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WORKING DOCUMENT

From:	General Secretariat of the Council
To:	ERAC (European Research Area and Innovation Committee)
Subject:	Promoting diverse and attractive research careers: towards a European Framework for Research Careers

ERAC delegations will find in the Annex "Technical document on a European framework for research careers", with a view to the ERAC meeting on 14 February 2023.

Section 1

Background

The development of a Commission proposal for a European framework for research careers constitutes the first of the three activities identified by the Commission in action 4 of the ERA Policy Agenda. It will aim at addressing all existing challenges in a comprehensive document, building on the political guidance received, notably through the Council Conclusions on research careers, the Pact for R&I, the ERAC SWG HRM and the Task Force on the revision of the Charter and Code, and the COMPET debate on young researchers at times of crises.

In the Council Conclusions on "Deepening the European Research Area: Providing researchers with attractive and sustainable careers and working conditions and making brain circulation a reality" of May 2021, the Commission was requested to make a proposal that would include aspects such as recruitment, incentives for early-career researchers, career diversification and progression, interoperability with all sectors of the society including industry, balanced talents circulation, researchers' assessment, gender equality, work-life balance, and an improved governance and services for Euraxess.

In addition to the political guidance received and the current exchanges with Member States and stakeholders in the ERA Forum, the proposal will build on the evidence gathered and input received in the last two years in the context of studies contracted by the Commission (assessment of the previous ERA actions, dedicated analysis on new features such as skills, mobility, monitoring) and extensive interactions with stakeholders in the last three years. It takes into consideration also input received in the context of stakeholders consultations for the European Strategy for Universities, and information or studies from third parties, including the OECD.

This technical document aims at sharing with ERAC delegates information on the main elements that the Commission believes should be addressed in its proposal, and some proposed solutions. In the context of the framework for research careers, the Commission is working on a revised version of the Charter and Code for researchers (see section 3 for an initial draft), in line with the May 2021 Council Conclusions on research careers and expected outcomes of action 4 of the ERA Policy Agenda. The new Charter and Code will be adapted to the current state of play with regard to elements such as Open Science or gender equality, and while using as bases the current C&C and the dedicated work of the ERAC Triangle Task Force, it will also include values and principles of the Pact for R&I and relevant elements of the new framework for research careers. Its focus on all sectors is proposed to be clarified and strengthened, to pursue uptake also beyond academia. Continuity will be ensured in respect to the institutions that have endorsed the principles of the current version of the Charter and Code and adhered (or are in the process of adhering) to the Human Resources Strategy for Researchers.

The Commission believes that the proposal for a European framework for research careers should also highlight and strengthen the link between research careers, entrepreneurship and innovation.

The European framework for research careers to support young researchers

The European framework for research careers intends to put special attention on young researchers, who have been severely hit by the recent consecutive crises and are often confronted with difficult and precarious careers, especially at the initial stage. Therefore, the measures proposed in the framework (see section 2) have also been aligned with the outcome of the debate of the June COMPET Council on young researchers in times of crisis. Overall, the framework for research careers will support young researchers as follows:

- Research careers will be supported to ensure proper attractiveness, first and foremost by way of a dedicated and comprehensive framework for research careers that offers a proper recognition to the research professions and addresses all existing challenges. This will result in better recognized, more diversified, and adequately rewarded careers. By making research careers more attractive, more young people will be attracted to this kind of path, less young talents will leave Europe for the benefit of other R&I competitors, and on the contrary Europe will be able to attract young international talents, including researchers at risk or vulnerable ones due to specific situations.
- The selection and recruitment of candidates will be open, transparent and merit-based (OTM-R), without any penalisation for career breaks or inter-sectoral mobility.
- Dedicated incentives for early-career researchers will be promoted, including financial and social protection ones. In addition, doctoral candidates will be able to enjoy all safeguards applicable to researchers at higher career stages. This will have a highly beneficial impact in those situations where doctoral candidates are considered as students and do not enjoy the conditions applicable to employees.
- Working conditions will have a very important role, including by promoting more stability through a more frequent use of permanent contracts, guaranteeing decent levels of social protection measures, and recognising the need for a proper work-life balance and to ensure mental health.
- The aspect of skills will be paramount, with the objective of having young researchers equipped, already at the beginning of their career, with the transversal skills that are needed for diversified and inter-sectoral careers, as well as for own entrepreneurial activities. In particular, the European Competence Framework for Researchers (ResearchComp) will be promoted so that doctoral training is adapted accordingly, and to allow for the development of targeted training opportunities that young researchers can use to further up-skill. Moreover, cooperation between HEIs and all relevant public and private actors will be fostered, so that young talents can be co-developed in line with the labour market needs.
- EURAXESS and the upcoming ERA Talent Platform will offer more personalized career development support, will make sure that young talents are adequately informed about existing opportunities in the wider labour market, and will support the match-making between young researchers and labour market opportunities in all sectors.
- Career advisory and support services will generally be supported, to stimulate inter-sectoral, inter-disciplinary and geographical mobility, as well as the creation and development of entrepreneurial activities.
- A culture evolution will be supported, where all types of mobility (inter-sectoral, inter-disciplinary, geographical, virtual) are considered as an asset and are supported and adequately rewarded. In this context, the R1-R4 profiles will be complemented with examples of occupations for all levels, in order to ensure comparability and inter-operability of research careers across institutions, sectors and Member States. The ERA4You initiative will support inter-sectoral mobility through synergic action at different levels.

- A revised Charter and Code for Researchers will be further promoted, in academia and beyond, to adequately improve human resources strategies and ensure a full uptake of the overall principles of the framework for research careers, with all the benefits for young researchers that this entails.

- Reformed systems for the assessment of researchers will be supported, to attribute the right value to all outputs, activities and practices. This will translate into less pressure to publish into high-impact journals on the one hand, and into a proper assessment and promotion of important activities for young researchers, such as mentoring and collaboration.

- All measures of the framework, by fostering more attractive research careers throughout Europe, will also have a positive impact towards a more balanced circulation of talents, avoiding the loss by some countries of the best of their R&I young talents. Support will be foreseen for specific instruments that can promote a balanced circulation of early-career researchers, strengthening the human capital base in widening countries.

