



Towards a reform of the research assessment system

Scoping Report

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*Research and
Innovation*

Towards a reform of the research assessment system: scoping report

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EXECUTIVE SUMMARY

Assessment of research quality and impact, and of researchers' performance, is fundamental to selecting research proposals to fund, to deciding which researchers to recruit, promote or reward, and to identifying which research units and institutions to support.

The research process is undergoing digital transformation, and is becoming less linear and more collaborative and open, and more multidisciplinary with a larger diversity of outputs. At the same time, the current research assessment system often uses inappropriate and narrow methods to assess the quality, performance and impact of research and researchers. Notably, the quantity of publications in journals with high Journal Impact Factor and citations are currently the dominant proxies for quality, performance and impact. Many research funding and performing organisations are already taking steps to reform and improve the way they assess research and researchers, but progress remains slow, uneven and fragmented across Europe.

From March to November 2021, the European Commission consulted European and international stakeholders on how to facilitate and speed up reform so that the quality, performance and impact of research and researchers are assessed on the basis of more appropriate criteria and processes. The consultation identified objectives and outlines of a reformed research assessment system, with principles and actions that could be agreed between research funding and research performing organisations, as they have the responsibility to define their criteria and processes to assess their researchers and research projects.

The proposed way forward consists of a European agreement that would be signed by individual research funding organisations, research performing organisations and national/regional assessment authorities and agencies, as well as by their associations, all willing to reform the current research assessment system. The aim is for research and researchers to be evaluated based on their intrinsic merits and performance rather than on the number of publications and where these are published, promoting qualitative judgement with peer-review, supported by a more responsible use of quantitative indicators. The way in which the system is reformed should be appropriate for each type of assessment: research projects, researchers, research units, and research institutions. A reformed system should also be sufficiently flexible to accommodate the diversity of countries, disciplines, research cultures, research maturity levels, the specific missions of institutions, and career paths.

The agreement would confirm the commitment of the signatories to changes, along commonly agreed objectives, principles and actions. It would offer a space for individual institutions to test changes, for mutual learning, and to more safely and efficiently engage in reforms. An implementation plan would be established by the signatories, including deliverables, milestones and timeframes, in order to translate the commitments into effective changes. Measures for monitoring the progress made and for exchanging information would also be agreed among the signatories to ensure that commitments translate into tangible changes, and to ensure mutual learning for evidence-based changes. Researchers would need to be closely associated to the implementation and monitoring processes.

INTRODUCTION

Reforming research assessment is increasingly seen as a priority to ensure the quality, performance and impact of research. Reform, however, requires cultural and systemic changes that are complex and slow to implement. This report presents the findings of a series of in-depth consultation with many stakeholders (see Annex 1) over the last 9 months, as well as from extensive analysis of the literature (see Annex 2), on what goals should be pursued through reform, and on how changes could be facilitated and accelerated through a European initiative.

The starting point was the 2018 Commission Recommendation to Member States for setting and implementing clear policies to reward a culture of collaboration and of sharing of knowledge and data ([Commission Recommendation \(EU\) 2018/790 of 25 April 2018](#)). In the context of this report, we understand “research assessment” as encompassing the assessment of researchers (for their recruitment and for their career progression), of research proposals submitted to research funding organisations, and of research teams, institutes and institutions (see Annex 3). It appears from consultation that any reform of research assessment should ensure coherence or at least prevent contradictory injunctions between these different types of assessment. In addition, assessment of the research activities of academics is considered one component of broader academic assessment, together with the assessment of other activities, like teaching, entrepreneurship, management or leadership. A European initiative dedicated to improving research assessment may be seen as an opportunity for universities to also consider how to best balance the various activities of academics in their evaluation.

RATIONALE FOR REFORMING RESEARCH ASSESSMENT

The way research projects, researchers, research units, and research institutions are assessed is fundamental for a well-functioning research and innovation system. The choice by funders and institutions of what to measure for assessment directly influences research culture and behaviours, the quality of the research system and the research agenda of institutions and nations. For example, decisions on allocation of research funds, academic career advancement, and the hiring of staff, can potentially disadvantage research fields with high societal impact but low prevalence in dominant metrics.

Assessment should enable researchers, research organisations, and research funders to evaluate the quality and performance of research to achieve excellence and impact, and further strengthen societal trust in the research and innovation system and in its outputs. The assessment system should therefore incentivise higher quality, more performant and more impactful research.

The research and innovation process is undergoing major evolutions, largely due to the digitalisation of the research and discovery process: the diversity of research tasks and required skills has increased, the volume of previous findings and datasets is often staggering, and desired outputs are no longer restricted to scholarly publications; sharing knowledge and tools, and openness to contributions from other stakeholders in the system (open collaboration) have become essential to efficiency and impact; and there is a growing need of multi-, inter-, and trans-disciplinary approaches and collaboration to tackle ever more complex scientific questions and societal challenges in collaboration with societal stakeholders. There is also a continuous need to make research outputs accessible and re-usable by other researchers and the whole of society and to ensure sound methodologies that increase the reliability and reproducibility (where applicable) of research outputs.

These major evolutions are not aligned with the metrics that often dominate assessment: the number of publications and citations, and the quantity of publications in journals with high Journal Impact Factor (JIF). The race for publications – the so-called publish-or-perish culture – comes at the expense of quality, integrity, and trust in research. Also, using the JIF as a proxy for quality of research is shown to be inappropriate. Despite this, moving away from the use of JIF is non-trivial because it is easy to use and is engrained in academic culture, conferring prestige to authors and their institutions publishing in high JIF journals; whereas additional efforts may be required by alternatives such as more qualitative assessment methods.

