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Commission

ERA Country Report 2024

Poland

Independent
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Report

Research and
Innovation

ERA Country Report 2024: Poland

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ERA Country Report 2024

Poland

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Key takeaways

- Poland has committed to 11 out of 20 ERA Actions, covering three out of the four Priority Areas. According to the 2024 European Innovation Scoreboard, Poland is categorised as an "Emerging Innovator", achieving an innovation performance level equivalent to 65.9% of the EU average.
- As there is no dedicated national ERA Action Plan, the ERA objectives are pursued through national R&I strategies, such as the State Scientific Policy. An anticipated update to the State Scientific Policy in 2025 is expected to strengthen alignment with ERA goals.
- While the implementation of ERA Actions in 2024 has been slightly impacted by the parliamentary elections in October 2023, Poland's EU Presidency of the Council during the first half of 2025 has reinvigorated efforts, with a focus on integrating ERA objectives more comprehensively into national strategies. In particular, Actions 8 (research infrastructures) and 16 (research excellence) are supported by the revised policies in Poland.
- The current administration is prioritising a more proactive stance, which it refers to as a "new opening" in ERA implementation and engagement with European partners. This signals a turning point in Poland's trajectory within the European R&I ecosystem.

1. National context

According to the 2024 European Innovation Scoreboard, Poland is categorised as an *Emerging Innovator*, achieving an innovation performance level equivalent to 65.9 percent of the EU average.¹ Notably, Poland exceeds the EU average in terms of female representation among researchers, with women comprising approximately 37.36 percent of the research workforce (see Table 1).

The development and implementation of R&I policies in Poland are primarily managed by the **Ministry of Science and Higher Education** and the **Ministry of Funds and Regional Policy**. Other important institutions include the **National Centre for Research and Development (NCBiR)**² and the **National Science Centre (NCN)**³, which provides research funding. Poland's 91 research institutes, represented by the **Main Council of Research Institutes**, also contribute substantially to shaping the country's R&I landscape.⁴

Table 1 Structural Key Indicators

Indicator	EU27	Poland		
	2023	2023	Average 2018-2020	Average 2021-2023
GDP (in million €) in current prices, euro per capita	35 790.00	17 350.00	12 993.33	15 390.00
Gross Domestic Expenditure on R&D (GERD) as a share of GDP	2.27	1.45	1.31	1.44
Government Budget Allocations for R&D (GBARD) as share of GDP	0.73	0.46	0.39	0.45
Business Enterprise expenditure on R&D (BERD) as a share of GDP	1.52	0.96	0.83	0.94
Expenditure on R&D procurement as a percentage of GDP	0.06	0.04	/	0.04
Size of the population (million)	448.80	36.75	37.97	36.91
Researchers (in FTE) per million inhabitants	4 681.34	3 828.78	3 188.29	3 772.17
Share of female researchers, all sectors of performance (%)	33.71	/	37.36	/

Source: see Annex 1

2. Status of the Implementation of the ERA Policy Agenda

Poland has committed to 11 out of 20 ERA Actions, covering three out of the four Priority Areas (see Table 2). There is no single national plan or strategy dedicated to the implementation of the ERA Policy Agenda in Poland. Instead, the ERA actions are implemented through a range of national policies and initiatives. Poland's main strategy for research and innovation (R&I) is the **State Scientific Policy (2022)**⁵. Complementary strategies include

¹ European Commission, Directorate-General for Research and Innovation (2024), European Innovation Scoreboard 2024 –Poland. <https://projects.research-and-innovation.ec.europa.eu/en/statistics/performance-indicators/european-innovation-scoreboard/eis-2024#/eis/countries/PL>

² NCBiR. <https://www.gov.pl/web/ncbr-en>

³ NCN. <https://www.ncn.gov.pl/en>

⁴ Main Council of Research Institutes, <https://www.rqib.org.pl/index.php/o-rqib/o-rqib>.

⁵ Ministry of Education and Science (2022), State Scientific Policy, <https://www.gov.pl/web/edukacja-in-auka/polityka-naukowa-panstwa-przyjeta-przez-rade-ministrow>

the **Productivity Strategy 2030**⁶, **Polish Hydrogen Strategy (2021-2030)**⁷, and **AI Development Policy (2020)**⁸. Another relevant planned strategy is **Polityka Otwartego Dostępu (Open Access Policy)**. This policy now after interministerial consultations and the final version is currently being prepared for publication on the website of the Ministry of Science and Higher Education⁹. Focus areas of the national ERA implementation are open science, research infrastructures, and green and digital transition.

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)

Chapter 2 briefly summarises **new developments in Poland since the publication of the ERA Country Report 2023**. It should be noted that the implementation of ERA Actions in Poland has faced significant challenges, primarily due to disruptions caused by the aftermath of the parliamentary elections in October 2023.

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 EOSC The National Science Center remains committed to its open access policies, continuing efforts to engage various stakeholders in advancing open science initiatives. Such efforts include hosting the 4th Scientific Conference of the BazTech Consortium¹⁰ and the Polish Open Science Conference¹¹, which focused on various aspects of Open Science, including data management, repositories, Open Access, and the European Open Science Cloud (EOSC) initiative. It brought together researchers, librarians, data stewards, infrastructure creators and

⁶ Ministry of Economic Development and Technology (2022), The Productivity Strategy 2030, available at <https://www.gov.pl/web/rozwoj-technologie/strategia-produktywnosci-2031>

⁷ Ministry of Climate and Environment (2021). Polish Hydrogen Strategy ('Polska strategia wodorowa'), available at <https://www.gov.pl/web/klimat/polska-strategia-wodorowa-do-roku-2030>

⁸ Council of Ministries of Poland (2020), Policy of Artificial Intelligence Development on Poland ('Polityka rozwoju AI w Polsce'), available at <https://www.gov.pl/web/govtech/polityka-rozwoju-ai-w-polsce-przyjeta-przez-rade-ministrow-co-dale>

⁹ Ministry of Science and Higher Education, 2024-04-16

¹⁰ Ministry of Science and Higher Education (September 2024)Przyszłość bibliograficznych baz danych – konferencja naukowa z udziałem wiceminister Marii Mrówczyńskiej. Available at: <https://www.gov.pl/web/nauka/przyszlosc-bibliograficznych-baz-danych---konferencja-naukowa-z-udzialem-wiceminister-marii-mrowczynskiej>.

¹¹ EOSC "Polish Open Science Conference 2024". Available at: <https://eosc.eu/events/polish-open-science-conference-2024/#:~:text=The%20Polish%20Open%20Science%20Conference,development%20of%20initiatives%20related%20to>.

publishers to discuss trends, challenges and advancements in Open Science globally and in Poland.¹²

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

Following the 2022 evaluations on the quality of scientific activity in 283 Polish entities for 2017-2021¹³, the Polish Academy of Sciences (PAN) introduced a set of proposals to reform the research assessment system. The reform of PAN is still ongoing, and the draft act for reforming the PAN is expected to enter into force in the second part of 2025.