- The development of a R&I careers observatory will play an important role in monitoring all relevant aspects related to skills, jobs and mobility. This will allow for a better understanding of existing opportunities, and for proper policy measures in support of young researchers to be promptly adopted at European, national, regional or local level if necessary.

- The exchange of best practices on various aspects, including inter-sectoral mobility and the overall implementation of the framework for research careers will be supported, allowing for the sharing of successful initiatives in support of young researchers.

The above mentioned measures will require coordinated efforts at European, national, regional and local level, and commitment by all relevant actors.

Section 2

Key elements of the European Framework for Research Careers

Definition of researchers in the European Research Area, and of the research professions

- Use of the Frascati definition: Researchers are professionals engaged in the conception or creation of new knowledge. They conduct research and improve or develop concepts, theories, models, techniques instrumentation, software or operational methods.

  Researchers may be involved fully or partially in different types of activities (e.g. basic or applied research, experimental development, operating research equipment, project management, etc.) in any sector of the economy or society. Researchers identify options for new R&D activities, and plan for and manage them by using high-level skills and knowledge developed through formal education and training or from practical experience in performing research.

- The research professions can take place with an equal value in all sectors performing research and innovation, including academia, business, governmental laboratories and the public administration, and the non-profit sector.
- All researchers, regardless of their actual status and sector of employment, who perform research activity, should be framed in R1-R4 profiles to ensure comparability and inter-operability of research careers across institutions, sectors and Member States (see section 4 for information on the profiles, and for examples of job titles for each stage).

The recognition of the research profession, and interoperability and comparability of research careers

- Full recognition of the research profession, equal esteem and reward of the different paths of careers of researchers regardless the sector of employment or activity, and measures to allow for a full interoperability and comparability of research careers across Member States, institutions and sectors.
- Non-linear and multi-career paths, to be intended as paths characterised by geographical, disciplinary, sectoral, and inter-organisational mobility, and hybrid paths combining simultaneously different sectors to be encouraged and supported by Member States, and to be considered as a single career path. The reward system to be adapted accordingly.
- Transposition at national level of all new versions and updates of the European Skills, Competences, Qualifications and Occupations classification, with specific regard to researchers' occupations and skills.
- Human resources offices in all sectors to map career structures for researchers against the R1-R4 profiles to facilitate interoperability and comparability of careers.

Recruitment and working conditions

- Open, transparent and merit-based selection and recruitment of candidates, without any penalisation for career breaks or inter-sectoral mobility.
- Employers and/or funders of researchers to ensure attractive and competitive research and working conditions, where researchers at all career stages and irrespective of permanent or fixed-term nature of their contract are valued, encouraged and supported. This should include (but not be limited to):
  - Ensuring equal opportunities and inclusiveness for researchers from all backgrounds including under-represented and marginalised groups, gender equality, as well as

commensurate remuneration, work-life balance and work flexibility conditions for combining personal life, family, children and careers, and overall wellbeing, without prejudice to careers.
- o Promoting, among research performing and funding organisations, the use of institutional change instruments, including gender equality plans open to intersections between gender and other social categories, in line with the new European Research Area framework and the European Strategy for Universities.
- o Safeguarding the freedom of scientific research from any possible limitation or interference, including from foreign actors;
- o Countering the phenomenon of precarity and supporting job security and stability, including by way of a limited maximum total duration of fixed-term appointments, and a maximum threshold of one third of fixed-term contracts in the overall researchers' human resources of a given employer. (This ratio should be maintained, and a lower threshold should be targeted, by employers who stand already below the one third threshold).
- o Guaranteeing decent levels of social protection irrespective of the permanent, fixed-term or grant-based nature of the contract, without prejudice to the competence of Member States to organise their social protection systems. Such measures should pertain to the following branches (based on Council Recommendation of 8 November 2019 on access to social protection for workers and the self-employed):
  - ▪ unemployment benefits;
  - ▪ sickness and healthcare benefits;
  - ▪ maternity leave, paternity leave and parental leaves and related benefits;
  - ▪ invalidity benefits;
  - ▪ old-age benefits and survivors' benefits;
  - ▪ benefits in respect of accidents at work and occupational diseases.
- Entitlements – no matter whether they are acquired through mandatory or voluntary schemes – should be preserved, accumulated and transferable across all types of employment and self-employment statuses and across geographical borders, economic sectors, throughout the person's working life and between different schemes within a given social protection branch.
- Promotion of the use of the solutions provided by RESAVER pan-European pension fund
- Specific measures in support of early-career researchers (R1 and R2) including (but not be limited to):
  - o Entitling doctoral candidates to enjoy all the safeguards applicable to researchers in other career stages;
  - o Promoting the use of incentives for early-career researchers, including financial and social protection incentives;
  - o Promoting the use of, and supporting, incentives for the recruitment of early-career researchers by employers in all sectors, in particular with permanent contracts;
  - o Promoting and valuing inter-sectoral, interdisciplinary and geographical mobility;
  - o Promoting cooperation between higher education institutions, research funders and other relevant ecosystem actors, notably industry and other businesses, with regard to skills needs and skills provision, so as to foster recruitment of highly- and tailor-skilled researchers in the sectors concerned.

Researchers skilled for inter-sectoral and inter-disciplinary careers and for entrepreneurship and innovation

- Doctoral training to be adapted for interoperable careers in all relevant sectors and for the practice of Open Science, including by making use of the European Competence Framework for Researchers and of any other future initiatives taken by the Commission for the purpose of

strengthening transversal skills of researchers. Support higher education institutions in the use of the European Competence Framework for Researchers, promote the exchange of good practices, and consider future revisions of the Competence Framework where needed on the basis of the evolution of the research and innovation system and of the labour market.