Reforms vary depending on the type of assessment concerned. A reformed system for assessing individual researchers for recruitment or career evaluation should be based on qualitative judgement, for which peer-review is central and supported where needed by responsible use of quantitative indicators. Such assessment should acknowledge the full range of research outputs and processes, should reflect the diversity of research-related activities such as mentoring, leadership roles or outreach and interaction with society, and should take account of the diversity of individual career paths. Research units should be assessed not only on the basis of their research outputs but also on their relative contribution to research missions, while research assessment by research funders should acknowledge multi-, inter-, and trans-disciplinary research as well as research contributing to innovation and societal impact. For the research system as a whole, there is a need to reward open science practices in terms of open collaboration and early knowledge and data sharing leading to increased quality, efficiency, impact and trust. The way in which the system is reformed should be appropriate for each type of assessment.

A growing number of stakeholders, in particular associations of universities and of funders, are studying how to improve research assessment procedures. Several research organisations have already reformed or are starting to reform their own assessment systems, and some promising new practices are emerging, as illustrated by [case studies](#) identified by the [San Francisco Declaration on Research Assessment](#) (DORA) together with the European University Association and SPARC (Scholarly Publishing and Academic Resources Coalition) Europe. The recently kicked-off project for Tools to Advance Research Assessment ([TARA](#)) will also create resources and practical guidance on research assessment reform for academic and scholarly institutions. At the same time, many research funders are today experimenting with alternative assessment systems that promote a shift towards a more qualitative and inclusive assessment, and recognise a broader range of research outputs and tasks. Research funders, such as the European Commission and the European Research Council, have moved away from using the Journal Impact Factor in their funding decisions. [cOAlition S](#) funders have also committed to valuing the intrinsic merit of the work and not consider the publication channel and its impact factor when assessing research outputs during funding decisions.

The progress already made is, however, uneven across institutions and countries, with institutional-level initiatives sometimes hampered by limited autonomy in some national systems. The ongoing efforts by European stakeholders are also rather fragmented. Aligning the assessment of research projects, researchers, research units, and research institutions, across countries, along common principles, actions and monitoring arrangements would be beneficial for Europe and globally, as this would prevent contradictory injunctions across the various assessment systems and therefore allow better interoperability of the research systems, facilitate mobility and a seamless career system for researchers. Support and coordination at the European level and beyond are therefore a necessity. At the same time, a European framework would need to respect the autonomy of institutions and allow for differences in implementation. It would need to be flexible and adapted by research organisations to take into account the diversity of disciplines ranging from Science, Technology, Engineering, and Mathematics (STEM) to Social Sciences and Humanities (SSH), the variety of competence areas and talents, the differences between research cultures and countries, the diversity of research maturity levels, the diversity of research organisations and institutional missions, as well as the

differences between career stages, ranging from early career to senior. The criteria used in international rankings of institutions are often still very much based on the use of conventional publication metrics and these influence the criteria applied by universities to the assessment of their own researchers. A European framework would help to inform the criteria used by international rankings so that these evolve to recognise organisations that are truly of high quality and serve the interests of science rather than rewarding inappropriate behaviours and inhibiting reforms.

EU POLICY AND POLITICAL CONTEXT

In 2017, the Horizon 2020 Policy Support Facility (PSF) carried out a [Mutual Learning Exercise](#) between 13 European countries on incentives and rewards for researchers to engage in open science activities, and on the use of alternative (i.e. non-traditional) metrics.

In 2018, the Commission recommended that Member States set and implement clear policies to reward a culture of collaboration and of sharing of knowledge and data ([Commission Recommendation \(EU\) 2018/790 of 25 April 2018](#)).

In 2019 and 2020, a total of 41 European Universities Alliances were selected for funding from the Erasmus+ programme, with top-up funding from the Horizon 2020 programme, for activities aiming at transformation of higher education institutions in the research and innovation dimensions. Many of the Alliances included activities on research and career evaluation systems in their work plans.

In 2020, the Open Science Policy Platform, consisting of 25 major stakeholder organisations, recommended in its [final report](#) that institutions have a career and reward structure for all researchers, and particularly for early career researchers, which values and promotes, - without using the JIF as a proxy for quality - a diverse range of outputs, activities and career directions, facilitating also mobility between academia and industry or between national jurisdictions.

In 2020, the [Commission Communication COM\(2020\) 628 on a new European Research Area for Research and Innovation](#) set out as a strategic objective the improvement of the research assessment system, and the [Council Conclusions on the new European Research Area](#) of 1 December 2020 reiterated the 2018 Commission Recommendation and encouraged the Commission, Member States, and stakeholders to support and implement open science practices in their assessment systems and to strengthen their European coordination.

In 2021, the [Council conclusions on the European Universities initiative](#) of 17 May 2021 acknowledged that European Universities Alliances should be guided to explore new and attractive ways for the recruitment, reward, assessment and professionalisation of teachers, staff and researchers, working towards a better recognition and balance between educational, research, managerial and entrepreneurial achievements thus fostering good practices for recruitment and career development, while respecting work-life balance, and developing a renewed appreciation and valuation of performance. The [Council conclusions on attractive and sustainable researchers' careers and working conditions](#) of 28 May 2021 underlined that the research assessment system, being an integral part of attractive and productive careers, should focus on excellence and impact, and that more talent-based and diversity-sensitive quality measurement should be explored. Member States, Research Funding Organisations, Research Performing Organisations and the Commission, are expected to work together towards a revised system for research assessment.

