EUROPEAN RESEARCH AREA

Progress Report 2018

Country Profile

ITALY
Country profile: Italy

### Indicator: Adjusted Research Excellence Indicator (AREI)
- **Reference year:** 2016
- **Score:** 34.4
- **Cluster:** 3
- **Lead/Gap (Δ %):** -24
- **EU-28:** 45.0
- **Reference Period:** 2013-16
- **CAGR:** 3.6%
- **Lead/Gap (Δ % pt):** 0.4
- **EU-28 Trend (2007-18):** 3.2%

### Indicator: GBARD as share of GDP
- **Reference year:** 2017
- **Score:** 0.50%
- **Cluster:** 3
- **Lead/Gap (Δ %):** -21
- **EU-28:** 0.63%
- **Reference Period:** 2014-17
- **CAGR:** -1.5%
- **Lead/Gap (Δ % pt):** 0.1
- **EU-28 Trend (2007-18):** 1.7%

### Indicator: EIS Summary Innovation Index (SII)
- **Reference year:** 2017
- **Score:** 0.371
- **Cluster:** 3
- **Lead/Gap (Δ %):** -26
- **EU-28:** 0.504
- **Reference Period:** 2015-17
- **CAGR:** -0.4%
- **Lead/Gap (Δ % pt):** -2.4
- **EU-28 Trend (2007-18):** 1.9%

### Indicator: GBARD to transnatl coop (EUR/researcher)
- **Reference year:** 2016
- **Score:** 8,594
- **Cluster:** 1
- **Lead/Gap (Δ %):** 130
- **EU-28:** 3,739
- **Reference Period:** 2013-16
- **CAGR:** 3.6%
- **Lead/Gap (Δ % pt):** 0.4
- **EU-28 Trend (2007-18):** 3.2%

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- **Score:** 0.50%
- **Cluster:** 3
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- **EU-28:** 0.63%
- **Reference Period:** 2014-17
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### Indicator: EIS Summary Innovation Index (SII)
- **Reference year:** 2017
- **Score:** 0.371
- **Cluster:** 3
- **Lead/Gap (Δ %):** -26
- **EU-28:** 0.504
- **Reference Period:** 2015-17
- **CAGR:** -0.4%
- **Lead/Gap (Δ % pt):** -2.4
- **EU-28 Trend (2007-18):** 1.9%

Note: (:) = missing data, more notes and flags can be found in the "Annex: Methodological notes". (R) = rolling averages (e.g. average scores across 2007–2010, 2008–2011… 2014–2017) have been used to measure performance and growth due to pronounced short-term fluctuations. Refer to the "Annex: Guide to reading the quantitative results tables (country snapshots)" for guidance in interpreting the data presented above. Further information on the presented indicators is available in the 2018 ERA Monitoring Handbook.
COUNTRY NARRATIVE

Summary

Italy achieved its best performances in Priority 2b (Make optimal use of public investments in research infrastructures). Its scores were consistently well above the ERA average (Cluster 1). While the country has seen yearly average increases since the last ERA monitoring exercise on these indicators, it was nonetheless losing ground to fellow Member States overall, who logged even stronger increases. Italy was also quite strong, though to a lesser degree, in Priority 2a (Transnational cooperation), where it outperformed the Member States comfortably on two indicators, and made notable progress on the third since the last ERA monitoring exercise.

In a second group of priorities, Italy's performances were generally made up of a mix of scores just above (Cluster 2) and just below (Cluster 3) ERA average. Falling under this description were Priority 1 (More effective national research systems), Priority 4 (Gender equality and gender mainstreaming in research) and Priority 6 (International collaboration). Italy roughly kept pace with the progress among Member States overall in recent years, with only one indicator where Italy stood out by surpassing the EU-28 trend noticeably.

In the last group of priorities, Italy's scores converged below the ERA average (Cluster 3), with a few individual scores just above (Cluster 2) or well below (Cluster 4) that reference level. This group was made up of Priority 3 (An open labour market for researchers), Priority 5a (Knowledge transfer) and Priority 5b (Open access). Italy saw yearly average gains on Priority 3 that outpaced the EU-28 trends, while no consistent pattern emerged for the other two priorities.

An analysis of progress regarding the implementation of the ERA National Action Plan (NAP) was included as part of the country profile. The Italian NAP was ambitious and precise in their objectives, targets and indicators set. The NAP included assessment tools to measure progress and related targets for all priorities, had specific actions and defined indicators. The country has achieved medium progress with the implementation of its NAP, as from the information found on the country half of the objectives have either already been accomplished or started to be implemented.