- Strengthening researchers' skills needed to improve the valorisation of their knowledge and to foster market uptake of their results, especially in the fields of green and digital technologies.
- Encourage interaction and cooperation, including partnerships, between academia, industry, other businesses, public administration, the non-profit sector, and all other relevant ecosystem actors, in order to ensure that doctoral training and targeted training are developed or co-developed on the basis of the actual skills needs of the parties concerned.
  Interaction and cooperation particularly important in areas where specific skills are necessary for operating with state-of-the-art research and technology infrastructures.
- Foster entrepreneurial and investment-seeking competences in researchers, with the objective of allowing those who undertake an entrepreneurial career path to couple their knowledge production capabilities with knowledge valorisation proficiency, turning innovative ideas into business and fostering innovation and progress.
- Promotion of women entrepreneurship and innovation, and the creation of women-led university spin-offs.
- Measures to mitigate the risks assumed by researchers undertaking an entrepreneurial career, including through the possibility to return to their previous career path.
- Development and provision of targeted training, including in the form of micro-credentials, to ensure up-skilling and re-skilling opportunities for researchers with a lifelong perspective and to foster inter-sectoral and inter-disciplinary mobility. Proper recognition and validation of formal and informal training opportunities, including on-the-job training.
- Development of the ERA4You policy initiative to foster cross-sectoral circulation of talents, notably by:
  - Supporting mutual learning for Member States on the basis of models of inter-sectoral mobility schemes, in three priority areas: (i) strengthening academia/non-academia cooperation, (ii) improving training and lifelong learning for researchers, innovators, and other research and innovation talents, (iii) boosting researcher entrepreneurship;
  - Reinforcing inter-sectoral mobility components in existing instruments for researchers' mobility, and complementing them with new instruments;
  - Creating awareness on inter-sectoral mobility schemes, via a branch of the ERA Talent Platform.
  National schemes promoting inter-sectoral mobility in one or more of the three priority areas mentioned above to be considered.
- Remove the existing structural and administrative barriers which can hamper or make difficult mobility between sectors, including by supporting the interoperability of careers between sectors, and facilitating temporary or permanent mobility.

Career development and progression

- Recognition of the value of geographical, inter-sectoral, inter-institutional, inter- and trans-disciplinary and virtual mobility as important means to enhance scientific knowledge and professional development at any stage of a researcher's career.
- Measures to make researchers, in particular early-career ones, aware of opportunities available in all relevant sectors and to promote a culture of diversification of careers for better personal and professional development.
- Support for the provision of career advisory and support services to stimulate inter-sectoral, inter-disciplinary and geographical mobility, as well as the creation and development of entrepreneurial activities.

- System for the assessment and reward of researchers that:
  - Is based on qualitative judgement provided by peers, supported by responsible use of quantitative indicators;
  - Rewards quality and the various potential impacts of their research on society, science and innovation;
  - Value a diversity of outputs (*inter alia* publications, datasets, software, methodologies, protocols, patents), activities (*inter alia* mentoring, leadership roles, entrepreneurship, data management, peer review, teaching, knowledge valorisation, industry-academia cooperation, support for evidence-informed policy-making, interaction with society) and practices (*inter alia* early knowledge and data sharing, open collaboration), as well as all mobility experiences;
  - Ensures that researchers' professional activity meets high standards of ethics and integrity, rewards appropriate conduct of research, and values good practices, in particular open practices for sharing research results and methodologies, whenever possible;
  - Uses assessment criteria and processes that respect the variety of research disciplines and national contexts;
  - Supports a diversity of researcher profiles and career paths, and values individual contributions, but also the role of teams, collaborative work, and cross-disciplinarity;
  - Ensure gender equality, equal opportunities and inclusiveness.
- Ensure a fair, equal, inclusive, transparent, structured and gender-equal career accession and progression system in academia, up to the top positions, including by considering a tenure-track system, to be intended as a fixed-term contract with the perspective of a progression to a permanent position, subject to positive evaluation.

Balanced circulation of talents and making Europe an attractive destination

- Measures by Member States to foster favourable, attractive and competitive conditions for conducting research and innovation activities, and for the return of researchers engaged in experiences abroad to their home country, including:
  - Incentives to make research activities more attractive, taking into consideration the need for a fair competition for talents;
  - Measures promoting diversity, gender equality and inclusiveness, including the adoption of inclusive gender equality plans;
  - Investments in the research and innovation system, including the support to networking within and beyond EU, to connect and integrate the national research and innovation systems to European research networks and provide higher visibility of national capabilities and high-level infrastructures;
  - The exchange of best practices with regard to creating an attractive and competitive research and innovation environment, including as regards the improvement of remuneration and working conditions and the reduction of administrative and language barriers for foreign and international researchers;
  - Return grants and permanent positions for returning researchers;
  - The possibility of having dual positions in institutions established in different Member States, thereby fostering knowledge transfer, collaboration, and preventing talent drain.
- Measures to be taken by the Commission to foster a more balanced circulation of talents, including:
  - Supporting mutual learning for Member States in view of the reform of their research and innovation systems, including through calls for expression of interest to create a community of practice with training and guidance for Member States on the basis of successful pathways and solutions enabling more balanced talent circulation;
  - Monitoring mobility flows, through an interactive talent circulation map in the observatory on research careers;

- Facilitating transnational ties with scientific diaspora communities and facilitating attracting or returning talents, via a branch of the ERA Talent Platform;
- Promoting a balanced talent circulation for early-career researchers through new instruments at Union level that strengthen the human capital base in widening countries, with more entrepreneurial, managerial and better-trained researchers and innovators.

Support actions for research careers

- Strengthen the EURAXESS portals, services, and the international dimension, and develop the ERA Talent Platform as an online one-stop-shop for researchers and institutions in all sectors, with a new governance framework featuring binding commitments and a coordination role of relevant national bodies and institutions involved in service delivery.
- ERA Talent Platform to allow researchers to manage their learning and training opportunities and their careers; research and innovation institutions, employers and funders to be able to conduct networking activities, better manage their pools of talents, collaborate and exchange best practices. Services to be broadened to include talent development and career management services, with a focus on researchers in all relevant sectors of the society, including academia.
- Ensure links and interoperability between the ERA Talent Platform and other relevant EU and national initiatives, including Europass, EURES and the EU login.
- Update the Charter and Code and encourage its endorsement and implementation by research employers and funders from all sectors, including through dedicated incentives, in view of making it become a structural tool in support of researchers and research careers.
- Ensure alignment of the Human Resources Strategy for Researchers with the revised Charter and Code, and ensure continuity in respect to the institutions that have endorsed the principles of the previous version of the Charter and Code and adhered (or are in the process of adhering) to the Human Resources Strategy for Researchers.
- Regularly review and adapt all tools in support of research careers, based on the actual needs of researchers.
- Alliances of higher education institutions, such as the European Universities alliances, the whole European higher education sector and all relevant stakeholders to pilot elements of the framework on the basis of a voluntary and bottom-up approach.

