European Commission

ERA Country Report 2024
Portugal

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Report

Research and Innovation

ERA Country Report 2024: Portugal

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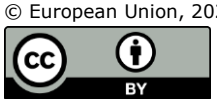
Manuscript completed in June 2025



EUROPEAN COMMISSION

ERA Country Report 2024

Portugal

This report was prepared by

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as part of the project ‘Implementation of the ERA Monitoring Mechanism’ for the European Commission, Directorate-General for Research and Innovation (RTD/2023/OP/0017)

2025 Directorate-General for Research and Innovation EN

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Key takeaways

- Portugal has shown significant efforts in implementing activities related to the European Research Area (ERA). National research and innovation policies are generally aligned with ERA objectives.

- The country has made considerable progress in implementing ERA-related actions, demonstrating consistent improvements in its research and innovation landscape. This positions Portugal as a relevant contributor to broader ERA goals. However, there are areas where further development is needed, and targeted efforts will be necessary to address these gaps.

- To enhance the effectiveness of its ERA monitoring efforts, the country would benefit from the establishment of more formalised mechanisms (e.g., dedicated plans and reports) by relevant entities to improve tracking, alignment, and overall performance.

- To enhance its position within the ERA, Portugal would benefit from a clearer and more consistent strategy for its participation. A well-defined approach would offer stronger guidance in aligning national policies with the ERA Policy Agenda, ensuring greater coherence and impact.

1. National context

Portugal is a medium-sized European Union (EU) member state with a population of 10.5 million as of 2023. The country is classified as a *Moderate Innovator* in the 2024 European Innovation Scoreboard, ranking 23rd in the Innovation Index with a performance level at 83.5 percent of the EU average.[1] Since 2017, Portugal's innovation performance has grown by 4.3 percent, lagging behind the EU's overall increase of 10 percent.

Table 1 Structural Key Indicators

Indicator	EU27	Portugal		
	2023	2023	Average 2018-2020	Average 2021-2023
GDP in euro per capita, current prices	35 790.00	23 300.00	19 820.00	21 153.33
Gross Domestic Expenditure on R&D (GERD) as a share of GDP	2.27	1.70	1.45	1.69
Government Budget Allocations for R&D (GBARD) as share of GDP	0.73	0.30	0.36	0.33
Business Enterprise expenditure on R&D (BERD) as a share of GDP	1.52	1.06	0.78	1.04
Expenditure on R&D procurement as a percentage of GDP	0.06	0.04	/	0.04
Size of the population (million)	448.80	10.52	10.35	10.44
Researchers (in full-time equivalent - FTE) per million inhabitants	4 681.34	5 676.94	4 863.39	5 592.20
Share of female researchers, all sectors of performance (%)	33.71	/	42.85	/

Source: Annex 1

In 2023, Portugal's Gross Domestic Expenditure on R&D (GERD) accounted for 1.7 percent of GDP, below the EU average of 2.27 percent. However, it reflects steady progress, increasing from an average of 1.45 percent during 2018-2020 to 1.69 percent in 2021-2023. Similarly, Business Enterprise Expenditure on R&D (BERD) rose to 1.06 percent of GDP in 2023, up from 0.78 percent in 2018–2020 and 1.04 percent in 2021-2023, aligning closely with the EU trend of growing private-sector R&D investment. Portugal demonstrates strong performance in human capital, with 5,677 researchers per million inhabitants in 2023, surpassing the EU average of 4,681. Notably, the share of female researchers across all sectors averaged 42.9 percent during 2021–2023, well above the EU27 average of 33.7 percent. Public and private-sector partnerships, along with a growing emphasis on digitalisation and the green transition, are strengthening Portugal's innovation ecosystem. However, expenditure on R&D procurement remains low at 0.04 percent of GDP, below the EU average of 0.06 percent.

2. Status of the Implementation of the ERA Policy Agenda

Chapter 2 briefly summarises **new developments in Portugal since the publication of the ERA Country Report 2023**, based on the commitments to ERA Actions. The findings are based on qualitative desk research and interviews. Portugal has **committed to all ERA Actions currently under implementation**, covering all four Priority Areas (see Table 2). The national implementation of the European Research Area (ERA) actions is overseen by the

[1] See https://ec.europa.eu/assets/rtd/eis/2024/ec_rtd_eis-country-profile-pt.pdf

Ministry of Education, Science, and Innovation (MECI) and primarily executed by the Foundation for Science and Technology (FCT) and the National Innovation Agency (ANI). There is no dedicated national ERA action plan. Progress is monitored by FCT and ANI, who collect and report data on activities and outcomes related to ERA priorities.

Table 2 Commitment to ERA Actions

1: Deepening a truly functioning internal market for knowledge								
1. Enable Open Science, including through EOSC	2. Propose an EU copyright and data legislative framework for research	3. Reform the Assessment System for research, researchers and institutions	4. Promote attractive research careers, talent circulation and mobility	5. Promote gender equality and foster inclusiveness	6. Protect academic freedom in Europe	7. Upgrade EU guidance for a better knowledge valorisation	8. Strengthen research infrastructures	9. Promote international cooperation
2: Taking up together the challenges posed by the twin green and digital transition, and increasing society's participation in the ERA					3: Amplifying access R&I excellence across the Union		4: Advancing concerted research and innovation investments and reforms	
10. Make EU R&I missions and partnerships key contributors to the ERA	11. An ERA for green transformation	12. Accelerate the green & digital transition of Europe's key industrial ecosystems	13. Empower Higher Education Institutions	14. Bring Science closer to citizens	16. Improve EU-wide access to excellence	17. Enhance public research institutions' strategic capacity	19. Establish an ERA monitoring system	

Source: European Commission (Note: Actions 15, 18 and 20 were not implemented)

Portugal's commitment to these ERA Actions reflects a comprehensive approach to modernising its R&I landscape, driven by several strategic motivations: alignment with EU priorities; support for national R&I goals and synergy with Portugal's key frameworks (e.g., Portugal 2030 and National Recovery and Resilience Plan (PRR));[2] and ensuring complementarity between EU funds and national R&I projects. Portugal's main priorities under the ERA framework focus on promoting an **internal market for knowledge** by supporting open science, knowledge valorisation, research careers and infrastructures, gender equality, and international cooperation. Enhancing **research and innovation excellence** through investments in Research Performing Organisations - in particular R&D Units, State Laboratories, Associate Laboratories, and Collaborative Laboratories - as well as their relationship with the Higher Education sector remains a key priority, alongside with fostering **green and digital transitions** and ensuring that EU R&I missions and partnerships play a pivotal role in advancing the ERA objectives.

ERA Priority 1: Deepening a truly functioning internal market for knowledge

ERA Action 1) Enable the open sharing of knowledge and the re-use of research outputs, including through the development of the

The country has shown engagement with EOSC by facilitating the integration of national research infrastructures[3] and has promoted the alignment of its R&D data repositories and digital platforms with EOSC standards.[4] Portuguese higher education and research institutions are also contributing through projects and pilot actions designed to foster cross-border collaboration and improve data sharing practices. Led by the National Scientific Computing Unit of the Foundation for Science and Technology (FCCN/FCT), the Open Access Scientific Repositories of

[2] What it is Portugal 2030 - Portugal 2030. (2023). Portugal 2030 https://portugal2030.pt/en/portugal-2030/o-que-e-o-portugal-2030; *Plano de Recuperação e Resiliência - Recuperar Portugal*. (2025). Plano De Recuperação E Resiliência - Recuperar Portugal. https://recuperarportugal.gov.pt

[3] FCT. (2020). Portuguese Roadmap of Research Infrastructures – 2020 Update. In *Portuguese Roadmap of Research Infrastructures – 2020 Update* [Report]. https://www.fct.pt/wp-content/uploads/2022/06/Portuguese_Roadmap_Infrastructures2020.pdf

[4] *Portugal - EOSC Association*. (2024). EOSC Association. https://eosc.eu/tripartite-collaboration/portugal

European Open Science Cloud (EOSC)

Portugal initiative[5] has been developed as a single-entry point for searching and discovery of scientific and scholarly publications. Portugal has also fostered collaboration to ensure that Open Science practices are widely adopted and sustainably integrated into the research ecosystem.[6]

ERA Action 2) Propose an EU copyright and data legislative and regulatory framework fit for research

Through the Decree-Law 47/2023[7] that came into force on 1st January 2024, provisions of the Directive on Copyright in the Digital Single Market (2019/790) relevant to research, such as text and data mining (TDM), were enacted. FCT has integrated principles of open access and data sharing into national funding guidelines, mandating researchers to make publicly funded outputs available under open licenses where possible, encouraging compliance with the EU's open data policies while balancing the need for copyright protection.