1. More effective national research systems

In Priority 1, Italy's scores were consistently about 20 % to 25 % lower than the level across the Member States. For its share of GDP allocated to GBARD, Italy placed among countries below the ERA average (Cluster 3), but below the EU-28 benchmark (0.50 % versus 0.63 %). On this priority's headline indicator, the Adjusted Research Excellence Indicator (AREI), Italy scored 34, below the EU-28 benchmark of 45. For the EIS Summary Innovation Index (SII), the country again scored below both ERA average (Cluster 3) and the EU-28 benchmark. Yearly changes in these indicators’ scores since the last ERA monitoring exercise were close to the EU-28 trends (within 2.5 percentage points) and did not meaningfully alter Italy's position in relation to other ERA countries.

Assessment of Italian research includes a research evaluation exercise, Valutazione della Qualità della Ricerca (VQR), conducted by the National Agency for the Evaluation of the University and Research Systems (Agenzia Nazionale di Valutazione del sistema Universitario e della Ricerca - ANVUR). During the last VQR, ANVUR appointed almost 17000 external reviewers, 20% of which were international reviewers. International experts also evaluate research projects in the framework of the National Research Programme (PRIN) initiative.

The role of competitive funding has increased in Italy over recent years and it is heading in the direction of a more competitive research environment. The general government funding share assigned on a competitive basis has risen from around 15% in 2010 to 22% in 2017 and it is expected to rise towards 30% in the upcoming years. Funding assigned to research projects on the basis of proposal calls have greatly increased in 2017, passing from 96 to 396 million of euros.

Under priority 1, two main actions set in the Italian NAP were achieved. The first was the adoption of peer review procedures open to international experts as the only method for allocating the competitive portion of R&D funding to Public Research Organisations or tax credits
2. Optimal transnational co-operation and competition

   a. Transnational cooperation

Italy allocated 8,594 € to transnational cooperation per researcher in 2016. This score was more than double the 3,739 € per researcher invested by Member States overall. It placed the country in Cluster 1. Italy also performed well on its propensity to publish papers together with researchers from other ERA countries. The number of these papers with a contribution from Italy was 91 per 1,000 researchers, above the count of 71 obtained for the EU-28 as a whole. On public-to-public partnerships, Italy obtained a score below both the EU-28 benchmark and the ERA average (Cluster 3).

One salient finding on short-term score changes was found in Italy’s sustained yearly increases in public-to-public partnerships. With a CAGR more than 30 percentage points above the EU-28 trend, the country was able to reduce its gap to other Member States for this indicator. Changes for the headline indicator and the remaining complementary indicator did not substantially veer away from the EU-28 trend, as Italy basically sustained its lead in both cases since the last ERA monitoring exercise.

   b. Make optimal use of public investments in research infrastructures

Italy’s scores for ESFRI participation were all well above those of the Member States overall, nearly doubling the EU-28 benchmark level in Landmark participation and more than doubling that level in Project participation. Italy has also made yearly increases in rates of participations to both types of initiatives. It participated in 52 % of developing Projects in 2016 and 67 % in 2018. For Landmarks, its rates were of 66 % in 2016 and 73 % in 2018. Nonetheless, these yearly increases were consistently about 6 percentage points below the EU-28 trends, and other Member States have therefore been catching up to Italy since the last ERA monitoring exercise.

Note that large countries are generally advantaged on this priority since the indicators are not normalised to account for differences in the size of countries.

Despite the involvement in all ten Joint Programming Initiatives, Italy continues to struggle and face difficulties regarding common rules and terminology in implementing research and innovation programmes and has deficiency of mutually shared evaluation procedures (MIUR, 2016).

As of 2018, Italy is among the 15 countries that have national Programme for Research Infrastructures in place with both ESFRI projects and funding needs identified.

3. An open labour market for researchers

Per 1,000 researchers, Italian institutions posted almost 40 EURAXESS academic job ads in 2016, below the EU-28 benchmark of 42 ads. This score placed the country above the ERA average, in Cluster 2. Performances were weaker on the two complementary indicators. The share of Italian researchers satisfied that academic hiring processes are open, transparent and merit-based was 49 %, below the EU-28 score of 65 %. This result positioned Italy among the countries in Cluster 4. For its 3.4 % of doctoral students that come from other EU countries, Italy obtained less than half the EU-28 score and below the ERA average in Cluster 3.