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

The National Agency for Academic Exchange (NAWA) has initiated joint research projects scheduled for 2024 with France, Germany, and Italy. Additionally, collaborative projects and funding opportunities have been announced for 2025 with France, Germany, Austria, and Slovakia.¹⁴ Similarly, the NCN has been actively participating in EU-wide initiatives, including the Weave-UNISONO call for bilateral or trilateral project funding.¹⁵ Poland has also inaugurated the second edition of the Polish-Swiss Cooperation Programme.¹⁶ Finally, the Ministry of Science and Higher Education has announced a new cooperation agreement with Bulgaria.¹⁷ Since 2018, NAWA has been supporting scientific institutions in Poland which establish welcome centres for international researchers through the Welcome to Poland programme. In 2025, NAWA launched the NAWA-EURAXESS Network programme aimed at building 16 regional cooperation networks composed of scientific institutions, public administration bodies and other stakeholder organisations to develop a favourable environment for scientists in Poland. The regional NAWA-EURAXESS network will strengthen the capacities and know-how among Polish universities and research entities that host and support foreign researchers and PhD students.¹⁸

¹² See: <https://bg.agh.edu.pl/wydarzenia/detail/s/polska-konferencja-open-science-2024>

¹³ Ministry of Science and Higher Education. Evaluation of the quality of scientific activity. Available at: <https://www.gov.pl/web/science/evaluation-of-the-quality-of-scientific-activity>.

¹⁴ Polish National Agency for Academic Exchange. Joint research projects. Available at: <https://nawa.gov.pl/en/international-cooperation-and-exchange/joint-research-projects>.

¹⁵ National Science Centre (October 2024) Announcement of the multilateral Weave-UNISONO call launched within the framework of the Weave Programme in accordance with the Lead Agency Procedure. Available at: <https://www.ncn.gov.pl/en/ogloszenia/konkursy/weave-unisono>.

¹⁶ Website of the Republic of Poland. The National Centre for Research and Development. Available at: <https://www.gov.pl/web/ncbr-en/sppw-call-2024research-and-innovation-programme-applied-researchthe-swiss-polish-cooperation-programme#:~:text=The%20Swiss%2DPolish%20Cooperation%20Programme%2C%20Research%20and%20Innovation%20Programme%2C,through%20research%2Dbased%20knowledge%20development>.

¹⁷ Website of the Republic of Poland. (June 2024) Nowy program współpracy z Bułgarią. Available at: <https://www.gov.pl/web/nauka/nowy-program-wspolpracy-z-bulgaria>.

¹⁸ A new Migration Strategy 2025-2030 has been adopted by the Government in 2025. When talking about international researchers, it lays down that a system of visas will be introduced for scholars recruited to implement grants awarded by prestigious grant agencies such as the National Science Centre or the European Research Council. This fast track will also be available to international scientists recruited by Polish higher education entities, which have the highest evaluation quality status (A+) and require a highly-skilled academic and research workforce. However, specific implementation rules for the Strategy need to be developed by the Ministry of Interior and Administration, and their impact cannot be evaluated yet.

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

Poland has undertaken initiatives connected to ERA Action 5, such as a nationwide monitoring survey of the implementation of Gender Equality Plans (GEP) in the Polish HEIs. Poland has supported making GEP a requirement in Horizon Europe and beyond, including their monitoring, evaluation, and the integration of an intersectional perspective, as outlined in its Position Paper on the 10th Framework Programme¹⁹. The Ministry of Science and Higher Education, alongside the National Information Processing Institute, are partners in the GENDER-ACTIONplus HE project, which supports aligning gender equality and inclusiveness goals within the new European Research Area. In March 2025, the Minister of Science and Higher Education announced the establishment of the Council for Women in Higher Education and Science. This newly established advisory body aims to advance gender equality in academia by assessing the status of women in science and recommending measures to improve their working conditions and career development²⁰. In addition, the CHANSE Project, implemented by the NCN for the period 2021-2026, aligns with the action objectives by actively promoting diversity across multiple dimensions, including gender, geographical representation, and academic age balance. The initiative aims to support international projects in the social sciences and humanities, fostering inclusivity and collaboration in these disciplines.²¹

ERA Action 7) Upgrade EU guidance for better knowledge valorisation

The Łukasiewicz Research Network has been a primary platform for knowledge valorisation in Poland. Additionally, the NCBiR has introduced two initiatives under the European Funds for Social Development 2021-2027 to advance academic programmes and improve education in critical sectors.²² Moreover, Polish researchers' participation in projects funded by the European Defence Fund, European Space Agency and Horizon Europe further strengthens the partnership between academia and industry.

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

Within the European Funds for Social Development, the NCBiR introduced the "Accessible University" competition. This initiative aims to implement principles of equal opportunities, focusing on both infrastructural improvements and the organisation of education.²³ The centre also allocated PLN 445 million from the European Funds for Modern Economy for innovative solutions to reinforce accessibility by large enterprises.²⁴ Furthermore, the Ministry of Science and Higher Education opened a continuous call for applications to the ministerial programme "Support for participation of Polish scientific teams in international research infrastructures projects", under which ca. EUR 25 million was spent in 2024. It enables funding for a broad range of activities that constitute Poland's financial or in-kind contributions to the construction,

¹⁹ <https://www.gov.pl/web/nauka/stanowisko-ministra-nauki-wobec-10-programu-ramowego>

²⁰ Ministry of Science and Higher Education, 2024-04-16

²¹ STIP COMPASS (April 2023) CHANSE. Available at: <https://stip.oecd.org/stip/interactive-dashboards/policy-initiatives/2023%2Fdata%2Fpolicy/Initiatives%2F99993710>.

²² Website of the Republic of Poland. (July 2024) W resorcie nauki dyskutowano na temat współpracy nauki i biznesu. Available at: <https://www.gov.pl/web/nauka/w-resorcie-nauki-dyskutowano-na-temat-wspolpracy-nauki-i-biznesu>.

²³ Website of the Republic of Poland. (April 2024) W trosce o zwiększenie dostępności osobom niepełnosprawnym. Available at: <https://www.gov.pl/web/nauka/w-trosce-o-zwiekszenie-dostepnosci-osobom-niepelnosprawnym>.

²⁴ Website of the Republic of Poland. (September 2024) Biznes wykaże się na polu dostępności. Konkurs NCBR. Available at: <https://www.gov.pl/web/ncbr/biznes-wykaze-sie-na-polu-dostepnosci-konkurs-ncbr>.

upgrade, or operation of research infrastructures. The goal is to support all actions required to meet Poland's commitments as a member of international research infrastructure projects²⁵.