ERA Action 3) Advance towards the reform of the Assessment System for research, researchers and institutions to improve their quality, performance and impact

Portugal has been pursuing reforms to its assessment systems for research, researchers, and institutions. FCT, research organisations and Higher Education Institutions are updating their evaluation framework. In particular, FCT has implemented new measures to recognise the diversity of research outputs, updated criteria for awarding research grants, as well as for the evaluation of project proposals. Greater emphasis has been placed on scientific breakthroughs, knowledge valorisation and its dissemination, interdisciplinary approaches, and societal impact. This also includes the adoption of narrative CVs.[8] Around 30 Portuguese institutions engage in the Coalition for Advancing Research Assessment (CoARA)[9] and have also formed a CoARA National Chapter (CNP - CoARA), through which universities, research institutions and FCT collaborate to advance research assessment practices. Additionally, Portuguese organisations have participated in Horizon Europe's initiatives that support institutional changes, provide recommendations, and promote metrics that reward open science and collaborative research practices.

ERA Action 4) Promote attractive and sustainable research careers, balanced talent circulation and international, transdisciplinary and intersectoral mobility across the ERA

Portugal has implemented various measures under ERA Action 4 and has also co-lead this Action at EU-level. A revision of the scientific career statute was proposed in a law that received general endorsement by Parliament in December 2024 and is now under detailed discussion by a dedicated committee. The new statute, expected to take effect in 2025, aims to promote greater interoperability between research and higher education careers, and to reduce precarious employment conditions, particularly among early career researchers. Following stakeholder consultations, FCT is implementing several measures to promote researchers' working conditions. These include the RESTART Programme, which supports researchers returning from parental leave, alongside efforts to foster long-term funding opportunities and simplify access to grants and

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[5] Repositórios Científicos De Acesso Aberto De Portugal (n.d.). *Portal de Pesquisa RCAAP*. RCAAP - Repositórios Científicos De Acesso Aberto De Portugal. https://www.rcaap.pt

[6] Fundação para a Ciência e a Tecnologia, I.P. (2025). *Acesso aberto a publicações científicas - FCT*. FCT. https://www.fct.pt/sobre/estudos-e-planeamento-estrategico/politicas-de-ciencia-aberta/acesso-aberto-a-publicacoes-cientificas

[7] Diário da República: Decreto-Lei N.o 47/2023, de 19 de junho. (2023). Retrieved December 18, 2024, from https://diariodarepublica.pt/dr/detalhe/decreto-lei/47-2023-214524782

[8] See FCT. (2023). RESTART Programme opened applications. Retrieved from https://www.fct.pt/en/programa-restart-abriu-as-candidaturas and FCT (n.d.). FCT-Tenure | 1st Edition - FCT. Retrieved from https://www.fct.pt/en/concursos/fct-tenure-1-edicao

[9] CoARA Signatories. (2024). Retrieved from https://coara.eu/agreement/signatories/?category%5B0%5D=funders&category%5B1%5D=portugal

fellowships. Initiatives such as the FCT-Tenure programme,[10] the Individual Call for Scientific Employment Stimulus,[11] and the ERC-PT Careers programme aim to offer more stable employment opportunities for early- and mid-career researchers. In 2024, FCT also launched the "FCT Mobility" programme,[12] promoting the mobility of Portuguese doctoral researchers abroad and attracting foreign doctoral researchers to Portugal. Furthermore, the country is promoting funding programmes to enhance intersectoral mobility, encouraging PhD training in non-academic environments, and supporting these efforts through fiscal incentives. Additionally, a series of workshops is being organised to promote the uptake of career support measures, particularly to advance the HR Excellence in Research Award, in cooperation with stakeholders.

ERA Action 5) Promote gender equality and foster inclusiveness, taking note of the Ljubljana declaration

Efforts to enhance the representation of women in leadership and decision-making roles have been a key priority, enshrined in the Plan for Equality and Non-Discrimination 2024-2026.[13] This priority is reflected in several mid-term targets, including promoting gender balance in the management and governance bodies of HEIs, increasing the number of women researchers engaged in R&D activities, and boosting the proportion of women among associate professors, principal coordinators and full professors. Additional measures are also foreseen to address the feminisation of higher education degrees in ICT fields. The Restart Programme launched by FCT (2nd edition, March 2024)[14] supports researchers who have taken parental or adoption leave, promoting gender equality opportunities through the competitive funding of individual R&D projects across all scientific domains. The recommendations of the national report issued by the Commission for Monitoring the Implementation of Policies to Prevent Harassment in Higher Education Institutions (December 2024)[15] demonstrate alignment with the guidelines developed by the ERA Forum subgroup 'Inclusive Gender Equality in the ERA' to counteract gender-based violence, including sexual harassment, in the European R&I system.[16] Further commitment with European policies is also evident in FCT's participation in the initiative 'GENDERACTION Plus'.[17] The FCT "Code of Ethics and Conduct",[18] came into force in September 2024, outlining the ethical principles and standards of conduct expected of FCT employees, collaborators, and stakeholders. The "Gender

[10] Fundação para a Ciência e a Tecnologia, I.P. (n.d.). FCT-Tenure | 1st Edition - FCT. Retrieved from https://www.fct.pt/en/concursos/fct-tenure-1-edicao

[11] Concurso Estímulo ao Emprego Científico Individual - 7.ª Edição. (2025). Retrieved from https://www.fct.pt/concursos/concurso-estimulo-ao-emprego-cientifico-individual-7-edicao

[12] Reis, J. (2024). New "FCT Mobility" program supports international mobility of researchers. Retrieved from https://www.fct.pt/en/novo-programa-fct-mobility-apoia-a-mobilidade-internacional-de-investigadores-as

[14] Fundação para a Ciência e a Tecnologia, I.P. (n.d.-b). Programa RESTART - 2a edição - FCT. Retrieved from https://www.fct.pt/concursos/programa-restart-2-edicao

[15] Casaca *et al* (2024). Relatório da Comissão para o Acompanhamento da Implementação das Estratégias de Prevenção da Prática de Assédio nas Instituições de Ensino Superior. Retrieved from https://www.portugal.gov.pt/download-ficheiros/ficheiro.aspx?v=%3d%3dBQAAAB%2bLCAAAAAAABAAzN-DExMAYAdBPeZgUAAAA%3d

[16] European Commission: Directorate-General for Research and Innovation, *Zero-tolerance code of conduct – Counteracting gender-based violence, including sexual harassment, in the EU research and innovation system*, Publications Office of the European Union (2024) https://data.europa.eu/doi/10.2777/044501

[17] GENDERACTIONplus. (2025). Homepage | GENDERACTIONPlus. Retrieved from https://genderaction.eu/

[18] Fundação para a Ciência e Tecnologia. (2024). Código de Ética e Conduta CEC-FCT. *https://www.fct.pt/wp-content/uploads/2022/03/CEC-FCT_a-vigorar-desde-09.2024.pdf*.

Equality Welcome Manual"[19] was launched in September 2023 and is a practical guide designed to foster gender equality and inclusion within the science and technology sectors in Portugal.

ERA Action 6) Deepening the ERA through protecting academic freedom in Europe

According to a study conducted for the European Parliament in 2023,[20] the legal protection of academic freedom in Portugal is well developed and above the EU average. However, institutional autonomy remains at a medium level. The funding provided by FCT for independent research projects contributes to reinforcing academic freedom by enabling researchers to explore novel and unconventional research paths. While the legal framework and institutional mechanisms to safeguard academic freedom are well established, further efforts are needed to strengthen their practical implementation, including promoting institutional self-governance, developing diversified and sustainable funding models, enhancing the capacity to identify and mitigate risks to academic freedom and research integrity, and ensuring that researchers can work in an environment free from undue external pressures.

ERA Action 7) Upgrade EU guidance for better knowledge valorisation

Portugal has developed a range of policies and initiatives aimed at transforming research outcomes and innovations into tangible economic and social benefits. Collaborative networks and technology transfer initiatives are primarily driven by the National Innovation Agency (ANI),[21] which also manages a comprehensive range of incentive mechanisms to foster research and technological development, innovation, digitalisation, and internationalisation in the private sector. The country hosted the *Tour des Capitales*, a two-day event in Lisbon organised by the Ministry of Science, Technology and Higher Education (MCTES, the former designation of the current MECI), in collaboration with the European Commission, FCT, and ANI, to discuss challenges and opportunities for accelerating innovative solutions.[22]

[19] FCT. (2023). *Parentalidade, Conciliação entre a Vida Profissional Pessoal e Familiar, Assédio no Trabalho, Políticas para a Igualdade de Género, Direito à Igualdade e Não Discriminação, Nos seus instrumentos de financiamento, Em caso de incumprimento contactar, Manual de Acolhimento da FCT em Igualdade*. Retrieved from https://www.fct.pt/wp-content/uploads/2023/11/Manual_Acolhimento_FCT_IG.pdf

[20] Maassen, P., Martinsen, D., Elken, M., Jungblut, J., & Lackner, E. (2023). State of play of academic freedom in the EU Member States (report PE 740.231). (Panel for the Future of Science and Technology, European Parliamentary Research Service, & Scientific Foresight Unit), *State of Play of Academic Freedom in the EU Member States*. European Union. https://doi.org/10.2861/466486 (Original work published 2022)