Italy has achieved reductions in gaps to fellow Member States for all indicators in this priority. The most salient reduction was for researcher satisfaction with hiring processes, where yearly increases were almost 30 percentage points above the EU-28 trend. The headline indicator also saw sustained reductions in gap, with a CAGR 27 percentage points above the EU-28 trajectory.

The analysis of qualitative data indicated that Italy is suffering from deficiency of highly-skilled staff in particular in some STEM disciplines. In parallel, an increasing number of graduates leaving

1 JPI-CH; JPI-FACCE; JPI-HDHL; JPI-MYBL; JPI-UE; JPI-AMR; JPI-OCEAN; JPI-WATER; JPI-CLIMATE; JPI-ND
the country, negative trends of migrating researchers and inability to attract national and foreigner talent aggravates the problem and impacts the country’s R&I system (EC, 2016; EC, 2017a; EC, 2017b; Nascia, Pianta & Isella, 2017; Nascia, Pianta & La Placa, 2018).

In an attempt to reverse such trend, the Ministry of Education, Universities and Research (MIUR) has taken some measures, including a law regulating the recruitment and career advancement of professors. Italian Research Performing Organisations (RPOs) have also made more use of EURAXESS portal to advertise vacancies.

According to the interview programme, doctoral training programmes in Italy are in full alignment with the Principles for Innovative Doctoral Training. In particular, each PhD course currently specifies how its programme is innovative regarding international cooperation, intersectoral or multidisciplinary collaboration and it is evaluated by ANVUR on the aforementioned characteristics. A small part of the government general funding is also being distributed on the basis of the innovative principles of doctoral training.

Regarding priority 3, the Italian NAP aimed that Universities and Public Research Organisations would implement the “Human Resources Strategy for Researchers” (HRS4R), and, more specifically, the principles set out in the European Charter for Researchers on open, transparent and merit-based recruitment procedures. The target for 2020 was to have 30% of RPOs awarded the “HRS4R” logo. Indeed, progress observed under priority 3 was related to the higher percentage of Universities and Public Research Organisations awarded the “HRS4R” logo, rising from 10.6% in 2016 to 15.3% in 2018.

4. Gender equality and gender mainstreaming in research

Italy’s performances on gender equality and gender mainstreaming in research indicators were relatively close to the EU-28 benchmarks, staying within 10 % of the Member State level in all cases. For example, on the headline indicator, the share of women among Grade A positions in the national higher education system, Italy achieved a score of 22 %, compared to the 24 % EU-28 benchmark.

There was only one noteworthy measurement of short-term changes in this priority, for gender dimension in research content. Yearly increases in scores of 10 % on average put Italy ahead of the EU-28 curve and allowed it to almost close its gap with fellow Member States since the last ERA monitoring exercise. Changes for the other indicators were small and closely followed EU-28 trends.

Italy implemented specific provisions requiring RPOs to implement structured Gender Equality Plans (GEPs) (EIGE, 2016) and Research Funding Organisations (RFOs) have implemented measures regarding gender equal opportunities for scientists and/or gender dimension in research content in their evaluation criteria. The Interview programme also indicated an improvement on hiring policies, with more transparent recruitment procedures introduced recently in RFOs and RPOs.

Regarding wage gap, Italy’s 2014 unadjusted gender hourly gap for the total economy and for scientific R&D field was among one of the lowest in ERA countries. Results showed a 6.1% pay gap for total economy and 6.4% for scientific research and development services. Such percentages alone can be misleading and gender pay gap has to be linked to various legal, cultural and social factors in the country. Italy has a very low rate of female employment; therefore the pay gap can be a reflection of the small proportion of low-skilled or unskilled women in the workforce, as women struggle to access sectors and positions with a high average distribution.

Under priority 4, the Italian NAP aimed to raise the percentage of women in ‘grade A’ academic positions to 30% by 2020, in 2016 women in ‘grade A’ represented 22%, indicating progress and a small increase from 21.4% in 2014.
5. **Optimal circulation, access to and transfer of scientific knowledge including via digital ERA**

a. **Knowledge transfer**

Italy’s performances were at their weakest on this group of indicators. Scores were well below the benchmark across Member States (roughly half the EU-28 levels or less) placing the country in Cluster 4 for the headline indicator and Cluster 3 for the complementary indicators. For example, the share of Italian public R&D funded privately was 2.6% compared to 7.0% for the 28 Member States.