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 Generally, as of August 2024, Polish institutions have been awarded nearly EUR 638 million under Horizon Europe to implement 1,227 projects. This represents a 140 percent increase in funding and a 45 percent rise in the number of projects compared to Horizon 2020, highlighting significant progress in Poland's participation in European research and innovation programmes.²⁶

ERA Action 11) An ERA for green transformation The NCBiR has announced plans to allocate PLN 400 million²⁷ to support projects in offshore and onshore wind energy under the third competition of the Strategic Research and Development Programme.²⁸ Additionally, the Centre has launched two projects focused on decarbonising Polish heating systems, funded through European Funds under the Smart Growth.²⁹ The centre has also announced the KPO GOZ competition, aimed at supporting enterprises in transitioning to a Circular Economy by utilising waste as secondary raw materials.³⁰ Similarly, the third edition of the Government Strategic Programme Hydrostrateg has been launched, focusing on innovative solutions for water use and management in Poland.³¹ Finally, the centre announced the *Innovative Bigoas Plant* project in 2020, also contributing to the green value of biomethane, along with the consultation process for the Programme for the agri-food sector in 2024.³²

²⁵ Ministry of Science and Higher Education, 2024-04-16

²⁶ Website of the Republic of Poland (September 2024) Horyzont Europa vs. Horyzont 2020: wzrost wartości finansowania o 140%. Available at: <https://www.gov.pl/web/ncbr/horyzont-europa-vs-horyzont-2020-wzrost-wartosci-finansowania-o-140>.

²⁷ –EUR 93.6 million

²⁸ Website of the Republic of Poland. (August 2024) NCBR ogłosiło III konkurs w ramach Strategicznego Programu Badań Naukowych i Prac Rozwojowych „Nowe Technologie w Zakresie Energii”- NTE. Available at: <https://www.gov.pl/web/ncbr/ncbr-oglosilo-iii-konkurs-w-ramach-strategicznego-programu-badan-naukowych-i-prac-rozwojowych-nowe-technologie-w-zakresie-energii--nte>.

²⁹ Website of the Republic of Poland (February 2024) Jak zostać silnym graczem na zielonym rynku ciepła? Poznaj przedsięwzięcia ciepłownicze NCBR. Available at: <https://www.gov.pl/web/ncbr/jak-zostac-silnym-graczem-na-zielonym-ryнку-ciepła-poznaj-przedsięwzięcia-ciepłownicze-ncbr>.

³⁰ Website of the Republic of Poland (February 2024) Rozwój innowacyjnych technologii na rynku surowców wtórnych. NCBR ogłasza konkurs KPO GOZ. Available at: <https://www.gov.pl/web/ncbr/rozwoj-innowacyjnych-technologii-na-ryнку-surowców-wtórnych-ncbr-ogłasza-konkurs-kpo-goz>.

³¹ Website of the Republic of Poland (October 2024) Spotkanie informacyjne poświęcone naborowi do III konkursu Rządowego Programu Strategicznego Hydrostrateg „Innowacje dla gospodarki wodnej i żeglugi śródlądowej. Available at: <https://www.gov.pl/web/ncbr/spotkanie-informacyjne-poswiecone-naborowi-do-iii-konkursu-rzadowego-programu-strategicznego-hydrostrateg-innowacje-dla-gospodarki-wodnej-i-zezlugi-srodladowej>.

³² Website of the Republic of Poland (September 2024) Jaka jest rola biometanu w drodze do transformacji energetycznej? Dyskusja podczas konferencji pn. Perspektywy rozwoju rynku biogazu i biometanu. Available at: <https://www.gov.pl/web/ncbr/jaka-jest-rola-biometanu-w-drodze-do-transformacji-energetycznej-dyskusja-podczas-konferencji-pn-perspektywy-rozwoju-ryнку-biogazu-i-biometanu>.

ERA Action 12) Accelerate the green/digital transition of Europe's key industrial ecosystems Projects and initiatives in relation to ERA Action 12 include: (1) the “HyperPIC” project, which aims to develop innovative products tailored to the demands of AI, Industry 4.0, Agriculture 4.0, and the Internet of Things (IoT); (2) planned support to offshore and onshore wind energy projects³³; (3) *SMART Path competition* on fostering innovation and R&D in business³⁴; (4) a *Deep Tech Talent Initiative*, funding up to 20 projects aimed at modernising education through the development of new deep tech curricula for higher education institutions³⁵.

ERA Action 14) Bring Science closer to citizens The Ministry of Science and Higher Education supports the Independent Students' Association's *Student Nobel* initiative³⁶ and funded the development of a free online course titled *ABC of Science Promotion*.³⁷ In 2024, Poland hosted a series of events as part of the European Researchers' Night, supported by the *Marie Skłodowska-Curie Actions*. On September 27, Adam Mickiewicz University in Poznań organised workshops and chemical demonstrations under the *SUSTAINIGHT* grant, focusing on sustainable development. Another key event followed on October 12, spanning six Silesian universities. These initiatives aimed to engage the public with science, highlight its role in tackling global challenges like environmental protection and innovation, and promote accessibility, lifelong learning, and research careers among youth.³⁸

Poland took part in the *Science Comes to Town* initiative, which promoted broad, inclusive public engagement through lectures, workshops, and exhibitions aimed at fostering science and social dialogue. Katowice was named the latest *European City of Science*³⁹. This recognition resulted from the joint efforts of the city, seven public universities forming the Academic Consortium Katowice City of Science, and the *Silesian Science Festival* - one of Europe's largest science outreach events. The festival's 8th edition, held from 7- 9 December 2024, featured nearly 1,000 activities across diverse disciplines, showcasing cutting-edge innovations and emphasizing accessibility and inclusivity while encouraging exploration of scientific careers⁴⁰.

³³ Website of the Republic of Poland (August 2024) NCBR ogłosiło III konkurs w ramach Strategicznego Programu Badań Naukowych i Prac Rozwojowych "Nowe Technologie w Zakresie Energii"- NTE. Available at: <https://www.gov.pl/web/ncbr/ncbr-oglosilo-iii-konkurs-w-ramach-strategicznego-programu-badan-naukowych-i-prac-rozwojowych-nowe-technologie-w-zakresie-energii-nte>.

³⁴ Website of the Republic of Poland (September 2024) Fundusze Europejskie na innowacyjne rozwiązania. Trwa nabór. Available at: <https://www.gov.pl/web/ncbr/fundusze-europejskie-na-innowacyjne-rozwiazania-trwa-nabor>.

³⁵ Website of the Republic of Poland (May 2024) EIT Deep Tech Talent Initiative – zapraszamy do składania wniosków. Available at: <https://www.gov.pl/web/nauka/eit-deep-tech-talent-initiative--zapraszamy-do-skladania-wnioskow>.