[21] AD&C - Agência para o Desenvolvimento e Coesão, ADENE - Agência para a Energia, AICEP – Agência para o Investimento e Comércio Externo de Portugal, ANI - Agência Nacional de Inovação, APA - Agência Portuguesa do Ambiente, Associação Startup Portugal, Baptista, F. (2022). *Relatório Nacional de Inovação 2ª Edição, 2022*. Retrieved from https://ani.pt/wp-content/uploads/2024/11/RelatorioNacionalInovacao22.pdf

[22] Ministry of Science, Technology and Higher Education; National Innovation Agency; Foundation for Science and Technology; European Commission (2023). *ERA Forum Tour des Capitales – Lisboa: Agenda*. 14–15 November 2023, Museu do Oriente, Lisbon. Retrieved from https://www.fct.pt/wp-content/uploads/2023/11/ERA_forum_tour_des_Capitales_Lisboa_Agenda.pdf

ERA Action 8) Strengthen sustainability, accessibility and resilience of research infrastructures in the ERA

Portugal is implementing a National Roadmap of Research Infrastructures of Strategic Interest (RNIE),[23] developed and updated by FCT. This roadmap identifies and supports strategically important research infrastructures (RIs) across diverse domains, including physical sciences and engineering, health and food, environment, energy, social and cultural innovation, and digital technologies. RNIE is closely aligned with the European Strategy Forum on Research Infrastructures (ESFRI),[24] integrating Portuguese RIs into the broader European research ecosystem. Challenges remain, including the financial sustainability of RIs, regional disparities in access, integration of smaller RIs into national and European systems, and the enhancement of infrastructure services.

ERA Action 9) Promote a positive environment and level playing field for international cooperation based on reciprocity

Portugal has strategically strengthened international collaboration. The country's strategy prioritises active participation in Horizon Europe and other EU programmes, bilateral partnerships with non-EU countries, and active engagement in multilateral organisations, such as the OECD and UNESCO.[25] FCT currently participates in 19 European partnerships and has engaged in 16 calls launched since the start of Horizon Europe. This participation has enabled the funding of 93 research projects involving Portuguese institutions through competitive transnational calls. As a result, FCT allocated approximately EUR 11.5 million to Portuguese institutions, which leveraged an additional EUR 7.3 million in funding from the European Union. The national success rate in European partnerships stands at 26 percent. In addition, Portugal has established bilateral agreements with around 20 countries worldwide, with recent growth[26] including partnerships with China, Brazil, and three U.S. universities. Further plans are underway to strengthen research and innovation collaboration with Portuguese-speaking African countries.

ERA Priority 2: Taking up together the green transition and digital transformation and other challenges with impact on society and increasing society's participation in the ERA

ERA Action 10) Make EU R&I missions (10.1) and partnerships (10.2) key contributors to the ERA

Portugal actively participates in the EU research and innovation missions under Horizon Europe, including the Cancer Mission, Adaptation to Climate Change Mission, Climate-Neutral and Smart Cities Mission, Soil Deal for Europe Mission, and Restore Our Ocean and Waters Mission. In addition, Portugal has contributed to the Horizon Europe Policy Support Facility (PSF) Mutual Learning Exercise (MLE) on the implementation of EU Missions at national level and has been involved in the Horizon Europe Commission expert group on the Partnership Knowledge Hub (PKH). During the first four years of Horizon Europe (2021-2024), the 18 technology-driven European partnerships currently underway have allocated nearly EUR 7 billion, of which Portugal has secured approximately EUR 117 million. Furthermore, Portuguese entities have obtained around EUR 121.5 million through the European Innovation Council (EIC) instruments supporting deep-tech innovation.

[23] Fundação para a Ciência e a Tecnologia, I.P. (2024). Infraestruturas de investigação – FCT. Retrieved from https://www.fct.pt/financiamento/programas-de-financiamento/infraestruturas-de-investigacao
[24] ESFRI (n.d.). Retrieved from https://www.esfri.eu
[25] Fundação para a Ciência e a Tecnologia, I.P. (2022). Internacional - FCT.
[26] Foundation for Science and Technology, I.P. (2023). Bilateral Cooperation - FCT. https://www.fct.pt/en/internacional/cooperacao-bilateral

An analysis of Portugal's participation in technology-based European partnerships, particularly in strategic priority areas for the European Union, shows that the country ranks among the top 10 in four partnerships in terms of secured funding: AI, Data and Robotics; Smart Networks and Services Joint Undertaking; Made in Europe; and Built4People.

ERA Action 11) An ERA for green transformation

Portugal has participated in and monitored the agenda-setting process of the ERA pilot on Green Hydrogen, ensuring its potential incorporation into national policy instruments and subsequent implementation. In parallel, the country has developed initiatives such as the Roadmap for Carbon Neutrality 2050,[27] demonstrating its strategic commitment to sustainability. The country also engages in European research programmes, including Horizon Europe's Green Deal Missions, and participates in European Partnerships such as the Clean Hydrogen Partnership and the Circular Economy Partnership.[28] Additionally, through ANI and the Directorate-General for Energy and Geology (DGEG), Portugal is involved in the Implementation Working Group of the Strategic Energy Technology (SET) Plan dedicated to hydrogen, further reinforcing its commitment to advancing green technologies.

ERA Action 12) Accelerate the green/digital transition of Europe's key industrial ecosystems

Portugal has advanced ERA Action 12 by supporting the development of strategies that promote sustainability across economic, environmental, and social dimensions. This progress has been driven by collaboration between the Ministry of Education, Science, and Innovation and key stakeholders, including participation in initiatives such as events organised by the European Factories of the Future Research Association.[29] Through the Directorate-General for Economic Activities (DGAE), Portugal has contributed to the Mutual Learning Exercise (MLE) on Industrial Decarbonisation, including hosting a major event in Lisbon in November 2023 focused on the ERA Roadmap for Low-Carbon Technologies. The event addressed national strategies, investment alignment, and stakeholder engagement. In 2024, ANI launched a new mapping exercise of technology organisations and infrastructures, aligned with Action 12. Portugal's current network of interface institutions includes 41 Collaborative Laboratories (CoLABs)[30] and 31 Centres for Technology and Innovation (CTIs),[31] which strengthen the interface between research and industry, and foster industrial R&I capacities crucial for advancing the green and digital twin transitions. Other key initiatives under development include a National Strategy for Sustainable Development 2030 (RNDS 2030),[32] National Energy and

[27] Descarbonizar 2050 (n.d.). RNC2050. https://descarbonizar2050.apambiente.pt/en/roadmap
[28] Neyens, P. (2019, April 10). About | Circular Economy | about | one stop shop. Retrieved from https://ec.europa.eu/futurium/en/node/1960.html
[29] EFFRA. (n.d.). Retrieved from https://www.effra.eu
[30] Power BI Report. (n.d.). CoLAB network. Retrieved from: https://app.powerbi.com/view?r=eyJrIjoiYjE4MDc4ODQtM2RhNC00MzBkLWE0MDAtODkwMGJhYjM2YjJhIiwidCI6IjAzODM5NzBjLThlNjItNDdhOC05OTBlLTlhODE1MDZmNTZmMSIsImMiOjI9
[31] Power BI Report. (n.d.-b). CTI network Retrieved from: https://app.powerbi.com/view?r=eyJrIjoiZmY2OGM4NzUt-NjliOC00ZTE1LTg0ZDUtOGZjNTk5YmQ4MzBmIiwidCI6IjAzODM5NzBjLThlNjItNDdhOC05OT-BlLTlhODE1MDZmNTZmMSIsImMiOjI9
[32] Roteiro Nacional para o Desenvolvimento Sustentável 2030. (2024). Retrieved from https://ptsustentavel.gov.pt/roteiro-nacional-para-o-desenvolvimento-sustentavel-2030

Climate Plan 2030 (NECP 2030)[33], and a Roadmap for Carbon Neutrality 2050 (RNC 2050).[34]

ERA Action 13) Empower HEIs to develop in line with the ERA, and in synergy with the European Education Area

Portugal has made progress in strengthening its Higher Education Institutions, ensuring their alignment with ERA and EEA priorities. HEIs have been engaged in the European Universities Initiative since its launch under Erasmus+, and Portugal currently ranks among the top ten countries in terms of the number of institutions participating in these alliances.[35] This active engagement is contributing to the deeper integration of Portuguese HEIs into the broader European education and research ecosystem.

ERA Action 14) Bring Science closer to citizens

An example of initiatives bridging science and society in Portugal is the "National Science and Technology Week,"[36] most recently held in November 2024. Institutions such as FCT and Ciência Viva – National Agency for Scientific and Technological Culture[37] – play a key role in fostering public engagement. In the field of Citizen Science, where citizens contribute to the production of knowledge, several examples can be found in Portugal, including participation in EU-funded projects such as BioDiversity4All,[38] Plastic Pirates,[39] and D-NOSES,[40] as well as national initiatives like the Jellyfish Monitoring Programme,[41] Keepers of the Seagrass,[42] and Invasoras.pt.[43] While most initiatives are concentrated in the environmental and biodiversity areas, they are not limited to these fields.