Italy has been catching up to other Member States for the two components of the headline indicator: the share of firms cooperating with universities or higher education institutions; and the share of firms cooperating with governmental, public or private research institutes. Here, the country’s CAGRs were 12 and 13 percentage points above the EU-28 trend, respectively. By contrast, Italy’s gap on the number of public-private collaborative papers was widening, with a CAGR about five percentage points below the EU-28 trend.

Qualitative data analysis indicated low collaboration between industry and academia, affecting consequently intersectoral knowledge transfer and business investment in R&D (EC, 2017a; EC 2017b). The Italian government has implemented different policies designed to attract foreign workers to companies and established a fiscal incentive for EU researchers (‘Rientro dei cervelli’). The scheme applies a tax break to researchers who want to work in Italy and it is planned to run for 5 years (EC, 2018).

ANVUR has dedicated resources and many efforts to monitoring the economic and social impact of knowledge transfer policies. More specifically in the last VQR exercise, ANVUR appointed a specific panel of experts to monitor activities of Italian RPOs specifically in this field. A complex system of indicators was also developed for such task, one group of indicators concerning technological transfer and another production of public goods (ANVUR, 2016). The experts assessed RPOs based on such indicators and ranked them according to their knowledge transfer activities.

b. **Open access**

Italy’s performances on Open Access (OA) indicators were all below EU-28 benchmarks by about 15% to 25%, and below the ERA averages as well (Cluster 3). The gap to EU-28 performance was least pronounced the share of Gold OA papers. This share was 26% for Italy and 30% for the 28 Member States.

MIUR calls for OA to publications and research data in line with Horizon 2020 mandate. The Conference of Italian University Rectors (CRUI) has also developed guidelines on institutional OA policies for publications and research data promoting both OA routes. So far few universities have adopted institutional OA mandates and not all national RFOs have approved policies on OA.

Recently, AISA (Associazione Italiana per la promozione della Scienza Aperta) a non-profit organisation established in 2015, with the goal of advance open access to knowledge in Italy, has made a proposal to change the Italian copyright law to be more in line with recent changes in Germany and France (changes on terms of use of copyright protected work in the fields of education and research).

6. **International cooperation**

Italy’s propensity to publish with research partners outside the ERA was similar to that of the Member States overall, with 55 such papers per 1 000 researchers compared to 54. This score put Italy among the countries in Cluster 2. Its share of medium and high technology products as a part of product exports was 52%, below the EU-28 score of 57% but above the ERA average (Cluster 2). Scores on the two other complementary indicators, share of doctoral students from outside the EU and share of knowledge-intensive service exports, were below both the EU-28 benchmarks and the ERA averages (Cluster 3).

Since the last ERA monitoring exercise, Italy’s scores on these indicators have either grown slightly or remained stable, and in all four cases remained mostly line with the EU-28 trends. Put
differently, Italy has neither lost nor gained ground to its fellow Member States on this priority in recent years.

Italy has introduced separate internationalisation strategies. National level strategies aim to enhance international cooperation focusing mainly on bilateral agreements, and prioritising the Mediterranean Region. International cooperation has also been denominated as one of the key elements for defining an innovative PhD programme and one of the criteria used during peer review process in the framework of the ANVUR research evaluation exercise.

One of the main targets on the Italian NAP regarding priority 6 was to complete the process leading to the successful establishment of the Partnership for Research and Innovation in the Mediterranean Area (PRIMA) programme. Italy has achieved such target by having the final approval of the programme and has also developed a proposal for a European Joint Programme on issues pertaining to the BLUEMED initiative, which was another target under priority 6.