Monitoring of research careers

- In addition to the overarching European Research Area monitoring systems, the Commission and Member States to monitor research careers in the Union through a dedicated observatory on research careers, to the benefit of policy makers, organisations, public administrations and researchers at European and national level. The observatory should support data needs of Member States and research performing organisations relevant for the adaptation and development of policies for research careers. It should also support researchers to have a better understanding of challenges and opportunities, and promote the attractiveness of Europe's research performing organisations for the best talents. Member States to cooperate for the purpose of collecting data relevant for the implementation of the observatory in an efficient and sustainable way.
- The Commission to consider relevant links with the European Higher Education Sector Observatory proposed in the European Strategy for Universities and thereby enhance synergies between the European Research Area and the European Education Area.

Section 3

Draft new European Charter for Researchers and the Code of Conduct for the Recruitment of Researchers

PILLAR 1 – ETHICS AND INTEGRITY

The actions within this area are expected to contribute to the foundations of the vision of the new European Research Area, and to inspire European researchers, research employers, and funders.

Ethics and Research Integrity[1]

Researchers should comply with strict ethics rules and approach their work with honesty; reliability; objectivity; impartiality and independence; open communication; duty of care; fairness and responsibility for future science generations. These are the foundations of responsible and trustworthy research free from undue influence (including foreign interference[2] and conflict of interest), a prerequisite for achieving excellence, and underpin the responsibility of researchers to guard against biases and methodological shortcuts.

Researchers should adhere to the recognised ethical practices and fundamental ethical principles appropriate to their discipline(s) as well as to ethical standards as documented in the different national, sectoral or institutional Codes of Ethics.

The primary responsibility for research integrity is with researchers themselves. Researchers should be supported by an institutional culture of research integrity to create rules, procedures and guidelines as well as training and mentoring based on the exchange of best practices.

Researchers must avoid plagiarism of any kind and abide by the principles of intellectual property and joint ownership in the case of research carried out in collaboration with a supervisor(s) and/or other researchers. The need to validate new observations by showing that findings are reproducible should not be interpreted as plagiarism, provided that the data to be confirmed are explicitly quoted.

Freedom of Scientific Research

The freedom of scientific research is a common core value and principle for research cooperation within the European Research Area and with international partners[3]. Researchers should focus their research for the good of mankind and for expanding the frontiers of human knowledge, while enjoying the freedom of thought and expression, and the freedom to identify methods by which problems are solved. Researchers should, however, recognise the limitations to this freedom that could arise because of particular research circumstances (including supervision/guidance/management) or operational constraints, e.g., for intellectual property rights, budgetary or infrastructural reasons.

The Research Profession

All researchers engaged in the conception or creation of new knowledge should be recognised as professionals and be treated accordingly. This should commence at the beginning of their careers, independently of the sector in which they operate, namely at postgraduate level, and should include all

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[1]Council Conclusions Research Integrity 14853/15 (2015)

[2] Tackling R&I Foreign Interference, European Commission (SWD), 2022, doi:10.2777/513746

[3] Bonn Declaration on Freedom of Scientific Research, Adopted at the Ministerial Conference on the European Research Area on 20 October 2020 in Bonn, https://www.bmbf.de/bmbf/shareddocs/downloads/files/_drp-efr-bonner_erklaerung_en_with-signatures_maerz_2021.pdf?__blob=publicationFile&v=1

levels, regardless of their classification at national level (e.g., employee, postgraduate student, doctoral candidate, postdoctoral fellow, civil servants).

Employers and funders should encourage and support non-linear and multi-career paths, to be intended as paths characterised by geographical, disciplinary, sectoral, and inter-organisational mobility, or hybrid paths combining simultaneously different sectors, and to be considered as a linear career path.

Professional Attitude

Researchers should be familiar with the strategic goals governing their research environment and funding mechanisms and should seek all necessary approvals before starting their research or accessing the resources provided. Researchers should make every effort to ensure that their research is relevant to society and does not needlessly duplicate research previously carried out elsewhere.

There should be clear communication between researchers and employers, funders, or supervisors when a research project is delayed, redefined or completed, or give notice if it is to be terminated earlier or suspended for whatever reason.

Accountability

Researchers need to be aware that they are accountable towards their employers, funders or other related public or private bodies as well as, on more ethical grounds, towards society. Researchers funded by public funds are also accountable for the efficient use of taxpayers' money. Consequently, they should adhere to the principles of sound, transparent and efficient financial management and cooperate with any authorised audits of their research, whether undertaken by their employers/funders or by ethics committees.

Methods of collection and analysis, the outputs and, where applicable, details of the data should be open to internal and external scrutiny, whenever necessary and as requested by the appropriate authorities. This is also important to make the data open and help ensure the reproducibility of their results.

Embracing Diversity, Equality and Inclusivity

A core principle of ERA is to take account of diversity in the broad sense, including, inter alia, gender, racial or ethnic origin, religion or belief, social diversity, disability, age, sexual orientation and combating discrimination on all grounds. Employers and/or funders should embrace diversity in their researchers as different life experiences add valuable perspectives to research projects. Also, diversity in participants can inform research results applying to and enriching the diverse societies we live in.

Employers, funders, and policy makers should ensure fair, open, inclusive and gender-equal career paths in research to facilitate systemic institutional and structural change; counteract gender-based violence and sexual harassment; remove inequities regardless of gender, racial or ethnic origin, religion or belief, disability, age or sexual orientation; monitor and evaluate national gender equality policies and plans in research and innovation.

Employers and/or funders should aim for a representative gender balance at all levels of staff, including at supervisory and managerial level. This should be achieved on the basis of an equal opportunity policy at recruitment and at the subsequent career stages without, however, taking precedence over quality and competence criteria. To ensure equal treatment, selection and evaluation committees should have a representative gender balance.