ERA Priority 3: Enhancing access to research and innovation excellence across the Union and enhancing interconnections between innovation ecosystems across the Union

ERA Action 16) Improve EU-wide access to excellence

Portugal's actions under ERA Action 16 focus on enhancing access to research and innovation excellence by promoting individual networking, strengthening institutional cooperation, driving systemic reforms, and raising the global competitiveness of its R&I ecosystem. The country has increased participation levels in Horizon Europe and broadened the geographical distribution of beneficiaries. The "Widening" instruments of Horizon Europe have been particularly critical, serving as an entry point for individuals and institutions to boost their competitiveness

[33] Revisão do PNEC 2030. (n.d.). (report). *Plano Nacional Energia e Clima 2021-2030 (PNEC 2030)*. https://apambiente.pt/sites/default/files/_Clima/Planeamento/20241030_pnec2030_maen.pdf
[34] Governo de Portugal. (n.d.). Retrieved from: https://www.portugal.gov.pt/downloadficheiros/ficheiro.aspx?v=%3D%3DBAAAAB%2BLCAAAAAAABA-CzMDexBAC4h9DRBAAAAA%3D%3D
[35] Gogadze N., Cunha E., Aguiar J., Carvalho T. (2024). European University Alliances: A Case Study of Portugal, *INTED2024 Proceedings*, pp. 4537-4546. Retrieved from: https://library.iated.org/view/GOGADZE2024EUR
[36] A Semana da Ciência e Tecnologia 2024. (n.d.). Retrieved from https://www.cienciaviva.pt/semanact/2024/
[37] Ciência Viva (n.d.). Retrieved from https://www.cienciaviva.pt/sobre/a-ciencia-viva
[38] BioDiversity4All. (n.d.). Retrieved from https://www.biodiversity4all.org/
[39] Plastic Pirates – Go Europe! | Plastic Pirates. (n.d.). Retrieved from https://www.plastic-pirates.eu/pt-pt
[40] D-NOSES project. (n.d.) Retrieved from https://dnoses.eu/
[41] GelAvista - IPMA. (n.d.). Jellyfish Monitoring Programe in Portugal. Retrieved from https://gelavista.ipma.pt/
[42] Keepers of the seagrass meadows — OCEAN ALIVE. (n.d.). OCEAN ALIVE. https://www.ocean-alive.org/en/keepers-of-the-seagrass-meadows
[43] Invasoras.pt (n.d.). Plataforma de informação e ciência-cidadã sobre plantas invasoras em Portugal. Retrieved from https://invasoras.pt/en

across the three main pillars of the Framework Programme for R&I. FCT and ANI have actively worked to leverage synergies between national and European funding sources to support these objectives.

ERA Action 17) Enhance the strategic capacity of Europe's public research-performing organisations

Portugal has made efforts to recognise research management as a key element in its national R&I strategies. FCT and ANI, in collaboration with HEIs and other stakeholders, have organised initiatives to train research management staff, and Portuguese institutions have participated in European networks and in EU-funded projects for research management. At the national level, research managers and administrators have established an informal discussion platform ("Plataforma de Interface à Ciência - PIC),[44] aimed at strengthening the role of professionals and research interface areas that support the national scientific and technological system. These initiatives are contributing to the development of a distinct professional profile for research managers within the European research career framework and are helping to establish clearer career pathways in the field.

ERA Priority 4: Advancing concerted research and innovation investments and reforms

ERA Action 19) Establish an efficient and effective ERA monitoring mechanism

The Ministry of Education, Science and Innovation oversees, coordinates and monitors activities related to ERA. FCT and ANI ensure that ERA is incorporated into national R&I policies and initiate national actions on ERA priorities, collect and analyse data on the performance of research and innovation systems, and assess the integration of Portuguese R&I into the European landscape. However, the ability to effectively track progress and evaluate impact is limited by the absence of a national ERA action plan and limited capacity to meet ERA governance demands.

3. Contribution of ERA Actions to national performance in reaching ERA objectives

This chapter provides a qualitative assessment of how the joint ERA Actions contributed to Portugal's performance in achieving the ERA objectives as defined in the Pact for R&I during the period 2022-2024.

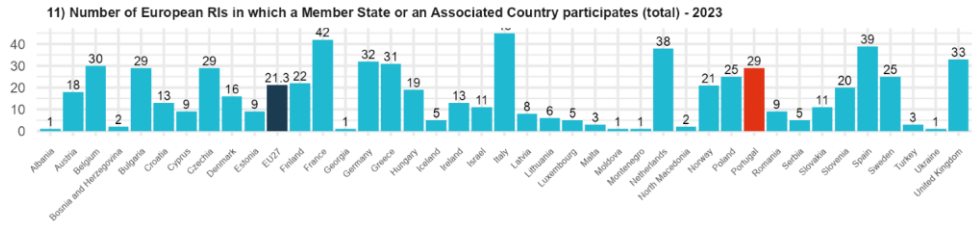
Under **ERA Priority 1**, Portugal has made generally positive progress, supported by targeted activities. The country has made moderate progress in **open science**. Portugal exceeds the EU27 average in the share of open-access publications (ERA Dashboard Indicator 6) and the number of open-access datasets (ERA Dashboard Indicator 7). The country's actions to promote **gender equality** show positive results, consistently outperforming the EU27 average, particularly in female authors of the most-cited publications (ERA Dashboard Indicator 14) and women among doctoral graduates in STEM fields (ERA Dashboard Indicator 16), both of which have shown increases since 2022. Despite being below the EU27 average in relation to **knowledge valorisation,** steady progress appears across nearly all related ERA Dashboard Indicators (ERA Dashboard Indicators 19, 21-24) where recent data is available. Portugal stands out as one of the top contributors to knowledge valorisation in 2023 (ERA

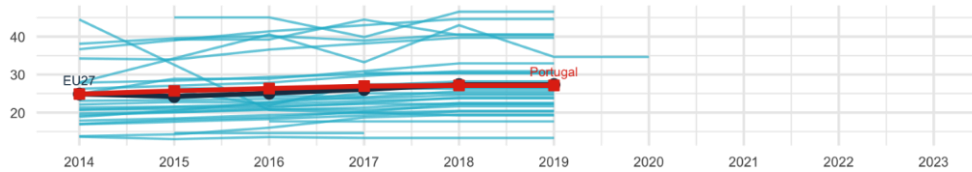
[44] PICPT. (n.d.). Retrieved from https://sites.google.com/view/PIC-pt

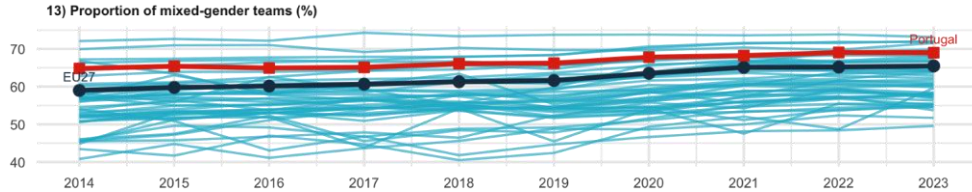
Dashboard Indicator 20). Participation in European **research infrastructures** (ERA Dashboard Indicators 10, 11) is above the average of both EU and associated countries.

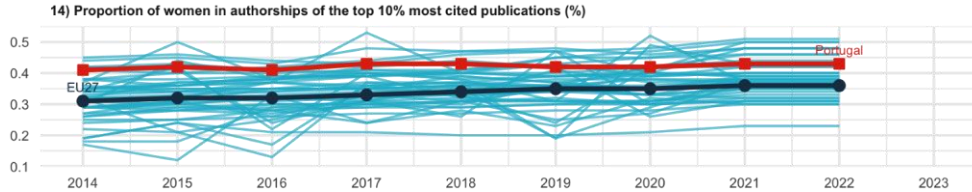
Portugal matches or surpasses the EU27 in the share of **foreign doctorate students** (ERA Dashboard Indicator 17), **new doctorate graduates** per 1,000 inhabitants aged 25-34 (ERA Dashboard Indicator 18), and **international co-publications** (ERA Dashboard Indicator 30). Additionally, the country exceeds the EU average in the **Academic Freedom Index** (ERA Dashboard Indicator 27) and the share **of patents with foreign co-inventors** (Indicator 31), although slight recent declines in these areas require attention to ensure continued progress. On the other hand, Portugal falls below the EU average and has shown declining performance in **top cited scientific publications** (ERA Dashboard Indicator 26), **ERC grants** received (ERA Dashboard Indicator 29), and **government budget allocations for R&D** (ERA Dashboard Indicator 33). This highlights challenges in sustaining strong research performance and funding. However, the modest reduction in GBARD indicates that R&D funding remains relatively stable. The country's performance in **patents by universities and public research organisations** (ERA Dashboard Indicator 25), **ranking of top universities** (ERA Dashboard Indicator 28), and **European and international co-patenting** (ERA Dashboard Indicator 32) remains below the EU27 average, despite gradual improvements in each area. These trends highlight the need to improve global academic standing, foster international collaboration, and strengthen patenting activities to drive innovation and competitiveness.