³⁶ Website of the Republic of Poland (June 2024) Spotkanie szefa resortu nauki z przedstawicielami NZS oraz laureatami Studenckiego Nobla. Available at: <https://www.gov.pl/web/nauka/spotkanie-szefa-resortu-nauki-z-przedstawicielami-nzs-oraz-laureatami-studenckiego-nobla>.

³⁷ Website of the Republic of Poland (August 2024) Zapraszamy do udziału w bezpłatnym kursie online „ABC promocji nauki”. Available at: <https://www.gov.pl/web/nauka/zapraszamy-do-udzialu-w-bezplatnym-kursie-online-abc-promocji-nauki>.

³⁸ See <https://marie-skłodowska-curie-actions.ec.europa.eu/actions/msca-citizens/join-a-celebration-of-science>

³⁹ See: <https://miastonauki.pl/home>

⁴⁰ See: <https://slaskifestiwalnauki.pl/en/we-concluded-the-8th-sfn-katowice>

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) The national “*Excellence Initiative – Research University (IDUB)*” programme continues to support universities in achieving academic and research excellence, with an increased budget for the 2020-2026 period.⁴¹ Under the Horizon 2020 “*Teaming for Excellence*” programme, three excellence centres (ENSEMBLE3, NOMATEN, and Sano) have recently presented their five-year activities funded through the initiative.⁴² Additionally, four more Polish projects secured funding: another four Polish projects received funding in this programme: *RNA and Cell Biology – from Fundamental Research to Therapies* (RACE) and, in the latest call, *TRIO-VI CoE* (Translational Research and Innovation in Ophthalmology Vision), *P4Health* (Centre for Precise Phenotyping and BioDataBanking), and *Astrocent Plus* (Particle Astrophysics Science and Technology Centre). Finally, under Horizon Europe Poland received a 140 percent increase in funding and a 45 percent rise in the number of projects compared to Horizon 2020⁴³. ERA Action 16 was mentioned as one of the priorities for 2025, focusing on supporting researchers to access funding from EU Framework Programmes (e.g., ERC grants) and improving competencies of research and support staff⁴⁴.

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 Poland’s performance in achieving the ERA objectives as defined in the Pact for R&I during the period 2022-2024.

ERA Priority 1, aiming to deepen a truly functioning internal market for knowledge, is addressed through a range of initiatives. In **Action 1** (Open Science) there was a high level of engagement, and it is expected that there will be further developments in open access policies. ERA Dashboard Indicator 7 shows that although Poland exceeds the EU average in the number of open-access datasets, this figure has declined since 2020. In addition, progress was recorded in **Actions 5** (gender equality) and **7** (knowledge valorisation) by the NCN, the NAWA, and the Lukasiewicz Research Network, which is also reflected in the ERA Dashboard. For instance, Poland’s business expenditure for R&D (see Table 1 in Chapter 1), the proportion of mixed-gender teams (ERA Dashboard Indicator 13), and the percentage of business enterprise researchers (ERA Dashboard Indicator 24) have increased over the last years (however, the stagnation is seen from 2023 to 2024). Similarly, there has been an increase in the Women in Digital Index (ERA Dashboard Indicator 15), along with the

⁴¹ Research in Poland. *Initiative of Excellence – Research University*. Available at: <https://researchinpoland.org/initiative-of-excellence-research-university>

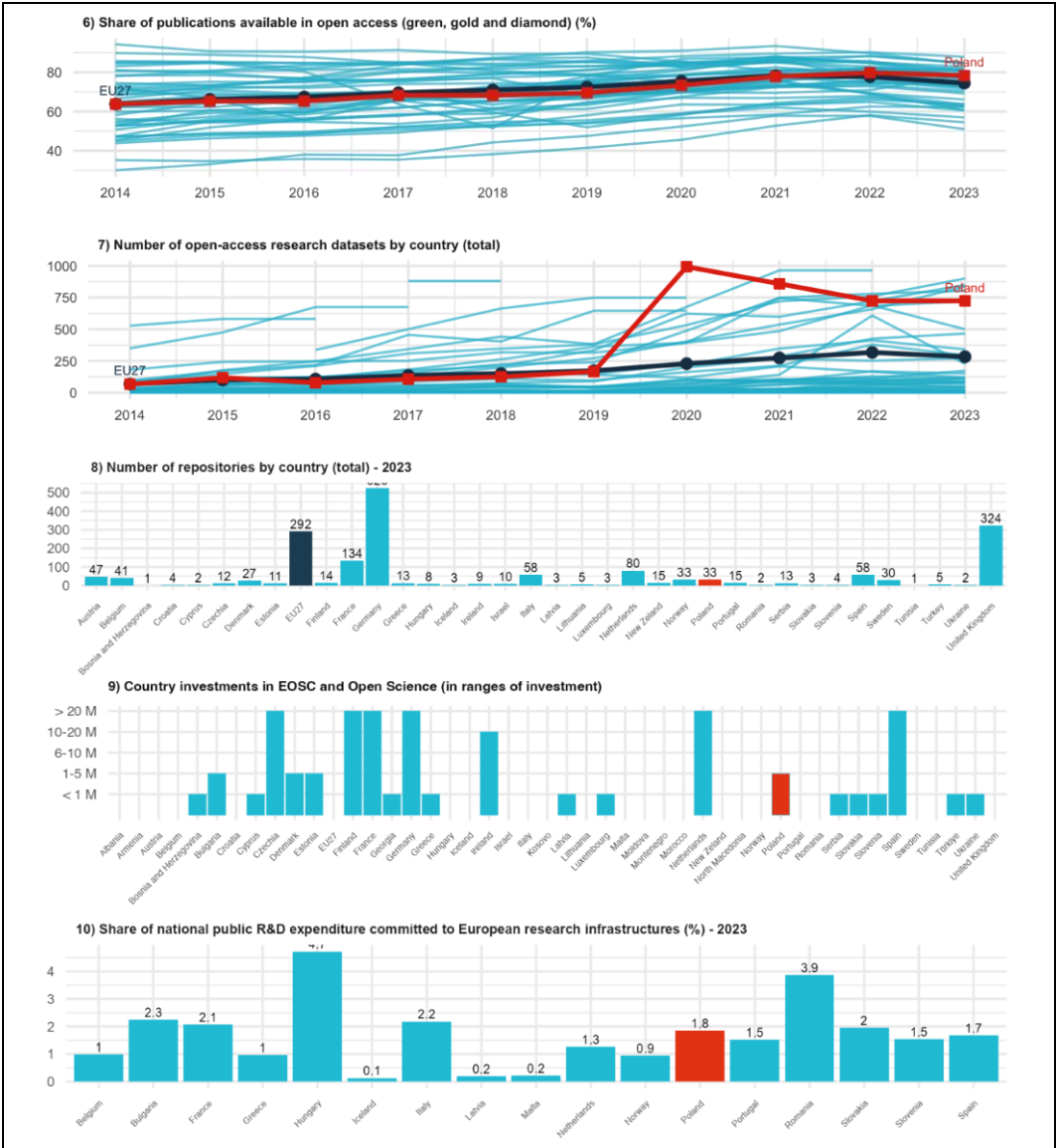
⁴² Website of the Republic of Poland (August 2024) Centra Doskonałości nabierają rozmachu. Available at: <https://www.gov.pl/web/ncbr/centra-doskonalosci-nabieraja-rozmachu>