On 26 November 2021, the Council adopted a Recommendation on a Pact for Research and Innovation in Europe, as a first key achievement of the new European Research Area (ERA), identifying common values and principles, including one focusing on research

assessment, and indicating areas where Member States will jointly develop priority actions. The ERA Policy Agenda 2022-2024, annexed to the Council Conclusions on the future governance of the European Research Area of 26 November 2021, includes a priority action for reforming the assessment system for research, researchers and institutions to improve their quality, performance and impact.

Work is also taking place at global level to foster international alignment on research assessment reforms. The [2021 Group of Seven \(G7\) Research Compact](#) mandated actions for collaboration on open science, including improving research assessment. Such action will be taken forward in a dedicated sub-group on research assessment and broader issues of incentives. The sub-group, which is co-chaired by the Commission, is expected to focus on how best to operationalise, internationally, a reform of current systems. The Commission has been contributing actively to the [Recommendation on Open Science](#) from the United Nations Educational, Scientific and Cultural Organization (UNESCO). The Recommendation recognises the need to review research assessment systems to align them with the principles of open science. The [Global Research Council \(GRC\)](#), which brings together science and engineering funding agencies from around the world, organized in 2020 a Conference on Responsible Research Assessment, and established in 2021 a working group dedicated to the subject.

PROPOSED APPROACH

A European initiative should aim to **facilitate and speeding up changes** to research assessment. The objective would be to **have research proposals, researchers, research units and research institutions evaluated on their intrinsic merits and performance** rather than on the number of publications and where they are published, promoting qualitative judgement with peer-review, supported by responsible use of quantitative indicators. The diversity of outputs and tasks of researchers should be rewarded, without requiring researchers to excel in all types of tasks nor contribute to all types of (potential) impacts, whereas open science practices should be stimulated by rewarding open collaboration, knowledge sharing and involvement of societal actors. Assessment should recognise achievements that do not always sit comfortably within traditional disciplinary boundaries, to encourage capacity building for multi-, inter- and trans-disciplinarity, as well as non-traditional career paths that include experience gained in other sectors. Assessment should also recognise the various contributions to scientific teams. All this should empower research organisations and the research system as a whole to achieve the highest possible quality and impact and ensure that research remains attractive to the best talents for all domains. Consultations have shown that the time is right for launching such an initiative considering the growing awareness on a European and global level about the changes needed, the several initiatives taken by individual research organisations, and the goal for Europe to remain a leader in science.

The Commission proposes to move towards a common understanding through **an agreement to be signed by individual research funding organisations, research performing organisations, and national/regional assessment authorities or agencies**, as well as by their associations, all willing and committed to reform the current research assessment system. Research funding organisations (including private foundations) and public authorities, including national assessment agencies that exist in some countries, are key drivers for changes at national and regional level, while research performing organisations (universities and research institutes) are largely responsible for setting their recruitment and staff assessment policies. The goal is to bring together a critical mass of such committed stakeholders on the basis of commonly agreed objectives, principles and actions, so that individual institutions, together, can more safely and efficiently engage in reforms. The agreement shall respect the autonomy of research organisations in setting their own recruitment and assessment policies and allow for a diversity of practices in accordance with the agreed principles. Signatories must have the possibility to test different approaches within a commonly agreed framework, and learn mutually to ensure that changes are evidence-based. Bringing research funding

and performing organisations together around common principles and ensuring mutual learning is also expected to prevent contradictions between the assessment of research proposals submitted for funding, the assessment of researchers and research units, and the assessment of institutions.

Such a **coalition approach** would help ensure ownership of the initiative by the signatories. The Commission should act as a facilitator, as well as a signatory in its role of funding organisation. The initiative should primarily target organisations from within the European Union (EU), but organisations from outside the EU could also become signatories of the agreement. The agreement would be scalable and remain open to new signatories. An implementation plan would be established by the signatories, including deliverables, milestones and timeframes, in order to translate the commitments into effective changes. It must however be acknowledged that speed of change may differ between institutions, depending on their missions, country and national framework conditions, and current assessment processes. All signatories would commit to regular and public reporting on progress towards meeting their commitments.

To be most effective, the proposed agreement may be accompanied by **support measures**:

- Some financial support may be provided by governments and research funding bodies at national and European level for the implementation of institutional changes, for monitoring progress or for developing and measuring novel assessment metrics.
- Campaigns to raise awareness among researchers and institutions should be foreseen, as well as appropriate education and training of researchers to acquire the skills necessary for the tasks and outputs on the basis of which they would be assessed.
- European Universities Alliances could constitute an important testbed for changes.
- The [European Charter for Researchers and Code of Conduct for the Recruitment of Researchers](#) dates back to 2005 and needs to be updated to respond to the new challenges and reality, including a reformed research assessment. In line with the [Council conclusions on attractive and sustainable researchers' careers and working conditions](#) of 28 May 2021, this may be done in the context of a single framework for attractive and sustainable careers within and beyond academia.
- A dialogue with national and regional authorities should seek to reduce legal obstacles and barriers to changes at national and regional level, and may address broader framework conditions, such as the balance between project-based funding and life-cycle funding, which influences the assessment processes. This could be supported by work from the Horizon Europe Policy Support Facility (PSF).
- Finally, international dialogues are needed in order to foster alignment at global level.

PRINCIPLES FOR A REFORMED RESEARCH ASSESSMENT SYSTEM

An agreement between stakeholders may contain the **principles** listed below. All proposed principles are based on the consultations and discussions with stakeholders (see Annex 1), building on:

- the values and principles enshrined in the 2021 Council Recommendation on a Pact for Research and Innovation in Europe;
- the principles, values and responsibilities laid down in the [Magna Charta Universitatum](#), revised in 2020;

- the principles and good research practices laid down in the "[European Code of Conduct for Research Integrity](#)" published in 2017 by All European Academies (ALLEA);
- the recommendations identified by the [San Francisco Declaration on Research Assessment](#) (DORA), the principles proposed by the [Leiden Manifesto for research metrics](#), and the [Hong Kong Principles](#) for assessing researchers.