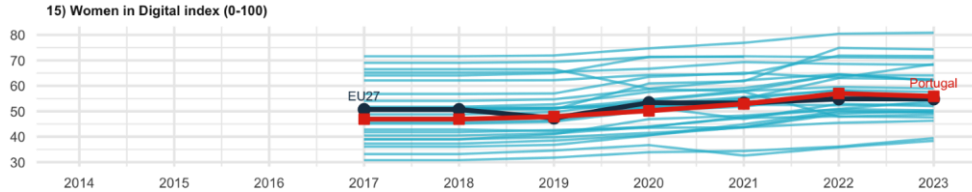
Figure 3-1 Indicators for ERA Priority 1

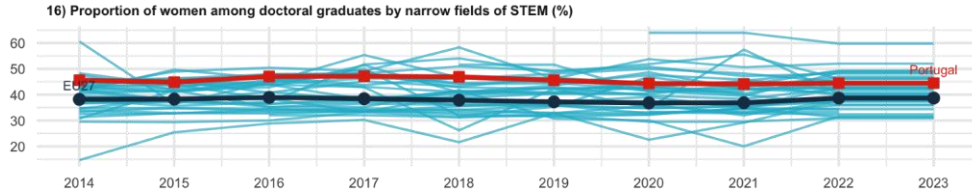

11) Number of European RIs in which a Member State or an Associated Country participates (total) - 2023
Albania
Austria
Belgium
Bosnia and Herzegovina
Bulgaria
Croatia
Cyprus
Czechia
Denmark
Estonia
EU27
Finland
France
Georgia
Germany
Greece
Hungary
Iceland
Ireland
Israel
Italy
Latvia
Lithuania
Luxembourg
Malta
Moldova
Montenegro
Netherlands
North Macedonia
Norway
Poland
Portugal
Romania
Serbia
Slovakia
Slovenia
Spain
Sweden
Turkey
Ukraine
United Kingdom

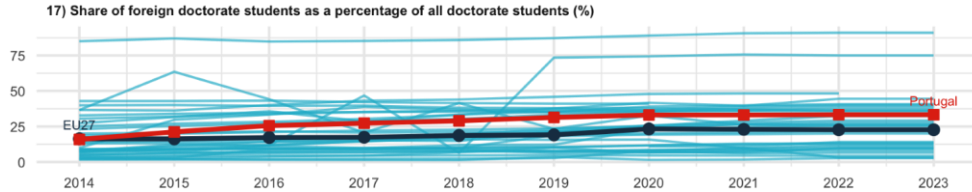

12) Proportion of women of Grade A among academic staff/researchers (%)
EU27
Portugal


13) Proportion of mixed-gender teams (%)
EU27
Portugal

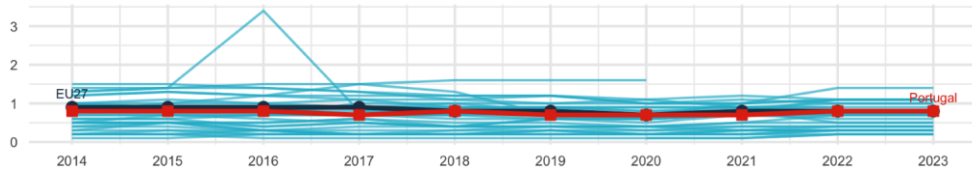

14) Proportion of women in authorships of the top 10% most cited publications (%)
EU27
Portugal


15) Women in Digital index (0-100)
EU27
Portugal

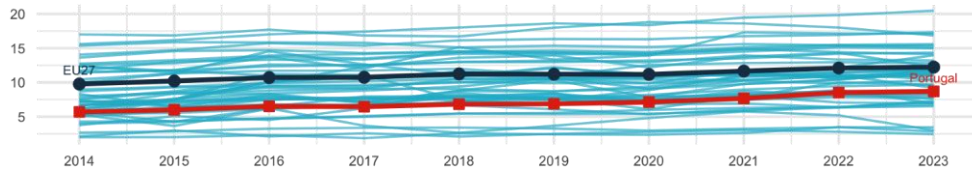

16) Proportion of women among doctoral graduates by narrow fields of STEM (%)
EU27
Portugal


17) Share of foreign doctorate students as a percentage of all doctorate students (%)
EU27
Portugal

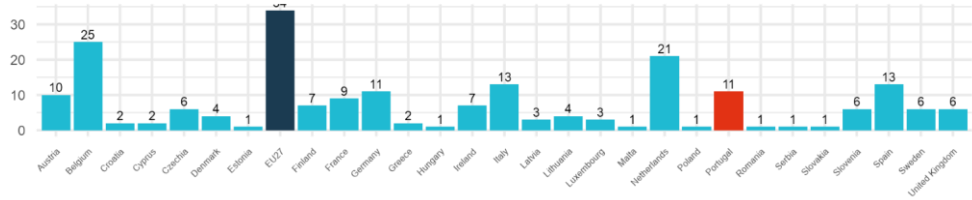
18) New doctorate graduates per 1,000 inhabitants aged 25-34



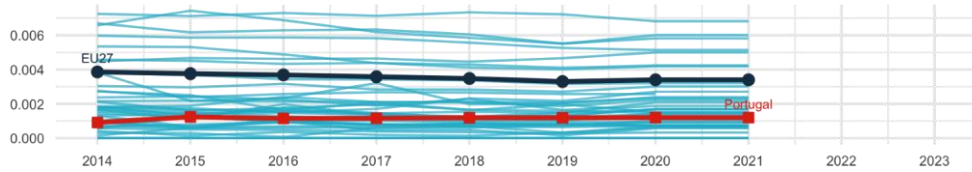
19) Share of public-private co-publications (%)



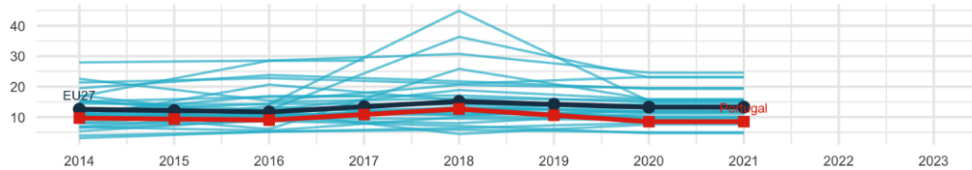
20) Best practice examples and methodologies for knowledge valorisation - 2023



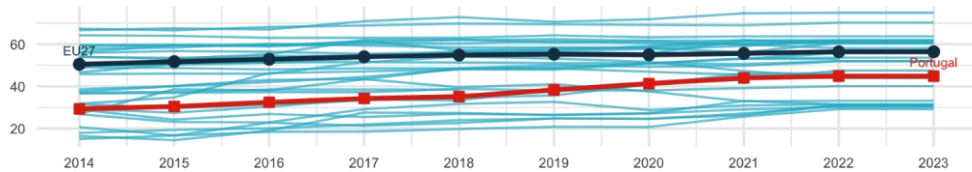
21) Number of PCT patent applications divided by GDP in million Euros/Dollars



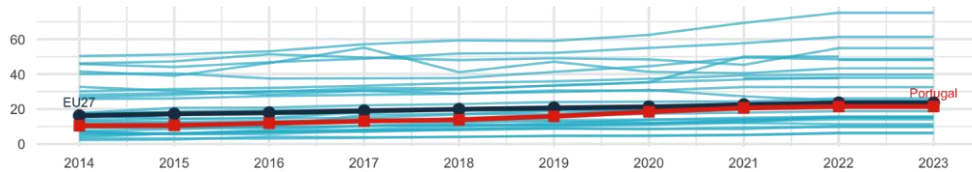
22) Share of innovating firms collaborating with HEI/PRO out of all innovative firms



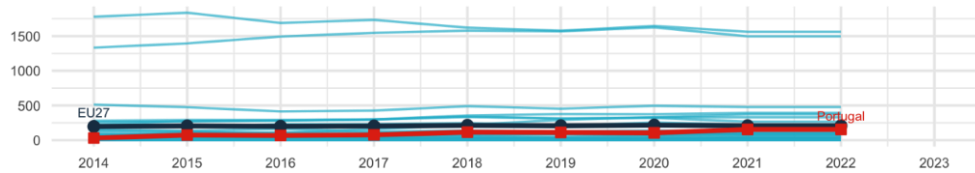
23) Business enterprise researchers as % of total researchers (%)



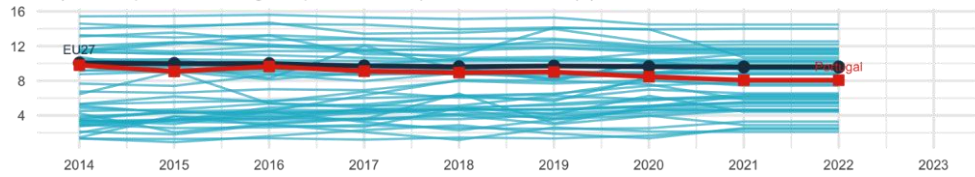
24) Business enterprise researchers in full-time equivalent per thousand employment in industry