⁴³ Website of the Republic of Poland (September 2024) Horyzont Europa vs. Horyzont 2020: wzrost wartości finansowania o 140%. Available at: <https://www.gov.pl/web/ncbr/horyzont-europa-vs-horyzont-2020-wzrost-wartosci-finansowania-o-140>

⁴⁴ Interview with Ministry of Science and Higher Education, 2024-12-13

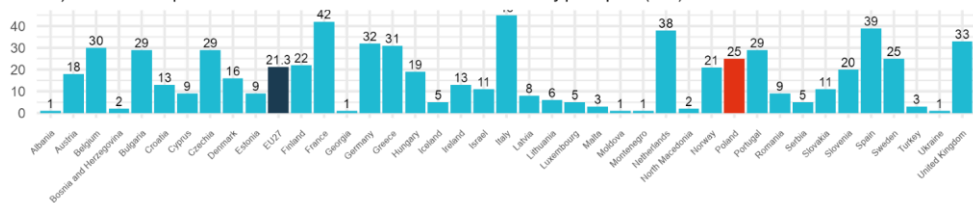
proportion of women among doctoral graduates in STEM (ERA Dashboard Indicator 16). Similar progress is also noted in **Action 8** (research infrastructures), mainly committed by the NCBiR, yet its reflection in the ERA Dashboard Indicators cannot be observed. It is expected to gain momentum under the new government as Poland updates its R&I map⁴⁵.

Figure 3-1 Indicators for ERA Priority 1

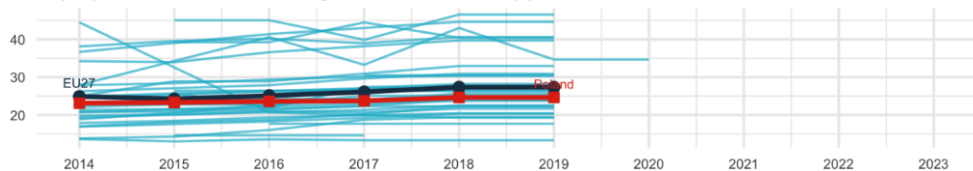


⁴⁵ Interview with Ministry of Science and Higher Education, 2024-12-13

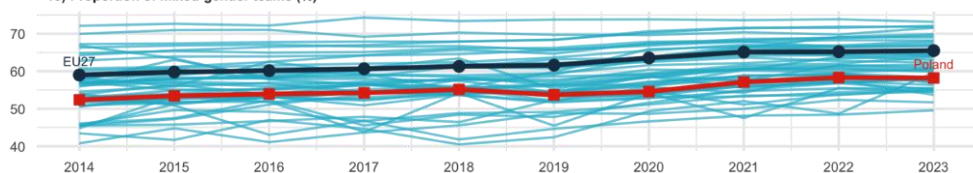
11) Number of European RIs in which a Member State or an Associated Country participates (total) - 2023



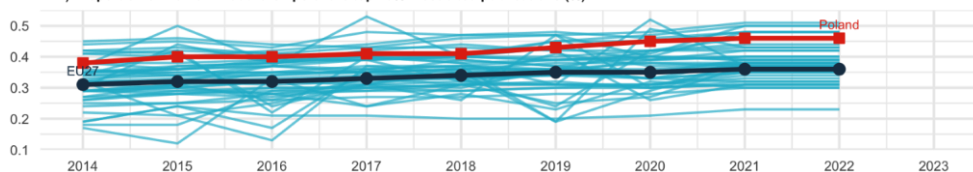
12) Proportion of women of Grade A among academic staff/researchers (%)



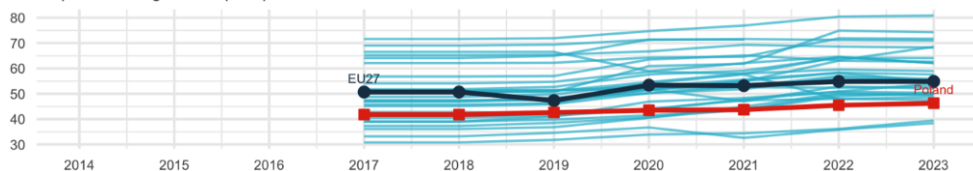
13) Proportion of mixed-gender teams (%)



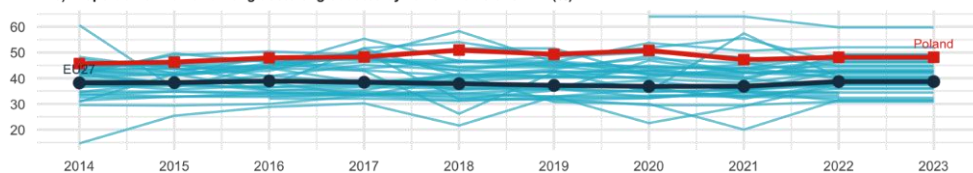
14) Proportion of women in authorships of the top 10% most cited publications (%)



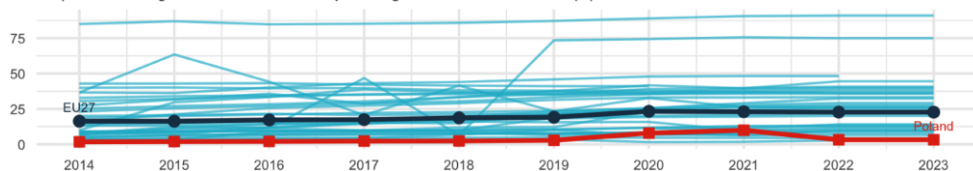
15) Women in Digital index (0-100)



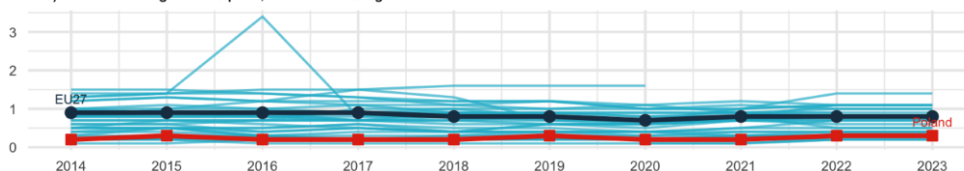
16) Proportion of women among doctoral graduates by narrow fields of STEM (%)