A first set of higher-level principles corresponds to overarching conditions, while a second set of principles corresponds to assessment criteria and processes.

Principles for overarching conditions

- Comply with **ethics and integrity rules and practices**, and ensure that ethics and integrity are the highest priority, never compromised by any counter-incentives. Verify before or during assessment that the highest standards of general and research-specific ethics and integrity are met. Value methodological rigour to guard against sources of bias, and promote extended forms of professional and scientific integrity, showing adherence to moral standards of conduct, and include behaviours such as early sharing of research data and results, building on the work of others, and subjecting oneself to critical external validation.
- **Safeguard freedom of scientific research.** By putting in place assessment frameworks that do not limit researchers in the questions they ask, in their research implementation, methods or theories. By limiting the assessment frameworks to only those necessary, as assessment must be useful for researchers, institutions and funders.
- Respect the **autonomy of research organisations.** By safeguarding the independence of research performing organisations in the evaluation of their researchers while implementing the present principles, yet striving to prevent contradictions between the assessment of research, researchers and institutions, and between institutions, to avoid fragmentation of the research and innovation landscape and to enable the mobility of researchers.
- Ensure **independence and transparency of the data, infrastructure and criteria** necessary for research assessment and for determining research impacts; in particular by clear and transparent data collection, algorithms and indicators, by ensuring control and ownership by the research community over critical infrastructures and tools, and by allowing those assessed to have access to the data, analyses and criteria used.

Principles for assessment criteria and processes

Quality and impact

- **Focus research assessment criteria on quality.** Reward the originality of ideas, the professional research conduct, and results beyond the state-of-the-art. Reward a variety of research missions, ranging from basic and frontier research to applied research. Quality implies that research is carried out through transparent research processes and methodologies and through research management allowing systematic re-use of previous results. Openness of research, and results that are verifiable and reproducible where applicable, strongly contribute to quality. Openness corresponds to early knowledge and data sharing, as well as open collaboration including societal engagement where appropriate. Assessment should rely on qualitative judgement for which peer-review is central, supported by responsibly used quantitative indicators where appropriate.
- Recognise the **contributions that advance knowledge and the (potential) impact of research results.** Impact of research results implies effects of a scientific,

technological, economic and/or societal nature that may develop in the short, medium or long-term, and that vary according to disciplines and research types (e.g. basic and frontier research vs. applied research).

Diversity, inclusiveness and collaboration

- Recognise the **diversity of research activities and practices, with a diversity of outputs, and reward early sharing and open collaboration**. Consider tasks like peer review, training, mentoring and supervision of Ph.D candidates, leadership roles, and, as appropriate, science communication and interaction with society, entrepreneurship, knowledge valorisation, and industry-academia cooperation. Consider also the full range of research outputs, such as scientific publications, data, software, models, methods, theories, algorithms, protocols, workflows, exhibitions, strategies, policy contributions, etc., and reward research behaviour underpinning **open science practices** such as early knowledge and data sharing as well as open collaboration within science and collaboration with societal actors where appropriate. Recognise that researchers should not excel in all types of tasks and provide for a framework that allows researchers to contribute to the definition of their research goals and aspirations.
- Use assessment criteria and processes that respect the **variety of scientific disciplines, research types** (e.g. basic and frontier research vs. applied research), **as well as research career stages** (e.g. early career researchers vs. senior researchers), and that acknowledge multi-, inter-, and trans-disciplinary as well as inter-sectoral approaches when applicable. Research assessment should be conducted commensurately to the specific nature of scientific disciplines, research missions or other scientific endeavours.
- Acknowledge and valorise the **diversity in research roles and careers**, including roles outside academia. Value the skills (including open science skills), competences and merits of individual researchers, but also recognise **team science and collaboration**.
- Ensure **gender equality, equal opportunities and inclusiveness**. Consider gender balance, the gender dimension, and take into account diversity in the broader sense (e.g. racial or ethnic origin, sexual orientation, socio-economic, disability) in research teams at all levels, and in the content of research and innovation.

ACTIONS THAT SIGNATORIES OF AN AGREEMENT COULD COMMIT TO

The research performing organisations, research funding organisations (including private foundations), and their associations, and national or regional assessment authorities or agencies, signing an agreement could commit to the actions listed below. All proposed actions are based on the consultations and discussions with stakeholders (see Annex 1):

- **Work on aligning research assessment to the above principles**, building on the Pact for Research and Innovation in Europe, the DORA recommendations, the Magna Charta Universitatum, the European Code of Conduct for Research Integrity, the Leiden Manifesto, the Hong Kong Principles, and other equivalent declarations, while taking into account the diverse institutional missions and strategies of universities or other research performing and funding organisations. This would require each individual research organisation to reform its assessment criteria and processes in the spirit of the above principles and it would require establishment of task forces dedicated to implementation. Work would in particular consist of:
 - Developing assessment criteria for research proposals and of researchers' performance that:

- reward quality, and the (potential) impact of research;
 - reward research that meets the highest standards of ethics and integrity, including compliance with ethics and integrity rules and practices;
 - value the diversity of research activities and outputs;
 - consider not only the research outputs, but also the process/conduct of research, and reward good scientific practices like early sharing and open collaboration;
 - value team work, as well as cross-disciplinary collaborations when appropriate;
 - support different researcher profiles and different career paths.
- Basing assessment criteria on qualitative judgement for which peer-review is central, eventually supported by responsible use of quantitative indicators. This includes developing recruitment and assessment processes with more narrative information on achievements and potentials, and their (potential) impacts, such as narrative *Curriculum Vitae* and prospective research narratives; as well as developing and testing new indicators while moving away from the use of the Journal Impact Factor.
 - Tailoring assessment criteria and processes to respect the variety of scientific disciplines (including the creative and performing arts, humanities, and social sciences) of research maturity levels and research career stages.
 - Developing guidance for those assessed and for those assessing.
 - Ensuring transparency and wide communication about the specific criteria, methods and data used for assessment.
- **Promote high quality assessment that is evolutive, self-reflective and used wisely.** Promote mechanisms to build from lessons learnt and to ensure continuous improvements. Limit assessment to the strictly necessary, avoiding duplication of processes and excessive costs, and promote the reuse of research assessment processes and results whenever possible, considering in particular that better and more qualitative assessments may require more time from evaluators.
 - **Recognise peer-review** as part of researcher's tasks and as an important service to the scientific community. **Facilitate, incentivise, and reward peer-review tasks** carried out by researchers, of the highest quality and integrity, including open and citable peer-review.
 - As a condition for reforming research assessment, **allocate the necessary resources** to:
 - implement changes in research assessment;
 - raise awareness of all actors;
 - educate, train and support researchers and any other staff involved with assessment, including peer-reviewers and assessors/evaluators;
 - support the necessary infrastructure.

Pay particular attention to the environment offered to early career researchers. Recognise the particular role of research funding organisations in providing financial support for the implementation of institutional changes in research assessment.

- **Share information, practices and experience** among research organisations **to facilitate mutual learning** between institutions, to contribute to guidance and common approaches, and to contribute to coherence between the assessment of research proposals, researchers, research units, and research institutions). Also contribute to open infrastructures underpinning research assessment by sharing relevant data.

ORGANISATION AND MONITORING

The consultation of stakeholders identified some key parameters for implementation, but also that all implementation modalities will need to be agreed upon among the signatories of the agreement.

Once prospective signatories have been identified and have agreed on objectives, principles and actions, the coalition would have to discuss the modalities of cooperation and organise itself, informally or in a formal organisation, in order to be able to exchange practices, coordinate partners' actions, monitor progress, raise awareness and attract additional members. A multi-stakeholder consortium of associations of stakeholders and of individual institutions, together with a dedicated secretariat, could form an initial core group of the coalition to design an implementation plan and kick-off operations.

Monitoring the progress made and the adherence to commitments undertaken is thought to be an important part of this initiative since its ambition is to go beyond what is achievable by merely signing a declaration. Monitoring would be based on bottom-up voluntary contributions by the individual organisations rather than any top-down scrutiny and attribution of labels or awards. All signatories would commit to regular and public 'light' reporting on their progress towards realising their commitments, thereby being subject to scrutiny from their own communities and staff but also communicating experience to enable mutual learning and facilitate collective progress. Monitoring would nevertheless be limited to the elements strictly necessary for providing a measure of the progress made. Monitoring strategies, arrangements and any specific metrics of progress would be agreed upon among the signatories of the agreement.

Researchers, including early-career researchers, should contribute to implementation (including the definition of milestones, deliverables and timelines), as well as to the monitoring of progress made by providing information on how the policies of their institutions match the commitments made.

As Member States authorities play a key role in providing the framework conditions and support for the reforms and changes to be implemented, opportunities for discussion and updates on the work of the coalition within fora such as ERAC and the ERA Forum would be very important.

ANNEX 1: CONSULTATION OF STAKEHOLDERS

1 Description of the consultation process

To initiate consultation and debate on the proposed approach and on the content of an agreement, Commission services met with an online assembly of stakeholders on 18 March 2021. This first meeting brought together close to 130 representatives of associations of research funding organisations and research performing organisations, of individual organisations like universities and research infrastructures, as well as representatives of EU Member States and Associated Countries (National Points of Reference on Scientific Information - NPRs), to discuss how to make progress with reforming research assessment. The meeting demonstrated a high level of commitment by stakeholders and strong support to a European initiative bringing together research funders, research performing organisations and policy makers. Participants highlighted the need for researchers to play a central role in the debate and for research performing organisations to develop ownership of the initiative, as well as the need to ensure alignment between top-down approaches from funders or at national level and bottom-up activities by research performing organisations. Stakeholders asked for a sufficiently flexible framework (but also sufficiently accurate) to be developed to accommodate the diversity of countries, disciplines, research cultures, missions of institutions, and career paths. They also asked for an agreement on the core elements defining research quality (i.e. "excellence"), with full awareness that quality and excellence are not absolute but context dependent and that a good balance between qualitative assessment and quantitative indicators would need to be found.

From March to July 2021, the Commission organised a first series of online bilateral meetings with a wide diversity of associations of universities, of research funding organisations, of research institutes, of academies, and of researchers. From August to November 2021, the Commission organised a second series of bilateral meetings, mainly with individual research organisations, to widen the consultation. Each bilateral meeting consisted of 1.5 hour of discussion on the rationale for reforming the research assessment system, the principles and actions that could be agreed by stakeholders, and the approach for moving forward with implementing changes and for monitoring progress made. To ensure a structured and comparable discussion, Commission services shared a draft concept note, presenting proposals on the above-mentioned elements, and listing questions to be addressed in the bilateral meeting. The possibility for written comments was also opened post-meeting. The questions were:

- If the rationale for reforming the research assessment system is appropriately framed;
- If an agreement between stakeholders 'willing to change' would be appropriate, if a dedicated organisation should be established to support this 'coalition approach', and how it should be organised;
- If the proposed principles, actions, and monitoring mechanisms are appropriate and if there are any missing elements or changes needed;
- How much the overall level of ambition of the proposed initiative is appropriate, and would the organisation consulted be willing to sign such an agreement;
- If additional initiatives should be taken, beyond an agreement.