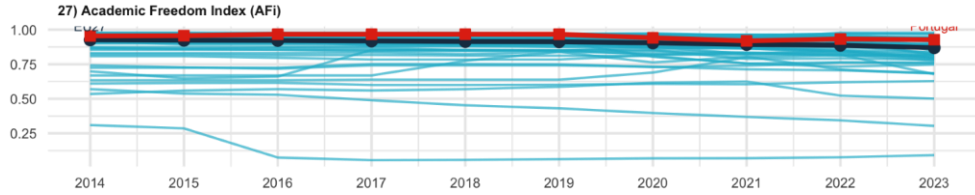
25) Patents by universities and public research organisations



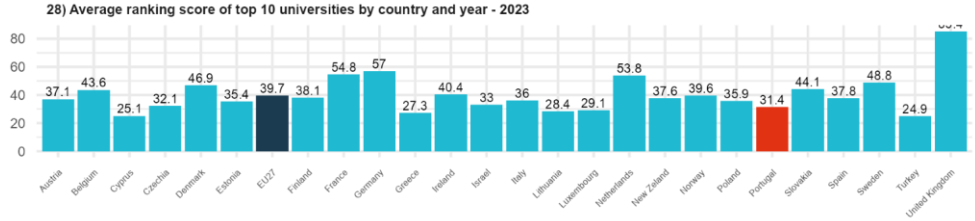
26) Scientific publications among the top-10% most cited publications worldwide (%)



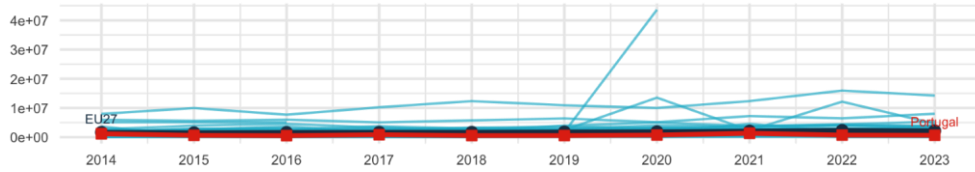
27) Academic Freedom Index (AFi)



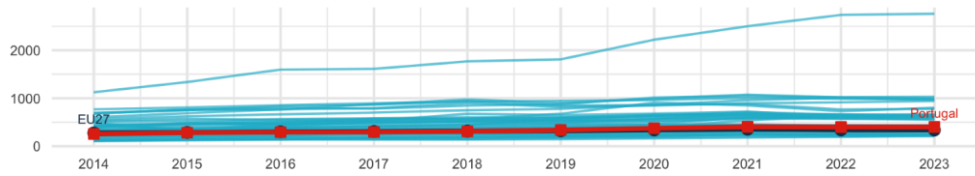
28) Average ranking score of top 10 universities by country and year - 2023



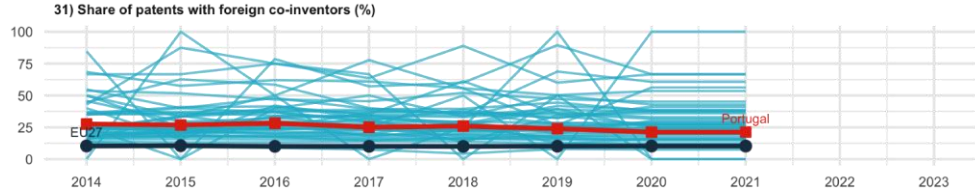
29) Sum of ERC grants received by country in a given year per 1,000 R&D personnel (in FTEs)

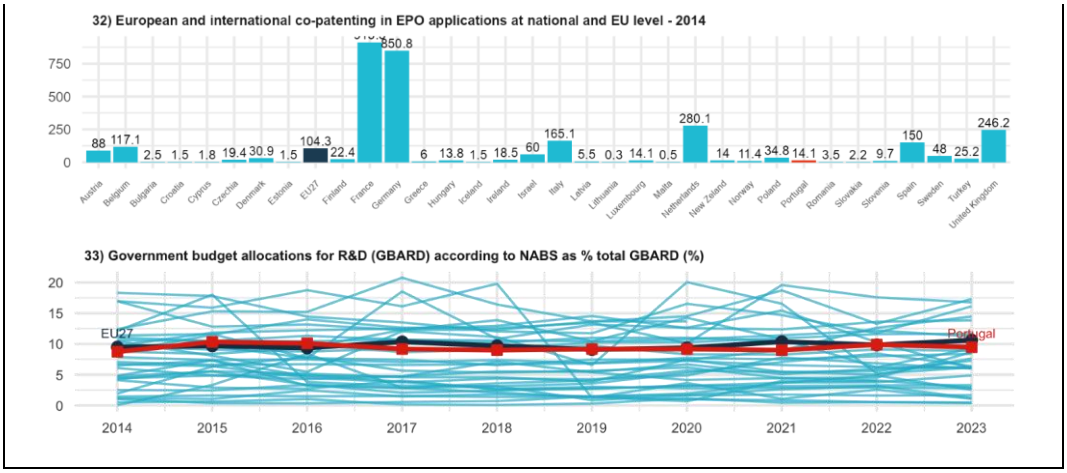


30) International co-publications with non-EU partners per 1,000 researchers in the public sector



31) Share of patents with foreign co-inventors (%)

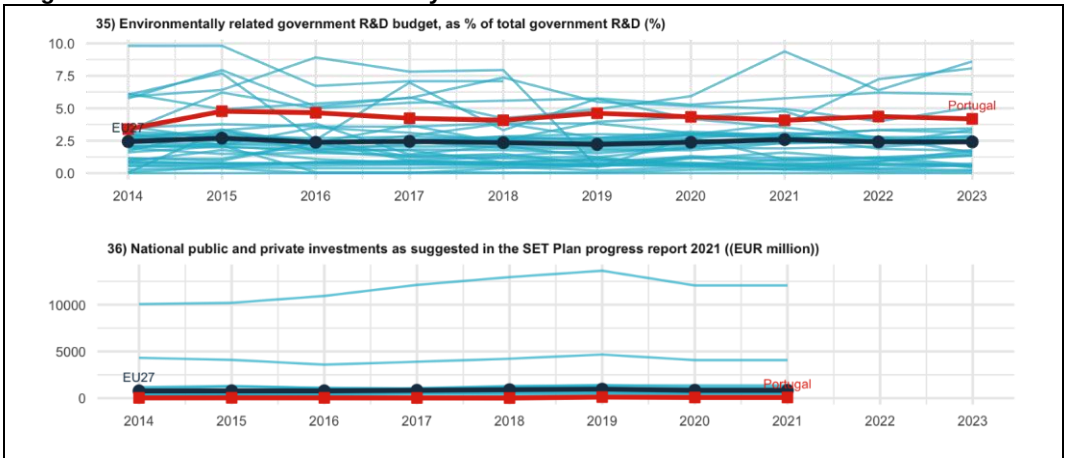


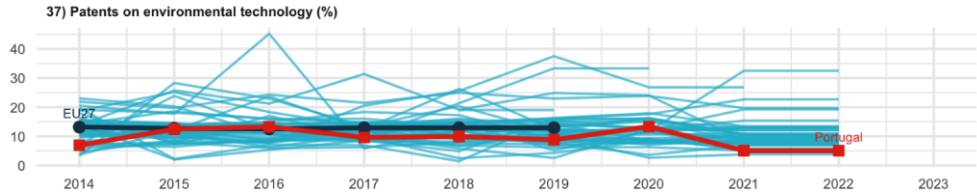


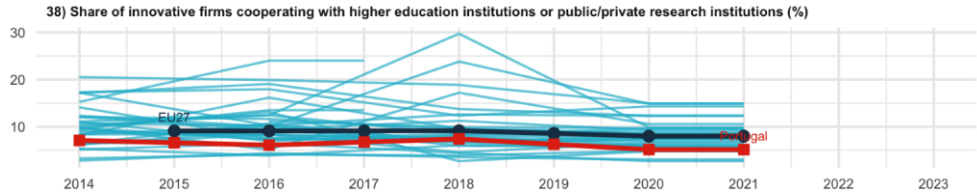
Source: Annex 1

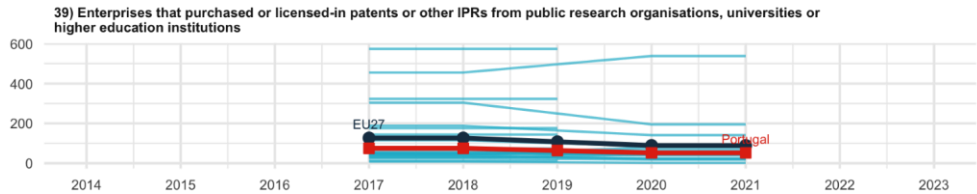
ERA Priority 2 is addressed through national initiatives that tackle the challenges of the twin green and digital transitions while enhancing societal participation in the ERA. In **challenge-based ERA actions**, Portugal performs overall below the EU-27 average, particularly in **patents on environmental technology** (ERA Dashboard Indicator 37) and the share of **innovative firms collaborating with HEIs and RPOs** (ERA Dashboard Indicator 38). The latter has shown an upward trend in recent years, unlike the first two, which have declined. Meanwhile, Portugal exceeds the EU average in the **environmentally related government R&D budget** (ERA Dashboard Indicator 35). Performance in **Strategic Energy Technology Plan investments** (ERA Dashboard Indicator 36) and **patent licensing** (ERA Dashboard Indicator 39) has been relatively modest, with investments falling short of targets and fewer patent transactions than the EU average. In terms of **synergies with sectoral and industrial policies to strengthen innovation ecosystems actions**, the country performs above average, despite a recent decline following years of growth in direct and indirect support (ERA Dashboard Indicator 40). Portugal remains slightly below average in green bond issuance (ERA Dashboard Indicator 41), with stable performance in recent years. In **citizen and societal engagement in R&I**, the country performs above the average (ERA Dashboard Indicator 42) and aligns with the Widening countries' average of the increase in total R&D expenditure (ERA Dashboard Indicator 43).