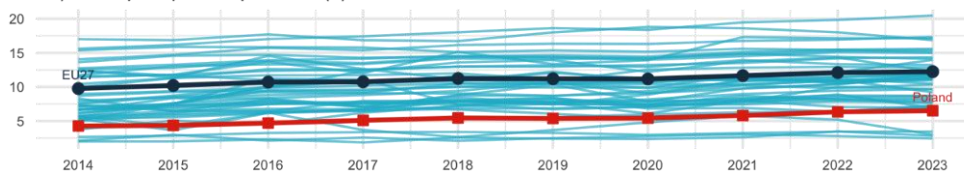
17) Share of foreign doctorate students as a percentage of all doctorate students (%)



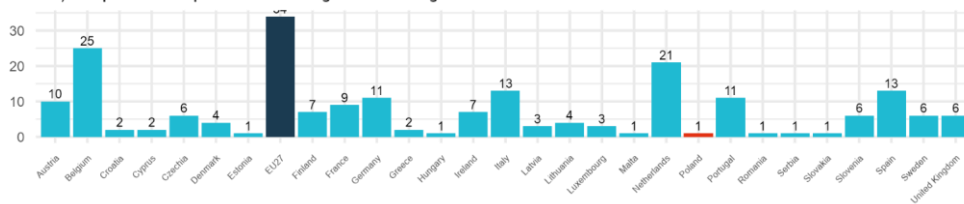
18) New doctorate graduates per 1,000 inhabitants aged 25-34



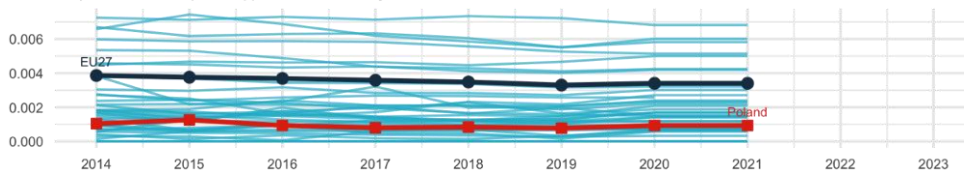
19) Share of public-private co-publications (%)



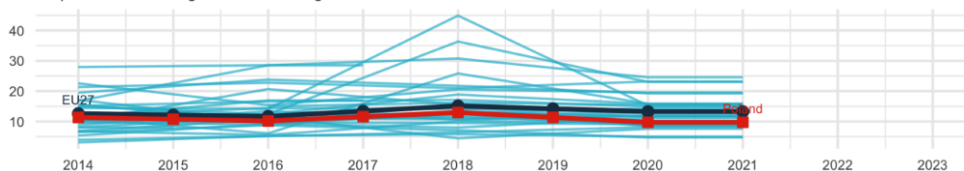
20) Best practice examples and methodologies for knowledge valorisation - 2023



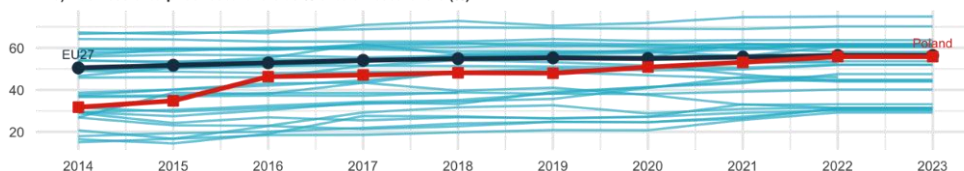
21) Number of PCT patent applications divided by GDP in million Euros/Dollars



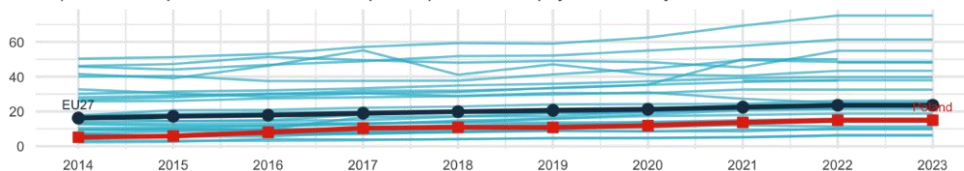
22) Share of innovating firms collaborating with HEI/PRO out of all innovative firms



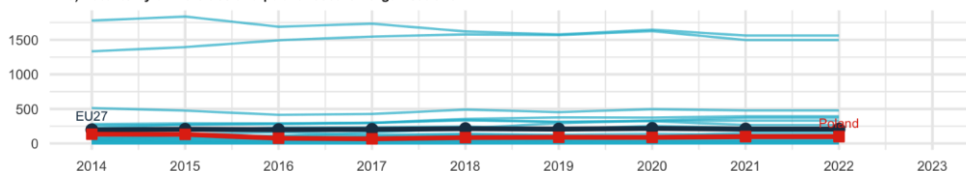
23) Business enterprise researchers as % of total researchers (%)



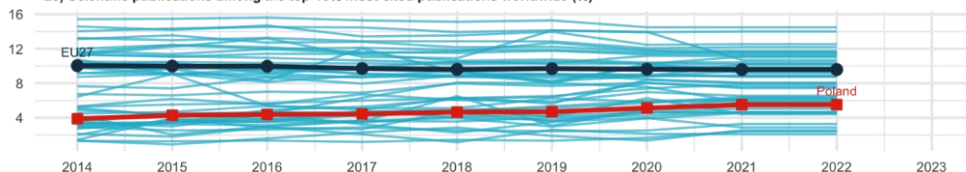
24) Business enterprise researchers in full-time equivalent per thousand employment in industry



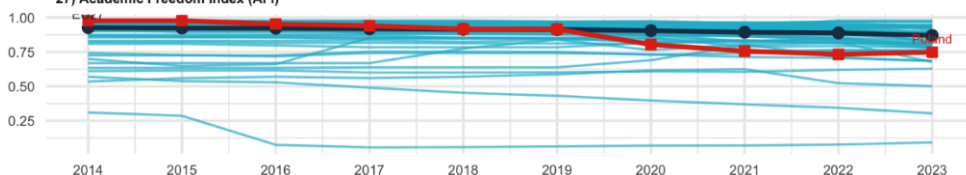
25) Patents by universities and public research organisations



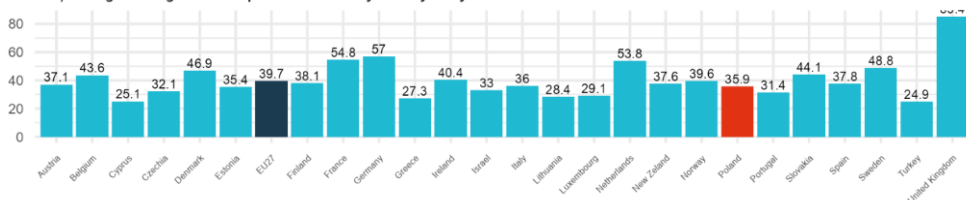
26) Scientific publications among the top-10% most cited publications worldwide (%)