The bilateral meetings demonstrated overall support for the draft principles and actions consulted upon and to a coalition approach. Many stakeholders suggested that the rationale should highlight the desired research culture and behaviours, and should identify what is expected from a reformed research assessment, rather than only pointing to current issues and challenges. Several pointed to the fact that changes have already been implemented or are under progress in various institutions in Europe, and

that a European initiative would help to avoid fragmentation and facilitate mobility of researchers. A new European initiative was seen by many as an opportunity to stimulate exchange between institutions, pilot new criteria and processes, and share good practices, thus enabling evidence-learned changes. Many underlined the importance of associating researchers very closely to any reform, in particular early-career researchers, for changes to be successfully adopted and implemented, and to cater for their concerns and inputs, as they are ultimately the main actors impacted by the assessment processes. A few stakeholders called for avoiding an immediate ban of the use of the Journal Impact Factor (JIF), but rather to gradually move away from the use of JIF and to use metrics more responsibly. Some stakeholders expressed the fear that changes may dilute the importance of originality of work, going beyond state-of-the-art, and potential impacts, if many other criteria and tasks are to be evaluated as well, and that this would also increase the pressure on researchers to excel in all of them. The importance of monitoring progress was stressed by many, so that the proposed initiative doesn't represent yet another declaration of principles, but effectively stimulates implementation of changes. Several, however, expressed concerns that monitoring may represent additional bureaucratic burden and called for keeping this light and bottom-up, putting more the focus on social control, including by the researchers. The important role of EU Member States in providing favourable framework conditions was also underlined by many stakeholders.

In September and October 2021, the Commission had meetings with representatives from EU Member States and Associated Countries, notably through the European Research Area and Innovation Committee (ERAC) and the European Research Area Forum for Transition (ERA Forum), to collect comments on the proposed coalition approach, to identify any further actions that the Commission could take to support a reform of the research assessment system, and to discuss measures that national and regional authorities could take to support and incentivise a reform.

2 Consultation meetings with stakeholders

2.1 Meeting of 18 March 2021: List of organisations having participated

Name of organisation (by alphabetical order)	Category of organisation
ACA, Academic Cooperation Association	Higher education - association
ALLEA, European Federation of Academies of Sciences and Humanities	Academies and societies
CESAER, Conference of European Schools for Advanced Engineering Education and Research	Universities - association
CESSDA, Consortium of European Social Science Data Archives	Research infrastructure
cOAlition S	Funders & research performing organisations - association
Coimbra Group	Universities - association
CoNOSC, Council for National Open Science Coordination	Network
COPERNICUS Alliance	Universities - association
DARIAH, Digital Research Infrastructure for the Arts and Humanities	Research infrastructure
DORA, The Declaration on Research Assessment	Advocacy
EARTO, European Association of Research and Technology Organisations	Research and technology organisations - association

EASSH, European Alliance for Social Sciences and Humanities	Advocacy
ECIU, European Consortium of Innovative Universities	Universities - association
EGI, European Grid Infrastructure	Research infrastructure
EMBO, European Molecular Biology Organization	Researchers organisation
EPS, European Physical Society	Academies and societies
ERAC SWG HRM, European Research Area and Innovation Committee (ERAC) Standing Working Group (SWG) on Human Resources and Mobility (HRM)	Policy makers - national representatives
ERAC SWG OSI, European Research Area and Innovation Committee (ERAC) Standing Working Group (SWG) on Open Science and Innovation (OSI)	Policy makers - national representatives
EUA, European University Association	Universities - association
EuChemS, European Association for Chemical and Molecular Sciences	Academies and societies
EU-Life, alliance of European research institutes in the life sciences	Research performing organisations - association - life sciences
EURODOC, European Council of Doctoral Candidates and Junior Researchers	Researchers organisation
F1000 Research Limited	Business - publishers
FOR-EU, Association of European Universities Alliances	Universities - association
Ghent University, Belgium	University
GYA, Global Young Academy	Researchers organisation
LERU, League of European Research Universities	Universities - association
LIBER, Association of European Research Libraries	Libraries
NPRs, National Points of Reference on Scientific Information	Policy makers - national representatives
Open University of Catalonia, Spain	University
OpenAIRE, Open Access Infrastructure for Research in Europe	Research infrastructure
RDA, Research Data Alliance Foundation	Other association
Science Europe, Association of European Research Funding Organisation and Research Performing Organisations	Funders & research performing organisations - association
SPARC Europe - Scholarly Publishing and Academic Resources Coalition Europe	Advocacy
STM, International Association of Scientific, Technical and Medical Publishers	Business - publishers
The Guild, The Guild of European Research-Intensive Universities	Universities - association
UNICA, Network of Universities from the Capitals of Europe	Universities - association
University of Amsterdam, The Netherlands	University
YERUN, Young European Research Universities	Universities - association
ZonMw, The Netherlands Organisation for Health Research and Development	Funder