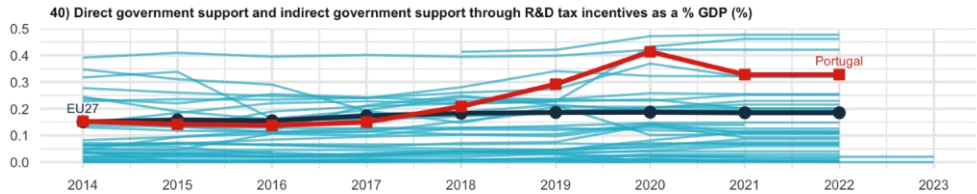
Figure 3-2 Indicators for ERA Priority 2

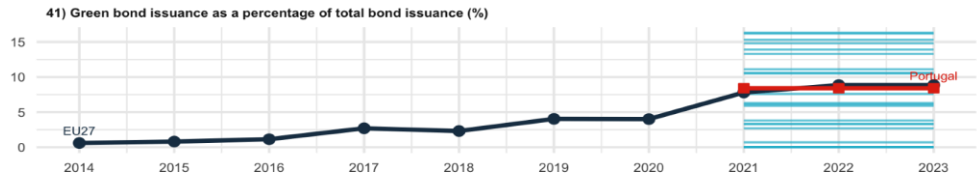


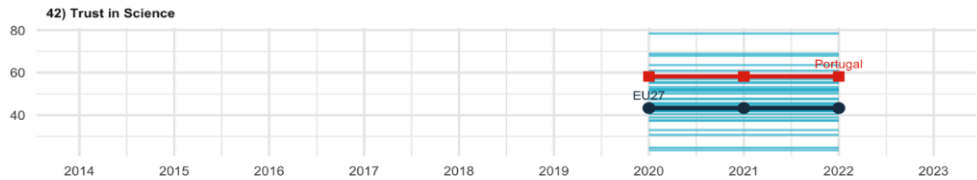


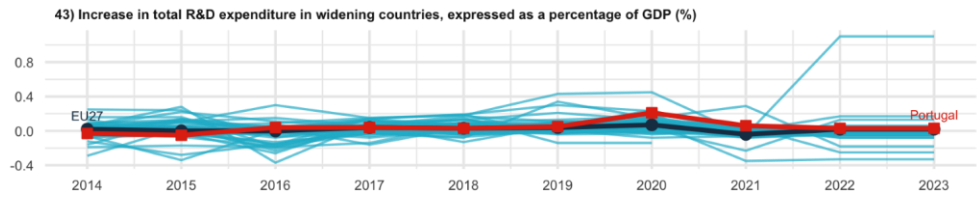












Source: Annex 1

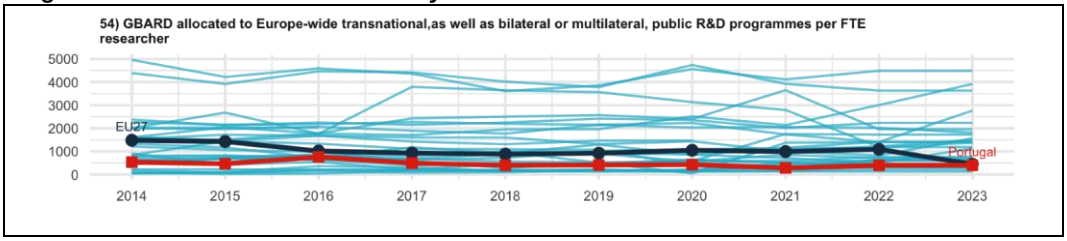
ERA Priority 3 aims to enhance access to research and innovation excellence across the European Union. On **investments and reforms in countries and regions with lower R&I performance**, Portugal performs approximately at the EU-27 average in Horizon Europe participations by Widening countries (ERA Dashboard Indicator 44) and the sum of Horizon grants received (ERA Dashboard Indicator 45), both of which grew in 2022 but declined in 2023. Portugal falls below the EU-27 average in the Summary Innovation Index for Widening countries (ERA Dashboard Indicator 46), but has improved since 2022. Seal of Excellence projects are slightly above the average, with a consistent growth since 2021 (ERA Dashboard Indicator 48). The performance in **Horizon programme partnerships with non-Widening countries** (ERA Dashboard Indicator 50) has remained stable, with a slight decline in recent years. The lack of data on EU averages makes a comparative assessment difficult. Portugal's share of public R&D expenditure financed by the private sector (ERA Dashboard Indicator 53) has seen a slight increase since 2021, but still remains below the EU average.

Figure 3-3 Indicators for ERA Priority 3

Source: Annex 1

Portugal's commitment to **ERA Priority 4** consists of Action 19 on implementing an effective ERA monitoring system for which there is no direct ERA Dashboard Indicator. In the ERA Dashboard Indicator 54, Portugal has historically performed below the EU-27 average. It reached near parity with the EU-27 in 2023, due to a drop of the EU average in the most recent data.

Figure 3-4 Indicators for ERA Priority 4



Source: Annex 1

4. Effects of ERA Action implementation on the national R&I system

This chapter provides a qualitative assessment of Portugal's ERA Action commitments and their effects on the national R&I system. The analysis takes into account activities undertaken during the reporting period, as well as ERA Dashboard Indicators with available data for the 2022-2024 period.

ERA Priority 1 aligns with key strategic frameworks like **Portugal 2030**, particularly its 'Compete – Innovation and Digital Transition programme'. *Compete* funds research and innovation, knowledge dissemination, and cutting-edge infrastructures. It also promotes global collaboration, knowledge transfer, gender equality, and open access to scientific knowledge. Similarly, Portugal's **Recovery and Resilience Programme (PRR)** supports reforms to modernise research institutions, infrastructures, and data management systems essential for open science. It also fosters inclusivity in education and research, funds skills development and international exchanges to create a qualified R&I workforce and backs digital and green transformations. Following the national actions implement in relation ERA Priority 1, Portugal has shown generally positive progress through targeted initiatives promoting knowledge valorisation, researcher careers, gender equality, research infrastructures, and global collaboration. However, some results vary, with some indicators showing more positive outcomes and others reflecting less favourable trends (e.g. high-impact publications, ERC grant acquisition, and government R&D funding).

ERA Priority 2, which mainly addresses the green and digital transitions, aligns with the **PRR**'s focus on the climate transition (including renewable energy, energy efficiency, sustainable transport, circular economy, sustainable bioeconomy, hydrogen and renewable gases) and digital transformations (e.g. digital infrastructure, digital skills, digitalisation of sectors like education, healthcare, industry). It also relates with **Portugal 2030**, particularly the Compete - Innovation and Digital Transition programme, which supports the green transition through its "Objective 2 – Portugal + Green" that focuses on innovation in decarbonising businesses, energy efficiency and renewable energy. Additionally, it supports the digital transition via its "Specific Objective 1.2 – Digitalisation for Businesses". Under ERA Priority 2, Portugal demonstrates mixed performance. While it performs below the EU27 average in patents on environmental technology, collaboration between innovative firms and research institutions, and transnational R&D funding, there has been recent growth in the latter. The country exceeds the EU27 average in the environmentally related government R&D budget and Trust in Science, and it performs well in synergies with sectoral policies, despite slight recent declines in some areas.

ERA Priority 3, which focuses on expanding access to research and innovation excellence across the EU, can potentially create synergies with Portugal's goal of better integrating its R&I system into the ERA. This is reflected in **Portugal 2030**, particularly through the Compete

- Innovation and Digital Transition programme, which encourages collaboration between research institutions and businesses to drive innovation, supports cross-border cooperation to connect national stakeholders with European research networks, and optimises the use of national and European R&I funding. Similarly, the **PRR** focuses on leveraging R&I to drive economic recovery, foster European collaboration in key areas such as green and digital transitions, healthcare, and infrastructure, and fund strategic R&I investments to build a resilient economy. Under ERA Priority 3, Portugal performs around the EU27 average in Horizon Europe participations by Widening countries and the sum of Horizon grants received. While the country has improved in the Summary Innovation Index for Widening countries and Seal of Excellence projects, it lags in the share of enterprises using public R&I funds and collaborative indicators like patents and partnerships with research-performing organisations.