Free circulation of researchers

Funders and employers should promote free circulation of researchers and support staff, scientific knowledge and technology, while attracting talent and avoiding potential talent drain. They should recognise the value of geographical, inter-institutional, intersectoral, inter- and trans-disciplinary, and

virtual mobility[4] as important means of enhancing knowledge and professional development at any stage of a researcher's career and fully value and acknowledge any mobility experience within their career progression/appraisal system. This also requires that the necessary administrative instruments be put in place to allow the portability of both grants and social security provisions, in accordance with national legislation.

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[4] i.e., remote collaboration over electronic networks.

PILLAR 2 – RESEARCHERS ASSESSMENT, RECRUITMENT AND PROGRESSION

Research assessment should ensure an equal recognition and reward of careers of researchers regardless the sector of employment or activity and be based on an unbiased talent-based approach. Fair recruitment and selection of researchers´ policies are fundamental for achieving an open labour market for researchers, contributing to the advancement of the European Research Area.

Researchers Assessment

Research assessment should enable evaluating the performance of researchers and research to achieve the highest quality and impact. This requires recognition of increasingly diverse research activities and outputs, and rewarding collaboration, open sharing of outputs, and research integrity. Consequently, the importance of bibliometric indicators should be properly balanced within a wider range of evaluation criteria, such as teaching, peer review, management and leadership, supervision, mentoring, knowledge valorisation, entrepreneurship and collaboration with industry, teamwork, services to society, science communication and interaction with society, and methodological rigour and open science practices. For candidates from an industrial background, particular attention should be paid to any contributions to innovation through patents, development or inventions.

Employers and funders should support a system for the assessment and reward of researchers that considers the overall quality of impact of researchers on society, science and innovation, the diversity of activities performed, Open Science practices, and the value of geographical and inter-sectoral mobility. Such a system should be;

- be based on qualitative judgement provided by peers, supported by responsible use of quantitative indicators
- reward quality and the various potential impacts of research on society, science and innovation;
- value a diversity of outputs (*inter alia* publications, datasets, software, methodologies, protocols, patents), activities (*inter alia* mentoring, leadership roles, entrepreneurship, data management, peer review, teaching, knowledge valorisation, industry-academia cooperation, support for evidence-informed policy-making, interaction with society) and practices (*inter alia* early knowledge and data sharing, open collaboration), as well as all mobility experiences;
- ensure that the researcher's professional activity meets high standards of ethics and integrity, rewards appropriate conduct of research, and values good practices, in particular open practices for sharing research results and methodologies, whenever possible;
- use assessment criteria and processes that respect the variety of research disciplines and national contexts;
- support a diversity of researcher profiles and career paths, and value individual contributions, but also the role of teams, collaborative work, and cross-disciplinarity;
- ensure gender equality, equal opportunities and inclusiveness.

Recruitment

Employers and/or funders should establish recruitment and selection procedures which are open[5], transparent and merit-based, without any penalisation for career breaks or inter-sectoral mobility. Advertisements should include a comprehensive description of knowledge and competencies required, including description of the working conditions and entitlements, career development prospects and an overview of the timeline. Candidates should be informed, prior to the selection, about the recruitment process and the selection criteria, the number of available positions and the career development prospects.

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[5] All available instruments should be used, international or globally accessible web-based resources such as the EURAXESS Portal: https://euraxess.ec.europa.eu.

<u>Variations in the chronological order of CVs</u>
Career breaks or variations in the chronological order of CVs should not be penalised, but regarded as an evolution of a career, and consequently, as a potentially valuable contribution to the professional development of researchers towards a multidimensional career track. Candidates should therefore be allowed to submit evidence-based CVs, reflecting a representative array of achievements and qualifications appropriate to the post for which application is being made.

<u>Seniority</u>
The levels of qualifications required should be in line with the needs of the position and not be set as a barrier to entry. Recognition and evaluation of qualifications should focus on judging the achievements of the person rather than his/her circumstances or the reputation of the institution where the qualifications were gained. As professional qualifications may be gained at an early stage of a long career, the pattern of lifelong professional development should also be encouraged and recognised.

Selection
The selection process should take into consideration the whole range of experience of the candidates. While focusing on their overall potential as researchers, their creativity and level of independence should also be considered. Selection committees should bring together diverse expertise, competences and experience relevant to assess the candidate. There should be adequate gender balance and, where appropriate and feasible, include members from different sectors (public and private) and disciplines, and other countries. Whenever possible, a wide range of selection practices should be used, such as external expert assessment and face-to-face interviews. Members of selection panels should be adequately trained. Candidates should be informed after the selection process about the strengths and weaknesses of their applications.

<u>Non-discrimination</u>
Employers and/or funders of researchers will not discriminate against researchers in any way based on gender, age, ethnic, national or social origin, religion or belief, sexual orientation, language, disability, political opinion, social or economic condition.

Career progression
Employers and/or funders should introduce for all researchers, including senior researchers, evaluation/appraisal systems for assessing their professional performance on a regular basis and in a transparent manner by an independent (and, in the case of senior researchers, preferably international) committee. A multiple career path, characterised by geographical, sectoral, and inter-organisational mobility, or hybrid paths characterised by the simultaneous combination of sectors, deserves full recognition and consideration on a par with a linear career path.

Such evaluation and appraisal procedures should take due account of researchers' overall potential, their research creativity, their research results (e.g. publications, data, software, models, algorithms, methods, protocols, patents, policy contributions), their activities (e.g. management and leadership, teaching/lecturing, peer review, supervision, mentoring, entrepreneurship, knowledge valorisation, national or international collaboration, administrative duties, service to society, science communication and interaction with society), their research behaviour (e.g. ethics and integrity practice, methodological rigour, early knowledge and data sharing, open collaboration) and their mobility, and should be taken into consideration in the context of career progression.

A transparent, structured, inclusive and gender-equal career accession and progression system is needed to reinforce careers in academia, up to the top positions[6]. The adoption of tenure-track-like

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[6] See MORE 4 study - https://cdn5.euraxess.org/sites/default/files/policy_library/more4_final_report.pdf

systems, to be intended as a fixed-term contract with the perspective of a progression to a permanent position subject to positive evaluation, could be considered for this purpose at the level of Member States and research performing organisations.