References


## ANNEX: METHODOLOGICAL NOTES

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<td><strong>Adjusted Research Excellence Indicator (AREI)</strong></td>
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<td>B - Roadmap for ESFRI projects</td>
<td><strong>B - Participation in ESFRI projects and landmarks (combined)</strong></td>
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<td><strong>A - Share of public R&amp;D funded privately</strong></td>
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Additional note: For the indicator *Share of women among Grade A in HES* the definition differs for 2014 and 2016 (reference population = Academic staff)
Each profile table shows the given country’s performance score and growth for all indicators used in this study. Given that specific targets were not established for each of the 24 ERA Monitoring Mechanism (EMM) indicators for each country, it is impossible to report on a country’s level of compliance in achieving the ERA priorities, or the ERA policies/actions, that each of these indicators intends to measure (2). Instead, the level of performance in the country snapshots is compared to the EU-28 (lead/gap analysis) and ERA averages (performance clusters). These references might represent unrealistic targets for some countries, especially the smaller ones. However, care was taken to use normalised indicators (except for Priority 2b), usually by incorporating the size of a country’s population or economy in the denominator of an indicator. Additionally, the EU-28 and ERA averages might in some cases be lower than the level of performance which would be optimal towards achieving the ERA; for instance, gender equality might not have been reached in all relevant aspects at the EU- and/or ERA-wide level. That said, the main goal of these comparative analyses is to help situate countries relative to the core of the EU and ERA, so as to inform decisions on the most appropriate targets and on how to achieve them.

In addition to a measurement of performance in 2017 (or the most recent reference year for which sufficient data were available at the time of producing this report (2)), the profile table also reports on recent changes in national performance, computed as a Compound Annual Growth Rate (CAGR). The CAGR aims to assess progress made since the ERA Progress Report 2016. Accordingly, it compares the latest available year in the 2016 report to the latest available year in this report. Growth since the last monitoring exercise is also compared to the EU-28 (lead/gap analysis) to inform individual countries on the extent to which their gap with the EU-28 level of performance is closing or widening. This information is intended to help individual countries better assess the extent to which new actions are required to achieve their respective targets.

The profile table is divided in two parts: performance and growth. For performance, the reference year for each indicator is noted. If the reported year for a given country and indicator is different from the reference year, the performance score in the snapshot is highlighted using a grey font in italics. The specific year which is reported appears in the column “exception to ref. year” of the appendix table at the end of the country profile. The appendix table also lists the years for which a flag is applied to the data. The performance section of the snapshot table also provides the EU-28 scores across indicators upon which the country lead/gap, in percent difference to the EU-28 score, is computed. Furthermore, the performance clusters from the main report have also been presented here; recall that countries more than one standard deviation above the unweighted ERA average (i.e. average across member states and associated countries for which data is available for each indicator) are in Cluster 1, the strongest cluster; those at or above the unweighted ERA average but within one standard deviation are in Cluster 2; those below the unweighted average but within one standard deviation are in Cluster 3; those more than one standard deviation below the ERA unweighted average are in Cluster 4, the weakest cluster.

For growth, the reference period used in computing the Compound Annual Growth Rate (CAGR) is also presented, alongside the actual CAGR. Again, exceptions to the reference period are highlighted by using a grey font in italics to display the actual CAGRs of the corresponding country and EU-28. Information on the specific years used in these cases are again available in the appendix tables. The lead/gap analysis for growth shows the percentage point difference between the country’s CAGR and the CAGR of the EU–28 average. The CAGR measures growth relative to the latest available year in the 2016 ERA Progress Report. Since there were retrospective corrections to the scores of countries on some indicators, growth was computed based on the updated time series. Trend lines over the longest available period for a given indicator are provided to inform on longer-term patterns of progress towards realising the ERA. Empty lines in the trend indicate either that data was missing for that year, or that the country’s score was zero. For one indicator where short-term fluctuations were particularly pronounced (gender dimension in research content in priority 4), rolling averages (e.g. average scores across 2007–2010, 2008–2011... 2014–2017) have been used to measure performance and growth. In such cases, the CAGR measures the year-by-year percent change in the rolling average of an indicator between the starting and ending periods (e.g. between 2011–2014 and 2014–2017). These cases are

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2 A more in-depth assessment of progress of implementation of ERA policies was rather achieved in the text of country profiles (not the snapshot tables) accounting for quantitative (where available) and qualitative (especially) elements in relation to the objectives, baselines, targets, timelines and milestones established by individual countries in their National Action Plans (NAP).

3 Refer to the 2018 ERA Monitoring Handbook for the extraction dates of the presented data.
highlighted by the addition of the superscript (R) to the reference year (performance) and period (growth) of the concerned indicators.

The lead/gap analyses, both for performance and for growth, have been colour-coded to help visually elucidate patterns in the findings. The colour scheme for the country profiles ranges from dark blue (weakest scores) to dark orange (strongest scores), as was applied in the main report. There is, however, a key difference to note. In the main report, the colouring compared the results of different countries along a single indicator, in these country profile tables the colouring compares the results of one country along several indicators, to highlight its relative strengths and weaknesses across indicators. More specifically, in each profile, blue always indicates that a country is below the EU–28 average, and orange always indicates that it is above, but the shade of blue and orange (dark or light) is relative to the country’s own performance across indicators, rather than relative to the performance of other countries.