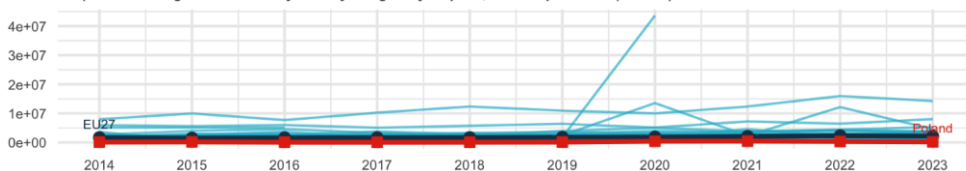
27) Academic Freedom Index (AFi)



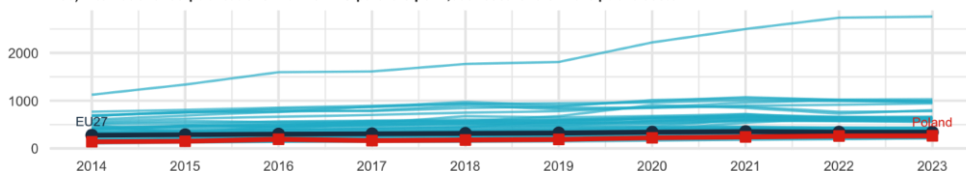
28) Average ranking score of top 10 universities by country and year - 2023



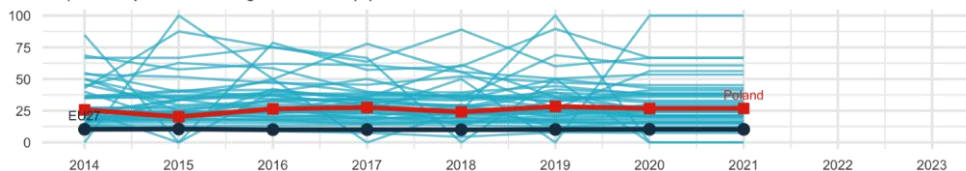
29) Sum of ERC grants received by country in a given year per 1,000 R&D personnel (in FTEs)

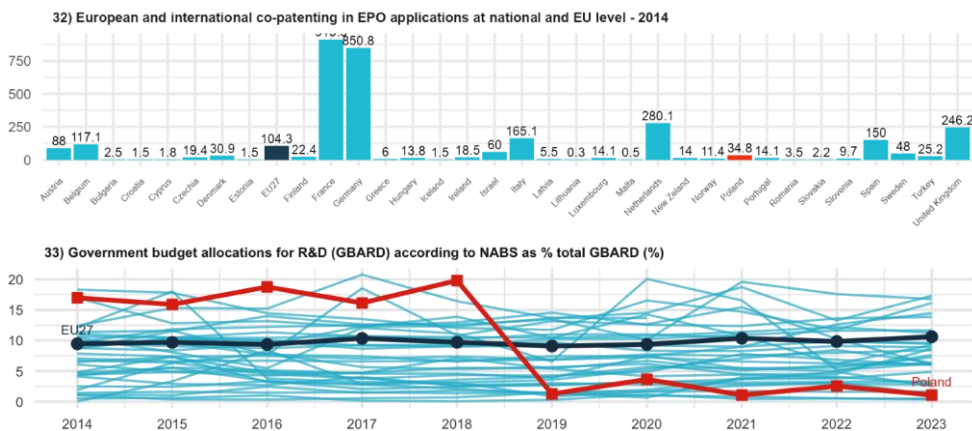


30) International co-publications with non-EU partners per 1,000 researchers in the public sector



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

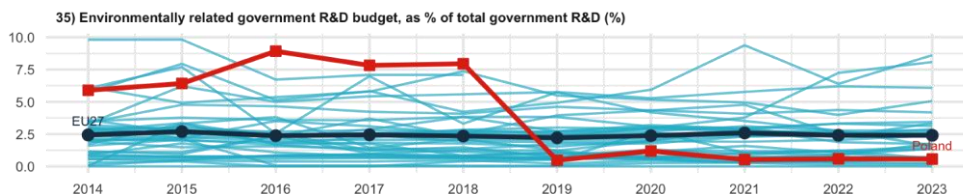




Source: see Annex 1

ERA Priority 2 consists of actions pursued to integrate twin transitions into the national research agenda while pursuing greater citizen engagement with scientific activities. In that vein, Poland has committed to **Actions 10, 11, 12, and 14**. Nevertheless, such the commitments were not yet reflected in an increasing or stable pattern in indicators, such as the percentage of environmentally related government R&D budget (ERA Dashboard Indicator 35) and patents in environmental technology (ERA Dashboard Indicator 37). Although many data points for recent years are missing, Poland is performing mostly below the EU average. The ERA Country Report for Poland of 2023⁴⁶ highlighted that due to the lack of a legal framework to accelerate the processes of robotisation, digitalisation, and innovation in the industry, the slow diffusion of innovative solutions hinders green and digital transitions. As of December 2023, Poland updated its Recovery and Resilience Plan (RRP) to include a RE-PowerEU chapter, aiming to increase the resilience of the Polish energy system and accelerate the green transition of key economic sectors⁴⁷.

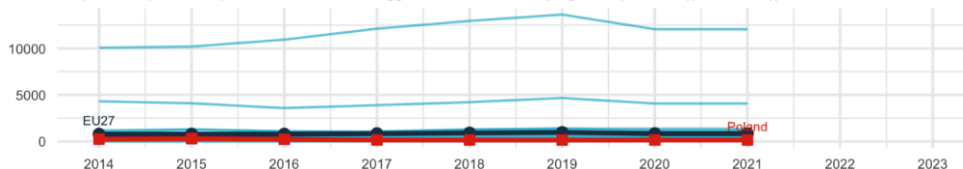
Figure 3-2 Indicators for ERA Priority 2



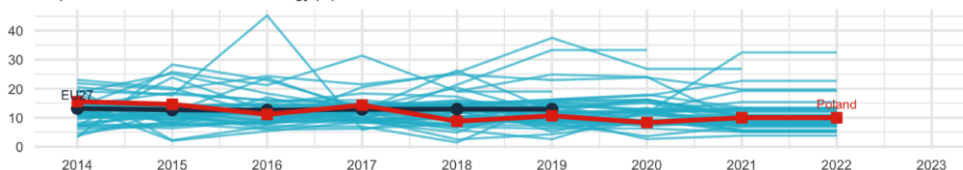
⁴⁶ European Commission (2024) ERA Country Report 2023: Poland: <https://european-research-area.ec.europa.eu/sites/default/files/documents/2024-05/ERA%20Country%20Report%202023%20Poland.pdf>

⁴⁷ European Commission "Poland's recovery and resilience plan". Available at: https://commission.europa.eu/business-economy-euro/economic-recovery/recovery-and-resilience-facility/country-pages/polands-recovery-and-resilience-plan_en