Co-authorship

Co-authorship should be viewed positively by institutions when evaluating staff, as evidence of a constructive approach to the conduct of research. Employers and/or funders should therefore develop strategies, practices and procedures to provide researchers, including those at the beginning of their research careers, with the necessary framework conditions so that they can enjoy the right to be recognised and listed and/or quoted, in the context of their actual contributions, as co-authors of papers, patents, etc, or to publish their own research results independently from their supervisor(s).

Recognition of mobility experience

Any mobility experience, e.g., a stay in another country/region or in another research setting (public or private) or a change from one discipline or sector to another, whether as part of the initial research training or at a later stage of the research career, or virtual mobility experience, should be considered as a valuable contribution to the professional development of a researcher.

PILLAR 3 - WORKING CONDITIONS AND OPEN SCIENCE

Improving researchers working conditions should be at the core of the EU policy framework for research careers. Within this area several actions are proposed to contribute to the stability of employment, to the definition of researchers´ labour rights and obligations and the need for employers and funders to develop a research culture for research excellence and facilitate a thriving researcher community.

Working conditions, funding and salaries

Employers and/or funders should ensure that the working conditions for researchers, including for disabled researchers, provide where appropriate the flexibility deemed essential for successful research performance in accordance with existing national legislation and with national or sectoral collective-bargaining agreements. They should aim to provide working conditions which allow both women and men researchers to combine family and work, children, and career[7]. Particular attention should be paid, inter alia, to flexible working hours, part-time working, tele-working and sabbatical leave, as well as to the necessary financial and administrative provisions governing such arrangements. Employers should provide a working environment that promotes the mental health and wellbeing of researchers.

Research environment

Employers and/or funders of researchers should ensure that the most stimulating research or research training environment is created which offers appropriate equipment, facilities and opportunities, including for remote collaboration over research networks, and that the national or sectoral regulations concerning health and safety in research are observed. Funders should ensure that adequate resources are provided in support of the agreed work programme.

Complaints/appeals

Employers and/or funders of researchers should establish, in compliance with national rules and regulations, appropriate procedures, possibly in the form of an impartial (ombudsman- type) person to deal with complaints/appeals of researchers, including those concerning conflicts between supervisor(s) and First Stage (R1) / Recognised (R2) researchers. Such procedures should provide all research staff with confidential and informal assistance in resolving work-related conflicts, disputes, and grievances, with the aim of promoting fair and equitable treatment within the institution and improving the overall quality of the working environment.

Participation in organisation governance

Employers and/or funders of researchers should recognise it as wholly legitimate, and indeed desirable, that researchers be represented in the relevant information, consultation and decision-making bodies of the institutions for which they work, to protect and promote their individual and collective interests as professionals and to actively contribute to the workings of the institution[8].

Funding and salaries

Employers and/or funders of researchers should ensure that researchers, irrespective of their status, enjoy fair and attractive conditions of funding and/or salaries with adequate and equitable social security provisions (including sickness and parental benefits, pension rights and unemployment benefits) in accordance with existing national legislation and with national or sectoral collective bargaining agreements. This must include researchers at all career stages including First Stage Researchers (R1), commensurate with their legal status, performance and level of qualifications and/or responsibilities.

Stability of employment

Employers and/or funders should take resolute actions to counter the phenomenon of precarity and to support job security and stability, including by way of a limited maximum total duration of fixed-term

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[7] See SEC (2005) 260, Women and Science: Excellence and Innovation – Gender Equality in Science.
[8] In this context see also EU Directive 2002/14/EC.

appointments, and a maximum threshold of one third of fixed-term contracts in the overall researchers' human resources of a given employer.

Post-doctoral positions (R2)
This is a particular issue in academia and to counter this situation and to support job security and stability, clear rules and explicit guidelines for the recruitment and appointment of postdoctoral researchers (R2), including the maximum duration and the objectives of such appointments, should be established by the institutions appointing postdoctoral researchers. Such guidelines should consider time spent in prior postdoctoral appointments at other institutions and take into consideration that the postdoctoral status should be transitional, with the primary purpose of providing additional professional development opportunities for a research career in the context of long-term career prospects with fixed contract or tenure.

Contractual and legal obligations
Researchers at all levels must be familiar with the national, sectoral or institutional regulations governing training and/or working conditions. This includes Intellectual Property Rights regulations, and the requirements and conditions of any sponsor or funders, independently of the nature of their contract. Researchers should adhere to such regulations by delivering the required results (e.g., thesis, publications, patents, reports, new products development, etc) as set out in the terms and conditions of the contract or equivalent document.
Researchers should at all times adopt safe working practices, in line with national legislation, including taking the necessary precautions for health and safety and for recovery from cybersecurity attacks, information technology disasters, e.g., by preparing proper back-up strategies. They should also be familiar with the current national legal requirements regarding data protection and confidentiality protection requirements and undertake the necessary steps to always fulfil them.

Open Science and Innovation
Researchers should target engagement in all aspects of Open Science[9] and Innovation and be facilitated by their employers and funders in this regard. They should share their results openly, e.g., through open and FAIR data, open access publications, open software, models and algorithms. They should take measures to ensure reproducibility of research results. They should aim to practice open science methodologies and engage in open peer review. Employers and/or funders should support and reward a true open science culture across the Union, including mainstreaming open access to scholarly publications, research data and other research outputs (i.e. following the "as open as possible, as closed as necessary" principle) and the diffusion and uptake of open science principles and practices, whilst considering differences between disciplines and cultural differences, including multilingualism, supporting the development of open science skills, and further developing and integrating the underpinning digital infrastructure and service

Dissemination, exploitation of results
Open Science should be used by all researchers to ensure, in compliance with their contractual arrangements, that the results of their research are disseminated and exploited, e.g., communicated, transferred into other research settings or, if appropriate, commercialised. Senior researchers are expected to take a lead in ensuring that research is fruitful and that results are either exploited commercially or made accessible to the public (or both) whenever the opportunity arises.

Researchers should be facilitated in this regard by their employers and funders through the relevant skills training and access to the appropriate funding, infrastructure and support. The engagement of researchers in Open Science should be recognised, incentivised and rewarded by employers and funders in recruitment, career progression and funding programme assessment.