ERA Priority 4, which focuses on advancing coordinated research and innovation investments and reforms, has the potential when fully implemented to align with the strategic frameworks of **Portugal 2030** and the **PRR**, as these two programmes aim to enhance R&I governance, reforms and strategic investments. Currently, only ERA Action 19 is being implemented under this priority regarding the establishment of the ERA monitoring mechanism. Action 19 can also be interconnected with the aforementioned national strategic programmes (i.e., Portugal 2030 and PRR), as they support the development of evidence-based decision-making frameworks and the enhancement of accountability in research and innovation activities. However, the absence of a dedicated national action plan for the ERA poses considerable challenges in tracking the effect of Portugal's implementation of ERA actions.

5. Conclusions

Portugal has made consistent progress in **ERA Priority 1**, particularly in open science, knowledge valorisation and gender equality, often matching or exceeding the EU27 average in key indicators. The country stands out in open-access publications, research datasets, and gender-related metrics, while also improving in public-private collaborations and patent applications, despite remaining below the EU average in some areas. Portugal performs well in European research infrastructure participation and researcher mobility but faces challenges in high-impact publications, ERC grants, and government R&D funding, which have shown declines. Actions to strengthen Portugal’s global research and innovation competitiveness remain necessary.

The country has made mixed progress in **ERA Priority 2**, performing below the EU27 average in challenge-based ERA actions to address major societal challenges, namely in environmental technology patents, innovation collaboration, and transnational R&D funding, though the latter has improved. While investments in the SET Plan and patent licensing remain modest, the country exceeds the EU average in the environmentally related government R&D budget, despite a slight decline. Portugal has also shown significant performance in innovation ecosystem support, though green bond issuance remains slightly below the EU average. Additionally, the country performs well in trust in science and aligns with Widening countries in R&D expenditure growth, reflecting positive societal engagement in research and innovation.

Portugal performs around the EU27 average in key indicators of **ERA Priority 3**, particularly in Horizon Europe participation and funding. The country performs well in leveraging synergies between EU and national funding, with an increase in Seal of Excellence projects. While private sector contributions to public R&D have slightly increased, patenting with EU partners and cross-border innovation cooperation have declined, highlighting the need for stronger integration into European R&I networks.

Under **ERA Priority 4**, Portugal is currently engaged in “Action 19: Establish an effective ERA monitoring system”. The country has demonstrated significant alignment between its

strategic R&I investments under national frameworks like Portugal 2030 and the PRR, and the broader ERA priorities. The lack of a specific national action plan for the ERA makes it challenging to effectively track Portugal's alignment with ERA objectives. This gap hampers the monitoring and assessment of the effectiveness of national policies in achieving ERA goals.

In conclusion, Portugal has made steady progress across several ERA priorities, demonstrating good overall alignment with the ERA Policy Agenda. However, important challenges persist across various research and innovation domains, with performance in some areas still lagging behind the EU average. Addressing these challenges will be crucial to strengthening Portugal’s global R&I competitiveness and narrowing the gap with the EU.

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Annex 1 – Full list of ERA Dashboard Indicators

The indicators used in the report are taken from the ERA Dashboard 2024. The full ERA Dashboard Report and the supporting Data Replication Package can be downloaded at https://european-research-area.ec.europa.eu/era-monitoring-reports. However, *GDP (in million €)*, *Size of the population (million)*, and *Share of female researchers, all sectors of performance (%)* were added to provide additional context and directly retrieved from the Eurostat website.

Additionally, EU and country averages are for 2023, except *Share of female researchers, all sectors of performance (%)* (2021).

Table 1 Structural Key Indicators:

Indicator number	Indicator	Source
/	GDP in euro per capita, current prices	Eurostat https://doi.org/10.2908/TEC00001
1	Gross Domestic Expenditure on R&D (GERD) as a share of GDP	Eurostat
2	Government Budget Allocations for R&D (GBARD) as share of GDP	Eurostat
4	Business Enterprise Expenditure on R&D (BERD) as a share of GDP	Eurostat
5.2	Expenditure on R&D procurement as a percentage of GDP	EC/European Innovation Procurement Observatory
/	Size of the population (million)	Eurostat, https://doi.org/10.2908/TPS00001
3	Researchers (in FTE) per million inhabitants	Eurostat
/	Share of female researchers, all sectors of performance (%)	Eurostat, https://doi.org/10.2908/TSC00005

Figure 3.1 Indicators for ERA Priority 1

Indicator number	Indicator	Source
6	Share of publications available in open access (green, gold, and diamond)	OpenAIRE
7	Number of open-access research datasets by country	OpenAIRE
8	Number of repositories by country	EOSC - Re3data
9	Country investments in EOSC and Open Science (in ranges of investment)	EOSC Observatory
10	Share of national public R&D expenditure committed to European research infrastructures	ESFRI
11	Number of European RIs in which a Member State or an Associated Country participates	ESFRI
12	Proportion of women of Grade A among academic staff/researchers	Women in Science - She Figures
13	(Corrected) Proportion of mixed-gender teams	EC_Scopus
14	(Corrected) Proportion of women in authorships of the top 10% most cited publications	EC_Scopus
15	Women in Digital index (0-100)	EC-Women in Digital Scoreboard

16	Proportion of women among doctoral graduates by narrow fields of STEM	Eurostat
17	Share of foreign doctorate students as a percentage of all doctorate students	Eurostat
18	New doctorate graduates per 1,000 inhabitants aged 25-34	Eurostat
19	Share of public-private co-publications	EC_Scopus
20	(Cumulative number of) Best practice examples and methodologies for knowledge valorisation	Knowledge Valorisation Platform
21	Number of PCT patent applications divided by GDP in million Euros/Dollars	OECD, Eurostat & World Bank
22	Share of innovating firms collaborating with HEI/PRO out of all innovative firms	Eurostat CIS (own calculations)
23	Business enterprise researchers as % of total researchers	OECD
24	Business enterprise researchers in full-time equivalent per thousand employment in industry	OECD
25	Patents by universities and public research organisations	EPO PATSTAT - Fraunhofer ISI calculations
26	% of scientific publications among the top-10% most cited publications worldwide	EC_Scopus
27	Academic Freedom Index (AFi)	V-Dem Varieties of Democracy
28	Average ranking score of top 10 universities by country and year	QS World University Ranking
29	Sum of ERC grants received by country in a given year per 1,000 R&D personnel (in FTEs)	EC-ERC
30	International co-publications with non-EU partners per 1,000 researchers in the public sector	EC_ScienceMetrix and Eurostat/OECD
31	Share of patents with foreign co-inventors	OECD
32	European and international co-patenting in EPO applications at national and EU level	Eurostat
33	Government budget allocations for R&D (GBARD) according to NABS as % total GBARD	Eurostat

Figure 3.2 Indicators for ERA Priority 2

Indicator number	Indicator	Source
34	Note: The ERA Dashboard Indicator 34 was removed from the Dashboard in January 2025. As a consequence, the indicator has also been omitted from the Country Report, while, however, keeping the original numbering of the indicators.	
35	Environmentally related government R&D budget, as % of total government R&D	Eurostat
36	National public and private investments as suggested in the SET Plan progress report 2021 (EUR million)	SETIS R&I data
37	% Patents on environmental technology	OECD
38	Share of innovative firms cooperating with higher education institutions or public/private research institutions	Eurostat CIS
39	Enterprises that purchased or licensed-in patents or other IPRs from public research organisations, universities or higher education institutions	Eurostat CIS

40	Direct government support and indirect government support through R&D tax incentives as a % GDP	OECD
41	Green bond issuance as a percentage of total bond issuance	Eurostat - EEA
42	Trust in Science	Eurobarometer 95.2
43	Increase in total R&D expenditure in widening countries, expressed as a percentage of GDP	Eurostat, OECD, UNESCO

Figure 3.3 Indicators for ERA Priority 3

Indicator number	Indicator	Source
44	*Number of participations in Horizon Europe (of Widening countries) measured in terms of 1,000 R&D personnel (in FTEs)*	Cordis - Eurostat
45	*Sum of Horizon Europe grants (€) received by Widening countries in terms of 1,000 R&D personnel (in FTEs)*	Cordis - Eurostat
46	*Summary Innovation Index (Widening countries)*	EC_EIS
47	*Share of enterprises using public funds from different governance levels (local or regional, national, and EU) for R&I activities*	Eurostat CIS
48	*Number of Seal of Excellence projects on the InvestEU Portal per 1,000 R&D personnel (in FTEs)*	EC - Invest EU
49	*Number of collaboration networks of RPOs in Widening countries with other EU countries*	Cordis - Horizon Dashboard
50	*Average number of partners from non-widening countries per institution from a Widening country participating in the Horizon programme each year*	Cordis - Eurostat
51	*Share of patents registered by a Widening country together with partners from other EU countries*	OECD
52	*Share of innovative enterprises that cooperated with RPOs located in other countries*	Eurostat CIS
53	*Share of public R&D expenditures financed by the private sector*	Eurostat

Figure 3.4 Indicators for ERA Priority 4

Indicator number	Indicator	Source
54	*GBARD allocated to Europe-wide transnational, as well as bilateral or multilateral, public R&D programmes per FTE researcher*	Eurostat

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