Indicators in bold are the Headline indicators that were selected as being the most relevant in monitoring progress in achieving the ERA by the European Research Area and Innovation Committee (ERAC). Within each priority, the Headline is followed by the two complementary EMM indicators identified by ERAC. Lack of data is identified by using a symbol (:) within the table cells.

Due to changes and discontinuities in data collection, some indicators have been updated, modified or replaced. A first modification was introduced for the complementary EMM indicators of Priority 2b (Make optimal use of public investments in research infrastructures). Here, findings are now provided on a combined indicator that better illustrates how level of engagement in ESFRI developing Projects and Landmarks are connected rather than independent.

For the headline indicator of Priority 5a, the underlying data coming from Eurostat was for the first time aggregated in a manner that made it possible to present a single metric (in terms of performance) merging both of its underlying dimensions (4); that is the share of product and/or process innovative firms cooperating with 1) universities or higher education institutions, or 2) with government, public or private research institutes. For growth, these two dimensions still had to be kept separated in this edition.

The indicators on the share of a country’s peer-reviewed scientific papers that are available in Open Access (i.e. Total, Gold and Green OA) in Priority 5b have all been impacted by a revised definition of what constitute Green Open Access papers (see Section 3.5.5 of the Main Report for a description of this change). The indicator on the inclusion of OA policies in RIO policy repositories was discontinued since the new reporting guidelines for RIO policy reports no longer ask the experts to report on OA specifically. It has been replaced by a qualitative assessment of the NAPs and other information sources. A new indicator was also added to Priority 5b to fill a data gap in the 2016 ERA Progress Report; no data was available in 2016 for the share of research performing organisations (RPOs) making their research data available in OA. The share of research performing organisations (RPOs) making their research data available in OA has been replaced by the share of life sciences papers to which a country contributed and that have at least one open dataset in Figshare.

Due to discontinued data, the indicator on “Licence and patent revenues from abroad as a share of GDP” in Priority 6 has been replaced by two new indicators: knowledge intensive services exports as percentage of total services exports and exports of medium and high technology products as a share of total product exports; this modification coincides with a similar replacement in the 2018 European Innovation Scoreboard (EIS). Changes in the data for some countries also led to changes in EU28 aggregate scores the following two indicators: the share of doctoral candidates with a citizenship of another EU Member State (Priority 3) and non-EU doctorate students as a share of all doctorate students (Priority 6). Additional modifications in the approach used in computing EU-28 aggregate scores (e.g. imputation of missing data) led to some changes in the GBARD (EUR) allocated to Europe-wide transnational, as well as bilateral or multilateral, public R&D programmes per FTE researcher in the public sector (Priority 2a).

Finally, the composite indicators combining findings from headline and complementary indicators within and across ERA priorities have not be computed in the 2018 ERA monitoring exercise. The rationale for these changes is detailed in the 2018 ERA Monitoring Handbook.

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4 The new aggregation provided by Eurostat enabled this change by removing duplicated count of firms falling in both types of partnerships.
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  from the delegations in non-EU countries (http://eeas.europa.eu/delegations/index_en.htm);
  by contacting the Europe Direct service (http://europa.eu/europedirect/index_en.htm) or calling 00 800 6 7 8 9 10 11 (freephone number from anywhere in the EU) (*).

(*) The information given is free, as are most calls (though some operators, phone boxes or hotels may charge you).

**Priced publications:**
The 2018 ERA Progress Report assesses the current state of the European Research Area (ERA) and the progress made on ERA implementation in 2016-2018. It is the second time in a row that progress has been measured at country level using the ERA monitoring mechanism.

Based on the overall evolution of the headline indicators, progress on ERA implementation continues, albeit at a slower pace than before. This trend calls for a renewed commitment to (i) further strengthening shared efforts at all levels; (ii) reforming national research and innovation systems; and (iii) realising a well-functioning ERA. The Commission has anticipated this need by proposing a number of programmes for the next financing period 2021-2027: these include regional funds, a European reform delivery tool, and the EU’s next research and innovation framework programme — Horizon Europe, which includes a dedicated pillar to help strengthen the ERA.

*Research & Innovation policy*