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[9] Council Conclusions, The transition towards an Open Science system, 9526/16 27 May 2016

Intellectual Property Rights

Employers and/or funders should ensure that researchers at all career stages reap the benefits of the exploitation (if any) of their R&D results through legal protection and through appropriate protection of Intellectual Property Rights, including copyrights.

Policies and practices should specify what rights belong to researchers and/or, where applicable, to their employers or other parties, including external commercial or industrial organisations, as possibly provided for under specific collaboration agreements or other types of agreement.

Public Engagement and Citizen Science

Researchers should ensure that their research activities are made known to society at large in such a way that they can be understood by non-specialists, thereby improving the public's understanding of science. Direct engagement with the civil society and citizens will help researchers to better understand public interest in priorities for research and the public's concerns, and to harness the potential of co-design and co-creation with society where relevant.

Researchers should incorporate citizen science into their projects as much as possible and where relevant. This means involving citizens in the concept, design and implementation of research projects Science, Technology, Engineering, Mathematics (STEM), Social Sciences and Humanities (SSH), including the Arts. This is an ideal means to democratise science, build trust in science, and leverage the vast societal intelligence and capabilities to conduct excellent research and innovation.

The research community is diverse in talents, skills, competences and capacities. The more these talents are fostered and developed, the better research quality, and societal relevance of the produced knowledge. Encouraging continuous professional development along with skills training is needed to maintain competence and provide researchers with a broad range of career opportunities in the public and private sectors.

Valuing diverse research Careers

Employers and/or funders should recognise that researchers may have highly diverse careers both in research or in other functions. Diversification typically include mobility in all its forms; inter/intra-national, inter-sectoral, inter-institutional, inter- and trans-disciplinary and virtual mobility. This requires more talent-based and diversity-sensitive quality assessment, going beyond metrics, considering diverse contributions and their potential impacts, diverse activities and practices like teaching and skills, peer review, management and leadership, supervision, mentoring, knowledge valorisation, entrepreneurship and collaboration with industry, services to society, science communication and interaction with society, methodological rigour and open science practices, team science, among others as well as mobility.

Employers and/or funders should put measures in place to make researchers, in particular early-career ones, aware of opportunities available in all relevant sectors and to promote a culture of diversification of careers for better personal and professional development. This will require career advisory and support services to stimulate inter-sectoral, inter-disciplinary and geographical mobility, as well as the creation and development of entrepreneurial activities.

Career development and Advice

Employers and/or funders of researchers should draw up, preferably within the framework of their human resources management, a specific career development strategy for researchers at all stages of their career, regardless of their contractual situation, including for researchers on fixed-term contracts. It should include the availability of mentors involved in providing support and guidance for the personal and professional development of researchers, thus motivating them and contributing to reducing any insecurity in their professional future. All researchers should be made familiar with such provisions and arrangements.

Employers and/or funders should ensure either in the institutions concerned, or through collaboration with other structures, accessible and up-to-date career advice and job placement assistance, providing information, guidance and support for career development both within and beyond the institution concerned. This shall be offered to researchers at all stages of their careers, regardless of their contractual situation

Continuous Professional Development

Researchers at all career stages should seek to continually improve themselves by regularly updating and expanding their skills and competencies. This may be achieved by a variety of means including, but not restricted to, formal training, workshops, conferences and e-learning.

Access to research training and continuous development

Employers and/or funders should ensure that all researchers at any stage of their career, regardless of their contractual situation, are given the opportunity for professional development and for improving their employability through access to measures for the continuing development of skills and competencies. Employers and funders should take action to support the development and provision of targeted training, including in the form of micro-credentials, to ensure up-skilling and re-skilling opportunities for researchers with a lifelong perspective and to foster inter-sectoral and inter-disciplinary mobility. Such measures should be regularly assessed for their accessibility, take-up and effectiveness in improving competencies, skills and employability.

Employers and funders should attribute adequate relevance to the need to foster entrepreneurial competences in researchers, with the objective of allowing those who undertake an entrepreneurial career path to couple their knowledge production capabilities with knowledge valorisation proficiency, turning innovative ideas into business and fostering innovation and progress.

Employers and funders should take steps to ensure that doctoral training is adapted for interoperable careers in all relevant sectors and for the practice of Open Science, including by making use of the European Competence Framework for Researchers and of any other future initiatives taken by the Commission for the purpose of strengthening transversal skills of researchers.

Recognition of qualifications
As part of broadening researchers' skills sets, employers and/or funders should provide for the recognition, appropriate assessment and evaluation of formal and informal training including on-the-job training, particularly within the context of international and professional mobility.

Teaching
Teaching is an essential means for the structuring and dissemination of knowledge and should therefore be considered a valuable option within a researcher's career path. However, teaching responsibilities should not be overloaded and prevent researchers, particularly at the beginning of their careers, fully engaging in their research activities.

Employers and/or funders should ensure that teaching duties are adequately remunerated and considered in the evaluation/appraisal systems, and that time devoted by senior members of staff to the training of First Stage (R1) researchers should be counted as part of their teaching commitment. Suitable training should be provided for teaching and coaching activities as part of the professional development of researchers.

Supervision and Mentoring
Employers and/or funders should ensure that a person or a group of persons is clearly identified to whom First Stage (R1) and Recognised (R2) researchers can refer for the performance of their professional duties and should inform the researchers accordingly.

Such arrangements should clearly define that the proposed supervisor/s have an adequate level of expertise in supervising research and have the time and commitment to be able to offer the research trainee appropriate support and provide for the necessary progress and review procedures, as well as the necessary feedback mechanisms.

Relation with supervisors
Researchers in their training phase should establish a structured and regular relationship with their supervisor(s) and faculty/departmental representative(s) to take full advantage of their relationship with them.
This includes keeping records of all work progress and research findings, obtaining feedback by means of reports and seminars, applying such feedback and working in accordance with agreed schedules, milestones, deliverables and/or research outputs.

Senior researchers
Senior researchers (R3 and R4) should devote particular attention to their multi-faceted role as supervisors, mentors, career advisors, leaders, project coordinators, managers or science communicators. They should perform these tasks to the highest professional standards. Regarding their role as supervisors or mentors of researchers, senior researchers should build up a constructive and positive relationship with the First Stage (R1) and Recognised (R2) researchers, in order to set the

conditions for efficient transfer of knowledge and for the further successful development of their careers.