2.2 List of bilateral meetings with stakeholder organisations

Name of organisation (by alphabetical order)	Category of organisation
ALLEA, European Federation of Academies of Sciences and Humanities	Academies and societies
ANECA, Spanish National Agency for Quality Assessment and Accreditation	Evaluation agency
Babes-Bolyai University, Romania	University
CESAER, Conference of European Schools for Advanced Engineering Education and Research	Universities - association
cOAlition S	Funders & research performing organisations - association
Coimbra Group	Universities - association
DFG, German Research Foundation	Funder
DORA, The Declaration on Research Assessment	Advocacy
EARTO, European Association of Research and Technology Organisations	Research and technology organisations - association
EFC, Research Forum of the European Foundation Centre	Private funders - association
EMBO, European Molecular Biology Organization	Researchers organisation
EUA, European University Association	Universities - association
EU-Life, alliance of European research institutes in the life sciences	Research performing organisations - association - life sciences
EURODOC, European Council of Doctoral Candidates and Junior Researchers	Researchers organization
FCT, Portuguese Foundation for Science and Technology	Funder
FOR-EU, Association of European Universities Alliances (first generation)	Universities – association
FOR-EU2, Association of European Universities Alliances (second generation)	Universities - association
GRC, Global Research Council	Funders - association
GYA, Global Young Academy	Researchers organisation
HCERES, French High Council for Evaluation of Research and Higher Education	Evaluation agency
HRK, German Rectors' Conference	Universities - rectors conference
ISE, Initiative for Science in Europe	Researchers organisation
LERU, League of European Research Universities	Universities - association
MCAA, Marie Curie Alumni Association	Researchers organisation
Science Europe, Association of European Research Funding Organisation and Research Performing Organisations	Funders & research performing organisations - association
The Guild, The Guild of European Research-Intensive Universities	Universities - association
University of Vienna, Austria	University

YERUN, Young European Research Universities	Universities - association
ZonMw, The Netherlands Organisation for Health Research and Development	Funder

2.3 Other meetings, debates and consultations

- Online breakout session "[*Building careers and being assessed: A challenge for young researchers?*](#)" in the "Research and Innovation days 2021", European Commission, 24 June 2021.
- Hybrid session "*European Research Area Action 9, part on improving the research assessment system – State of play and exchange of views on the proposed way forward*" in the plenary meeting of the European Research Area and Innovation Committee (ERAC), Ljubljana, Slovenia, 30 September 2021.
- Online session "*Improving the research assessment system*" in the meeting of the European Research Area Forum for Transition ("[*ERA Forum*](#)"), 8 October 2021.
- Hybrid session "*Update from the Commission*" in the meeting of the European Research Area and Innovation Committee (ERAC) Standing Working Group (SWG) on Open Science and Innovation (OSI), 12 October 2021.
- Hybrid breakout session "[*European Research Area for Open Science*](#)" in the EU Presidency Conference "*New European Research Area – Towards Responsible Knowledge-Driven Society of the 3rd Millenium*" (aka "ERA Conference"), Brdo, Slovenia, 27 October 2021.

ANNEX 2: LITERATURE CONSULTED

Sorted by year of publication:

- European Commission Recommendation 2005/251 of 11 March 2005 on "The European Charter for Researchers" and on "A Code of Conduct for the Recruitment of Researchers"
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- "San Francisco Declaration on Research Assessment" – DORA (2013)
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- Wilsdon J et al. (2015) "The Metric Tide: Report of the Independent Review of the Role of Metrics in Research Assessment and Management"
<https://doi.org/10.13140/RG.2.1.4929.1363>
- Council conclusions (adopted on 27/05/2016) on "The transition towards an Open Science system" <https://data.consilium.europa.eu/doc/document/ST-9526-2016-INIT/en/pdf>
- Revised edition by All European Academies – ALLEA (2017) of the "European Code of Conduct for Research Integrity" <https://www.allea.org/wp-content/uploads/2017/05/ALLEA-European-Code-of-Conduct-for-Research-Integrity-2017.pdf>
- European Commission working group report (2017) "Evaluation of research careers fully acknowledging Open Science practices. Rewards, incentives and/or recognition for researchers practicing Open Science" <https://doi.org/10.2777/75255>
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<https://doi.org/10.2777/121253>
- Abambres M, Ribeiro T, Sousa A, Lantsoght E (2018) "Research Counts, Not the Journal". <https://hal.archives-ouvertes.fr/hal-02074859v3>
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<https://doi.org/10.1371/journal.pbio.2004089>
- Advice paper of the League of European Research Universities - LERU (2018) "Open Science and its role in Universities: A roadmap for cultural change"
<https://www.leru.org/files/LERU-AP24-Open-Science-full-paper.pdf>
- European Commission high-level advisory group report (2018) "Open Science Policy Platform recommendations" <https://doi.org/10.2777/958647>
- European Commission Recommendation (EU) 2018/790 of 25 April 2018 on "Access to and preservation of scientific information" <https://eur-lex.europa.eu/legal-content/EN/TXT/?uri=CELEX%3A32018H0790>
- Opinion of ERAC Standing Working Group on Open Science and Innovation (SWG OSI) (2018) "Recommendations on open science and innovation"
<https://data.consilium.europa.eu/doc/document/ST-1216-2018-INIT/en/pdf>

