in entrepreneurship. There are various training courses offered to make doctoral candidates aware of how they can valorise their research activities. UAntwerp offers the "Dive into Business"¹¹² series as part of their offer to give information about intellectual property, cooperation with external parties and founding a company.
- Industrial Research Fund (IOF)¹¹³ is a grant from the Flemish government to all universities with the aim of research valorisation. The grant supports projects that have

¹⁰⁷ <https://recherche.wallonie.be/win4doc>

¹⁰⁸ <https://innoviris.brussels/news/applied-phd>

¹⁰⁹ <https://www.vlaio.be/nl/subsidies-financiering/baekeland-mandaten/baekeland-mandates>

¹¹⁰ <https://www.ugent.be/doctoralschools/en/doctoraltraining/courses/transferableskills/all/fromphdtosme.htm>

¹¹¹ <https://reseaulieu.be/en/the-network/>

¹¹² <https://www.uantwerpen.be/en/research/management/infosessions/>

¹¹³ <https://www.ecoom.be/en/services/industrial-research-fund>



findings that may benefit industry and can be market-ready.



F. APPENDIX: Country note template

OECD GSF project on “Policies and initiatives to promote career options for doctoral and postdoctoral scientists”

Country note template

National context

- Brief description of the national context with a bearing on research careers
 - Budgetary pressures
 - Research funding models
 - Labour market for researchers
 - Relevant national and administrative or survey data on research careers (e.g. evolution of number of doctorates awarded annually, number of postdoctoral researchers and/or doctorate holders in research positions with fixed-term contracts outside tenure-track (or equivalent), those on tenure-track, those with tenure, or equivalent indefinite contracts)
 - Differences between the higher education, government, business enterprise and private non-profit sectors, where relevant (e.g. number of researchers employed in each sector, working conditions, attitudes to employing researchers)
- Synthesis of strategic reports or reviews of initiatives to promote diverse career options for doctoral and postdoctoral researchers in higher education, government, business enterprise, and private non-profit sectors.
- Doctoral education framework (e.g. national policies, formal requirements, doctoral schools, average time-to-degree, coursework, internships, funded and self-funded places, etc.)
- Brief description of any relevant policy initiatives to deal with the effects of the Covid-19 pandemic on research careers.

National policy concerns

- Brief description of main policy concerns regarding careers for doctoral and postdoctoral researchers. When relevant, distinguish between the higher education, business enterprise, government and private non-profit sectors.

Available national and international evidence

- Brief synthesis of any scholarly or policy analysis studies on the careers of doctoral and postdoctoral researchers in your country or transnational in nature [Please provide references, if available.]
- Evidence of differences in career paths between population groups (e.g. socio-economic status, gender, ethnicity, indigeneity, citizenship), type of research (i.e. basic vs. applied research), or discipline.
- Evidence of the views of the employers of doctorate holders (e.g. perception of employability, perception of value added of doctoral education and postdoctoral training, recognition of doctoral and postdoctoral experience, etc.)

Information on policy initiatives

Provide information on policies that are being implemented to diversify the careers of doctoral and postdoctoral researchers (working within and beyond academia), and promote workforce diversity and inclusion:

- Purpose of the policies
- Content of the policies
- Policy levers used (e.g. regulatory, funding, informational, and organisational policy levers to involve relevant stakeholders)
- Inclusion of measurable targets
- Observed effects of the policy
 - Describe observed, and if available, measured impact of the policies on the diversification of career options for doctoral and postdoctoral researchers and workforce diversity and inclusion.
 - Describe factors that have enabled (incentives) or hindered (barriers) the effectiveness of the



policies (e.g. funding mechanisms, research assessment criteria, recognition and reward systems, incentives of supervisors, timing, academic and research culture, etc.)

Information on existing practices, programmes and initiatives

Provide information on good practices, programmes, and initiatives to diversify the career options of doctoral and postdoctoral researchers (e.g. career orientation and diversification of career paths, involvement and partnerships with diverse employers, training in transferable skills, exchange of researchers between academia and other sectors, intra- and inter-sectoral mobility, international mobility):

- By funders, universities, public research organisations, other employers of researchers, representative associations of researchers.
- Indicate any barriers or enablers to participate in any of these practices, programmes, and initiatives by different population groups (e.g. socio-economic status, gender, ethnicity, indigeneity, citizenship), type of research (i.e. basic vs. applied research), or discipline.
- Evaluation processes and criteria used in the recruitment and progression of doctoral and postdoctoral researchers with a bearing on their career options.

Note: Please re-use the information provided for the previous project on the precarity of academic research careers and for the [STIP Compass](#), where relevant.