Section 4

R1-R4 profiles for comparable and interoperable researchers' careers

In relation to the R1-R4 profiles introduced in 2011[10], it is proposed to have an updated reference set of descriptors, addressing existing issues and making researchers' careers more comparable and interoperable across employment sectors and countries.

- **R1 - First Stage Researcher** = researchers doing research under supervision up to the point of a PhD or equivalent level of competence and experience
- **R2 - Recognised Researcher** = researchers with a PhD or equivalent level of competence and experience who are not yet fully independent in their ability to develop their own research, attract funding, or lead a research group
- **R3 - Established Researcher** = researchers with a PhD or equivalent level of competence and experience who have achieved a level of independence in their ability to develop their own research, attract funding, or lead a research group
- **R4 - Leading Researcher** = researchers with a PhD or equivalent level of competence and experience who are recognised as leading their research field by their peers

The identified existing issues with the 2011 profiles framework are:
- The term 'researcher' has not been clearly defined which allows a broader interpretation of the term to include diverse occupations in the research profession
- The profiles were intended to be sector neutral but in reality have predominantly been adopted by academia and are not so easily translatable for the business sector
- The profiles do not give adequate examples of occupations for each profile across sectors which makes it difficult for organisations to link occupations to profiles

These issues can be addressed by identifying three main categories of occupations in the research profession, providing a clear definition of 'researcher', and giving illustrative examples of research occupation titles from all sectors for relevant categories and profiles.

The research profession consists of three main categories of occupations that jointly contribute to and are crucial for research as in Figure 1:
- **Researchers**: those individuals in and outside academia doing actual research
- **Research management**: those individuals managing research projects or researchers
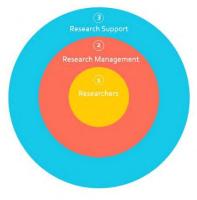- **Research support**: those individuals supporting researchers to do their research

Figure 1: Three Main Categories Involved in the Research Profession

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[10]https://cdn5.euraxess.org/sites/default/files/policy_library/towards_a_european_framework_for_research_careers_final.pdf

Based on the Frascati Manual (2015), the adopted definition of 'researcher' is as follows:

> Researchers are professionals engaged in the conception or creation of new knowledge. They conduct research and improve or develop concepts, theories, models, techniques, instrumentation, software, or operational methods.
>
> Researchers may be involved <u>fully or partially</u> in different types of activities (e.g. basic or applied research, experimental development, operating research equipment, project management, etc.) in any sector of the economy or society.
>
> Researchers identify options for new R&D activities and plan for and manage them by using high-level skills and knowledge developed through formal education and training or from practical experience in performing research.

The importance of all three categories of occupations for research is recognized, but focus is put on the category of **researchers**:

- The line "researchers may be involved <u>fully or partially</u>" above is intended to mean time spent on doing research and not on research management or research support
- The profiles R1-R4 are strictly of relevance for researchers and are not relevant for research management and research support
- The framework is flexible and recognises that an individual may be involved in hybrid combinations of roles as researcher, research manager, and/or research supporter
- The framework also recognises that some occupations may involve combinations of aspects of research, research management, and/or research support activities
- The framework further recognises that teaching activities in academia are not strictly research but constitute a critical part of the research process in research-led teaching
- The R1-R2 profiles are considered 'early-career' profiles, where researchers are either learning to do research or are for the first time working independently on research
- The R3-R4 profiles are considered 'senior' profiles where researchers have either attained recognition as an expert or as leading their research field by their peers

Examples of researcher occupations per the R1-R4 profiles are listed below in Table 1 and examples of research management and research support occupations are listed in Table 2:

- The examples are not intended to be exhaustive but serve as an indication of the types of titles for researchers across the R1-R4 profiles and across all sectors
- The examples only partially reflect the occupations for researchers listed in ESCO due to the general and non level-specific character of the occupations listed in ESCO
- The examples consist only of titles in English and we recognise that titles will differ across sectors and countries and that titles will differ across different languages
- Some researcher occupations may appear in multiple R1-R4 where the decision of profile will be dependent on the level of independence, experience, and recognition
- Some of the examples (such as consultant and policy adviser/officer) are included under the assumption that the occupation involves actual research activities
- The final decision on whether an individual and occupation is to R1-R4 will be determined case-by-case and will be dependent upon the individual and occupation

Table 1: Examples of Occupations in the European Framework for Research Careers

R1 - First Stage Researcher	R2 - Recognised Researcher
doctoral candidate	junior academic
junior academic	junior consultant
junior consultant	junior policy adviser/officer
junior policy adviser/officer	junior lecturer
junior research analyst	junior research analyst
junior research engineer	junior research engineer
junior researcher/scientist	junior researcher/scientist
junior scientific officer	junior scientific officer
research apprentice/intern	postdoctoral researcher
research assistant/technician	research assistant/technician
R3 - Established Researcher	**R4 - Leading Researcher**
accredited researcher	chief scientific officer
assistant professor	distinguished professor
associate professor	full professor
associate researcher	principal consultant
principal consultant	principal investigator
principal investigator	principal researcher/scientist
principal researcher/scientist	reader
reader	research fellow
research fellow	research professor
research specialist	research specialist
scientific councillor	scientific councillor
senior academic	senior academic
senior consultant	senior consultant
senior lecturer	senior lecturer
senior policy adviser/officer	senior policy adviser/officer
senior research and development associate	senior research and development associate senior research engineer
senior research engineer	senior researcher/scientist
senior researcher/scientist	senior scientific officer
senior scientific officer	

Table 2: Examples of Occupations in Research Management and Research Support

Research Management	Research Support
data innovation manager	data specialist
dean	data miner
director	data steward
head of department	funding/grant adviser
head of office	knowledge management adviser/officer
laboratory coordinator	laboratory assistant/technician
project manager	liaison officer
rector	librarian
research coordinator	project adviser
research group/team leader	project designer
research manager	proposal writer
research programme leader	research developer
research project leader	science communicator
scientific coordinator	scientific evaluator