- Policy Support Facility – Mutual Learning Exercise (2018) on “Open Science - Altmetrics and Rewards” <https://rio.jrc.ec.europa.eu/en/policy-support-facility/mle-open-science-altmetrics-and-rewards>
- Moher D, et al (2019) “Hong Kong principles for assessing researchers: Fostering research integrity”. OSF Preprints. <https://doi.org/10.31219/osf.io/m9abx>
- Report of the European University Association – EUA (2019) “Research assessment in the transition to Open Science – 2019 EUA Open Science and Access Survey results” <https://eua.eu/downloads/publications/research%20assessment%20in%20the%20transition%20to%20open%20science.pdf>
- Briefing of the European University Association – EUA (2019) “Reflections on University Research Assessment: Key concepts, issues and actors” <https://eua.eu/resources/publications/825:reflections-on-university-research-assessment-key-concepts,-issues-and-actors.html>
- Agreement of the Dutch public knowledge institutions and funders of research (2019) “Room for everyone’s talent – towards a new balance in recognising and rewarding academics” https://www.scienceguide.nl/wp-content/uploads/2019/11/283.002-Erkennen-en-Waarderen-Position-Paper_EN_web.pdf
- European Commission expert group report (2019) “Indicator frameworks for fostering open knowledge practices in science and scholarship” <https://doi.org/10.2777/445286>
- European Commission high-level advisory group report (2020) “Progress on open science: Towards a shared research knowledge system. Final report of the Open Science Policy Platform”. <https://doi.org/10.2777/00139>
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- Position paper of the Initiative for Science in Europe - ISE (2020) “Position on precarity of academic careers” <https://initiative-se.eu/wp-content/uploads/2021/02/Research-Precarity-ISE-position.pdf>
- European Commission Communication COM(2020) 628 of 30 September 2020 on “A new European Research Area for Research and Innovation” <https://eur-lex.europa.eu/legal-content/EN/TXT/?uri=CELEX%3A52020DC0628&qid=1614808291158>
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EUA, and SPARC Europe <https://eua.eu/resources/publications/952:reimagining-academic-career-assessment-stories-of-innovation-and-change.html>

- Guidance document by the International Network of Research Management Societies - INORMS (2021) "*The SCOPE Framework: A five-stage process for evaluating research responsibly*" <https://inorms.net/wp-content/uploads/2021/08/scope-overview-2021.pdf>
- Conference Report 2021 from the Global Research Council (GRC) Conference held in November 2020 on "*Responsible Research Assessment*" https://www.globalresearchcouncil.org/fileadmin/documents/GRC_Publications/GRC_RA_Conference_Summary_Report.pdf
- UNESCO Recommendation on Open Science (2021) <https://unesdoc.unesco.org/ark:/48223/pf0000379949.locale=en>
- G7 Research Compact (2021) <https://www.g7uk.org/wp-content/uploads/2021/07/G7-2021-Research-Compact-PDF-356KB-2-pages.pdf>
- European Commission proposal COM(2021) 407 of 16 July 2021 for a Council Recommendation on a "*Pact for Research and Innovation in Europe*" https://ec.europa.eu/info/sites/default/files/research_and_innovation/strategy_on_research_and_innovation/documents/ec_rtd_pact-for-research-and-innovation.pdf
- Council conclusions (adopted on 17/05/2021) on "*the European Universities initiative - Bridging higher education, research, innovation and society: Paving the way for a new dimension in European higher education*" [https://eur-lex.europa.eu/legal-content/EN/TXT/PDF/?uri=CELEX:52021XG0610\(02\)&from=EN](https://eur-lex.europa.eu/legal-content/EN/TXT/PDF/?uri=CELEX:52021XG0610(02)&from=EN)
- Council conclusions (adopted on 28/05/2021) on "*Deepening the European Research Area: Providing researchers with attractive and sustainable careers and working conditions and making brain circulation a reality*" <https://data.consilium.europa.eu/doc/document/ST-9138-2021-INIT/en/pdf>
- Guideline Paper from the joint ERAC Standing Working Groups Task Force on researchers' training, incentives and evaluation in Open Science and Open Innovation - Triangle Task Force (2021) "*Research evaluation in a context of Open Science and gender equality*" <https://data.consilium.europa.eu/doc/document/ST-1201-2021-INIT/en/pdf>
- Council Recommendation of 26/11/2021 on a "*Pact for Research and Innovation in Europe*"
- Council conclusions (adopted on 26/11/2021) on "*the future governance of the European Research Area (ERA)*"

ANNEX 3: A FEW DEFINITIONS

Research assessment: The processes to “decide on the career progression of individual researchers, on the allocation of funding to research proposals, or to evaluate the performance of research institutes and universities”. ([Science Europe position statement and recommendations on research assessment processes](#), July 2020)

Responsible research assessment: “An umbrella term for approaches to assessment which incentivise, reflect and reward the plural characteristics of high-quality research, in support of diverse and inclusive research cultures”. ([The changing role of funders in responsible research assessment: progress, obstacles & the way ahead](#), November 2020)

Academic assessment: “The entire catalog of methods that are used to evaluate the outputs and impacts of academic activities for the purposes of recruitment and career progression (...), the performance of academic units, and applications for funding within institutional or national systems. While discussions on responsible practices were initially limited to “research” assessment, the scope of the debate has since been broadened to include the incentives and rewards available for all academic activities, i.e., education, research, and innovation in service to society”. ([Reimagining academic career assessment: Stories of innovation and change](#), January 2021)

Open science: “Open science is defined as an inclusive construct that combines various movements and practices aiming to make multilingual scientific knowledge openly available, accessible and reusable for everyone, to increase scientific collaborations and sharing of information for the benefits of science and society, and to open the processes of scientific knowledge creation, evaluation and communication to societal actors beyond the traditional scientific community. It comprises all scientific disciplines and aspects of scholarly practices, including basic and applied sciences, natural and social sciences and the humanities, and it builds on the following key pillars: open scientific knowledge, open science infrastructures, science communication, open engagement of societal actors and open dialogue with other knowledge systems”. ([UNESCO recommendation on open science](#), November 2021)

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Reforming research assessment is increasingly considered a priority to ensure the quality, performance and impact of research. Reform, however, requires cultural and systemic changes which are proving to be very complex and slow to implement. During the period March-November 2021, the European Commission consulted European stakeholders on how to facilitate and speed up changes. This scoping report presents the findings from the consultation, identifies the goals that should be pursued with a reform of research assessment, and proposes a coordinated approach based on principles and actions that could be agreed upon by a coalition of research funding and research performing organisations committed to implement changes.

Research and Innovation policy

