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EUROPEAN RESEARCH AREA AND INNOVATION COMMITTEE

– ERAC –
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NOTE

From:	ERAC Secretariat
To:	Delegations
Subject:	ERAC Opinion on the ERA Roadmap - Core high level indicators for monitoring progress

Delegations will find annexed to this Note the ERAC Opinion on the ERA Roadmap - Core high level indicators for monitoring progress, as adopted at the 28th ERAC meeting on 13 November 2015.

ANNEX

ERA ROADMAP

CORE HIGH LEVEL INDICATORS FOR MONITORING PROGRESS

Introduction

The Task Set by the Council

The Competitiveness Council Conclusions on 29 May, which endorsed the ERA Roadmap text, also contains the following text on indicators and future monitoring of the Roadmap :

"INVITES ERAC to propose by the end of 2015 a set of core indicators and, where appropriate, qualitative methods allowing to monitor the implementation of the ERA Roadmap. STRESSES that the monitoring of the ERA Roadmap should be put in the context of the monitoring of the ERA progress and CALLS ON the Commission to consider possible integration of the monitoring of the ERA Roadmap into the ERA Progress Report 2016 and the following ERA Progress Report exercises, in close cooperation with the Member States, while avoiding creation of unnecessary administrative burden."

Consultation Process

Building on work undertaken earlier (in particular the Workshop held in Brussels on 23 February), ERAC established a Working Group to develop these indicators. The Working Group met in Vienna on 8 June, in Luxembourg on 6 July and in Brussels on 28 September. The group involved representatives from AT, BE, CH, CZ, DE, DK, EE, ES, FR, GR, HU, IT, LT, LU, MT, NL, NO, SE, TR and UK. In addition, members of the ERA Groups were involved in all three meetings and the Groups have been associated with the process of developing the indicators, as has ERAC in its Plenary meetings (especially in Luxembourg on 7 July).

The Working Group chair also held two meetings with representatives of the Stakeholder Groups on 2 July and 14 September.

At a technical level there has been intensive collaboration between the Working Group's "core" members (AT, BE and UK), representatives of DG RTD in the European Commission and specialist Commission services in the JRC and Eurostat.

The Approach Adopted

The aim was to identify a limited set of high level indicators. A number of basic "framing" conditions was agreed in order to structure discussion:

a) The chosen indicators should be politically relevant and enable key decision makers to tell how far progress has been made on addressing key priorities identified in the Roadmap. Ideally they should not require large amounts of additional interpretative material in order to be comprehensible by ministers and other top level decision makers.

b) Outcome/output indicators would wherever possible be chosen in preference to input ones; while these latter are clearly very important, output/outcome indicators give a better sense of the overall effectiveness of policy initiatives linked to the implementation of the ERA agenda.

c) The aim should be to identify **one** high level indicator per implementation priority identified in the ERA Roadmap as suggesting a larger number would risk diluting the focus of the list. While the chosen indicator would ideally be linked to the top implementation priority identified in the Roadmap, it should also give a wider sense of what progress is being made on the wider policy dimensions linked to the relevant ERA Priority.

d) In order to avoid adding to the burdens on national administrations, stakeholders and other relevant actors, these indicators should draw on data which is already available (or forms part of statistical work already included in Commission tendering processes) for Member States.

e) The intention is that, wherever possible, the indicators should also be available for Associated Countries.

Issues to be Faced

The suggested indicators for some of the Priorities are proxies which may not be perfectly aligned with every element of the top implementation Priority. In such cases, the chosen indicator does at least give an overall message about progress on the ERA Priority. While this may not be ideal from a purist technical perspective it nevertheless meets the political requirements which underpin the Roadmap monitoring process.

Discussion of the options available threw up a number of issues. The most important of these is that in several cases the perfect indicator for a given action Priority does not exist at the moment- often because the underlying data which would be needed to create it are not currently collected or are not structured in ways which make it easy to develop the indicator in question. This is an inevitable consequence of using existing data sources. In other cases there are several possible candidates, all of them focused on specific aspects of the top action Priorities identified in the Roadmap but none of them a perfect fit; in those cases it was necessary to make choices on what to focus on.

On a more narrowly technical level, the issue of whether one should take total population or the size of the national science system as the denominator arises for some of the indicators. The latter has been preferred as this results in an indicator more closely linked to the effectiveness and productivity of national research systems[1].

The Wider Environment

It is important to recall that the Roadmap monitoring process is just one part of a wider process of developing indicators to monitor overall progress on ERA as a whole- though a central part and one which is vital to the success of this wider process. ERAC is very conscious that relying on just on indicator risks over-simplifying complex processes. As mandated by the Conclusions on the December 2014 Competitiveness Council, the Commission is currently working on a wider suite of indicators within a streamlined ERA Monitoring Mechanism (EMM).

[1] As a consequence there might be deviations from similar indicators used in the Innovation Union Scoreboard.

This will be focused on the ERA Priorities and will feed into the 2016 ERA Progress Report and its successors. The EMM will include additional input/output/outcome indicators and other relevant information on developments on the ERA Priorities. The Commission is currently considering how to integrate the proposed Roadmap indicators as a sub-set of the ERA Progress Report indicator.

In this wider context it should also be noted that the Commission and the OECD are planning to include ERA-relevant questions in their future joint (policy) surveys of research investment.

Looking ahead, the ERA Groups and the Stakeholder Organisations are encourage to continue work on identifying and developing better qualitative and quantitative indicators where these are lacking on a given ERA Priority. This work should also be taken into account by the Commission in the process of developing the EMM. In particular data availability for all Member States and Associated countries has to be carefully checked. Associated Countries are invited to send their data to Eurostat when this is not already available (as AC may not always follow EU models in structuring their data). Specialised Commission services (including Eurostat and JRC) are invited to continue technical work in order to improve the indicators further.

Conclusions

ERAC, taking note of the views of and advice from the ERA Groups and the Stakeholder organisations, agrees that the indicators set out below are the best available at the moment and endorses further work by the Commission, stakeholders and Member States to refine and strengthen them.

PRIORITY	PROPOSED INDICATOR	DESCRIPTION	SOURCE, FREQUENCY AND COVERAGE
1: Effective national research systems	Revised version of the Research Excellence Indicator, a composite indicator published annually in the Innovation Union Progress report by the European Commission	The modified version of the Research Excellence Indicator has 4 components: • -Highly cited publications (numerator: number of (top 10%) most highly-cited publications (Scopus data), denominator: total number of publications • -PCT patents (numerator: PCT patents, denominator: population) • -ERC grants (numerator: Value of ERC grants, denominator: GOVERD+HERD) • -Marie Sklodowska-Curie (MSCA) grants (numerator: number of MSCA fellows by country of host organisation, denominator: number of national MSCA fellows. The indicator is normalised (min. score, max. score 100), equal weighting (depending on testing by JRC). For the indicator scores, higher is better (maximum score: 100, minimum score: 10)	Source: European Commission, DGRTD/Joint Research Centre calculations (annual), methodological notes are published by JRC. Frequency: yearly Scope: all EU-28 countries, other ERA countries
2a: Jointly Addressing Grand Challenges	National GBARD[2] allocated to Europe-wide, bilateral or multilateral transnational public R&D programmes	Numerator : GBARD allocated to transnationally coordinated research (Europe-wide transnational public R & D programmes and bilateral or multilateral public R & D programmes established between Member State governments (and with candidate countries and EFTA countries), expressed in €. Denominator: Number of researchers in the public sector (government 'GOV' and higher education institutes 'HEI') measured in FTE's.	Source: Eurostat Frequency: Annual Scope: all EU-28 countries. The possibility of calculating this number for associated countries has to be investigated with Eurostat (IS, NO are available). Numerical values are available over the period 2007-2013 (and partially 2014)
2b: Make optimal use of public investments in Research Infrastructures - RI's	Availability of national roadmaps with identified ESFRI projects and corresponding investment needs.	Graphical presentation to visualise the degree of elaboration of the roadmaps	Source: ESFRI countries Frequency: for ERA reporting bi-annual reporting would be sufficient Scope: all ESFRI countries (EU and associated countries)

[2] GBARD will be the new name of GBAORD in the forthcoming new edition of the Frascati manual.

PRIORITY	PROPOSED INDICATOR	DESCRIPTION	SOURCE, FREQUENCY AND COVERAGE
3: Open Labour Market for Researchers	Open recruitment: Researcher posts advertised through the EURAXESS Jobs portal per thousand researchers in the public sector per year	Numerator : Number of researcher posts advertised through the EURAXESS Jobs portal Denominator : thousand researchers in the public sector (FTE)	Source: European Commission: Euraxess Job Portal. Frequency: Yearly. Scope: All EU-28 countries, and NO, IS, CH, MK and TR.
4: Gender Equality and Gender Mainstreaming in Research	Proportion of women A grade in Higher Education Sector (HES)	Numerator: Number of women grade A in HES Denominator: Sum of number of men and women grade A in HES	Source: She Figures Study (managed by DG RTD) Frequency: Every 2 years (only for this specific indicator) Scope: All EU-28 countries and CH, IS, NO, TR, (depending on contributions sent by the Helsinki Group Statistical Correspondents).
5a: Scientific knowledge transfer	Percentage product or process innovative firms collaborating with higher education institutions or with public research institutions for their innovation activities	Numerator: Number of business enterprises with product or process innovation activities that have collaborated with higher education institutions or public research institutions to implement these innovations. Denominator: Number of business enterprises with product or process innovation activities	Source: Eurostat Frequency: Every 2 years Scope: All EU-28 countries, plus NO, RS, TR.
5b: Promoting Open Access to scientific publications	Proportion of Open Access papers (Gold and Green OA only) per country	Numerator: total number of open access papers (gold and green) Denominator: total number of papers in the sample	Source: Science-Metrix or other external contracter Frequency: one-time study 2008-2013, periodical update needed. A DG RTD study has been commissioned that allows for a regular update. Scope: 44 countries including all EU-28 countries and all ERA associated countries
6: International cooperation	International scientific co-publications per thousand researchers (FTE) in the public sector	Numerator: Number of scientific publications with at least one co-author based outside of the EU/ERA-countries Denominator: Number of researchers (in thousands, FTE)	Source: This indicator is not published by Eurostat but can be produced through existing bibliometric databases. This will be covered by the same study as for 5b. Data will become available in 2016 and updated on a 6-monthly basis.