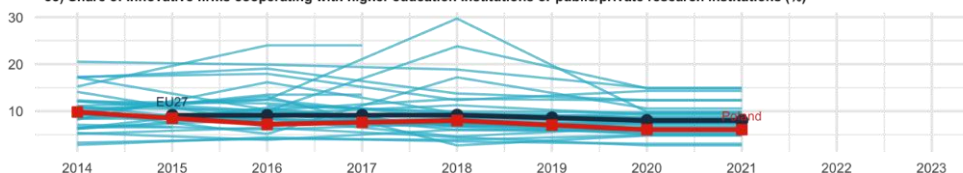
36) National public and private investments as suggested in the SET Plan progress report 2021 ((EUR million))



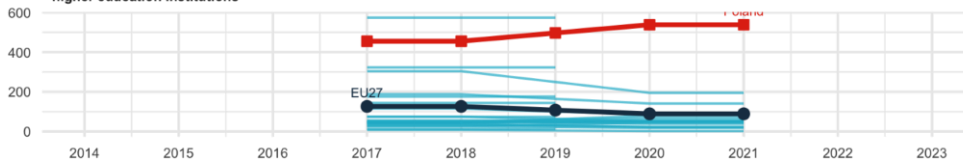
37) Patents on environmental technology (%)



38) Share of innovative firms cooperating with higher education institutions or public/private research institutions (%)



39) Enterprises that purchased or licensed-in patents or other IPRs from public research organisations, universities or higher education institutions



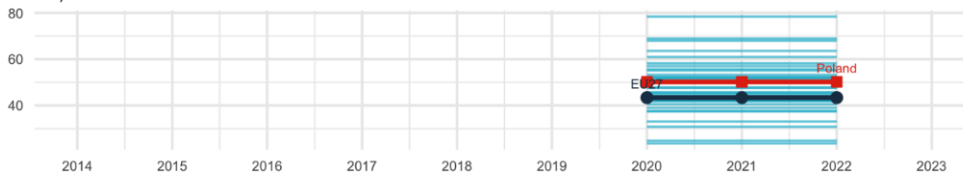
40) Direct government support and indirect government support through R&D tax incentives as a % GDP (%)

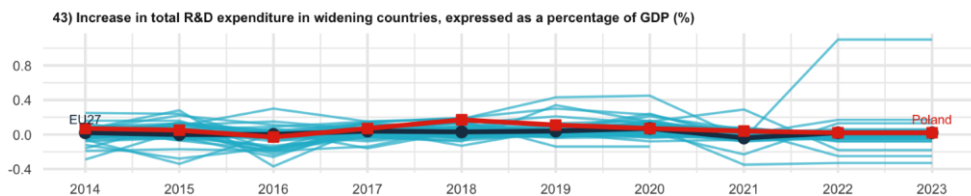


41) Green bond issuance as a percentage of total bond issuance (%)



42) Trust in Science





Source: see Annex 1

ERA Priority 3, focusing on increasing access to research and development excellence within the union, is addressed through Poland's commitment to **Action 16**. For this is important increase in total R&D expenditure in widening countries, expressed in ERA Dashboard Indicator 43, which is declining in Poland since 2017 (reaching 0.02 percent in 2022). In general, **Action 16**, initiatives are predominantly undertaken by universities and related research centres rather than central administrative bodies, which could partially explain for the unstable and declining trend observed in Seal of Excellence projects (ERA Dashboard Indicator 48).

Figure 3-3 Indicators for ERA Priority 3

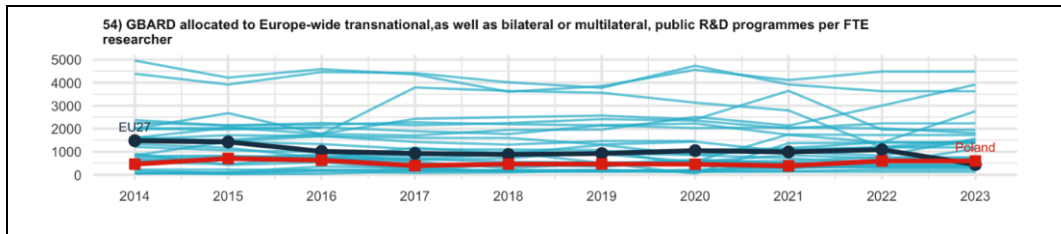




Source: see Annex 1

Poland is not committed to **ERA Priority 4**, however, Poland is slightly above EU average in GBARD allocated to Europe-wide transnational, as well as bilateral or multilateral, public R&D programmes per FTE researcher (Figure 3-4).

Figure 3-4 Indicators for ERA Priority 4



Source: see Annex 1

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

This chapter presents a qualitative assessment of the ERA Action commitments of Poland and their effect on identified national R&I priorities, including the quantitative performance in the ERA Dashboard.

As was stated above, there is no single national plan/strategy dedicated to the implementation of the ERA Policy Agenda in Poland. Instead, the ERA actions are implemented through a range of national policies and initiatives. One of the main documents- State Scientific Policy - outlines Poland's national priorities for scientific research and development. The Ministry of Science and Higher Education has started updating the State Scientific Policy, including a larger/better inclusion of European affairs. Substantial changes are expected in 2025, thus its alignment with the ERA should be evaluated after the changes are in place. In general, ERA actions are viewed by stakeholders as a valuable framework for exchanging best practices and benchmarking Poland's R&I system against those of other Member States. This process has provided additional space for reflection and supported the development of national strategies⁴⁸.

The implementation of ERA Actions in Poland has faced significant challenges, primarily due to disruptions caused by the aftermath of the parliamentary elections in October 2023. The government change after these elections caused an operational freeze in several Ministries and substantial organisational changes, including high staff turnover. Consequently, re-establishing teams and implementing procedures took considerable time. To address these issues, the Ministry has committed to expanding recruitment in 2025 and appointing a dedicated coordinator to oversee ERA-related activities, aiming to establish a more stable and effective organisational structure. More broadly, the administration is working on re-prioritisation and strategic planning, including a higher focus on EU affairs and relations, compared to the previous administration. Poland's EU Presidency of the Council was expected to further drive the momentum for aligning national R&I priorities with ERA objectives.⁴⁹ However, the slow pace of implementation under the previous administration has limited the measurable impact of ERA Actions. The current administration is prioritising a more proactive stance, which it refers to as a "new opening" in ERA implementation and engagement with European partners. Actions 8 and 16 are expected to be supported by the updated policy. Although the visible effects of ERA implementation in Poland remain limited, recent reforms and a renewed focus on European integration signal a turning point. As these efforts take shape, it will

⁴⁸ Interview with Ministry of Science and Higher Education, 2024-12-13

⁴⁹ Interview with Ministry of Science and Higher Education, 2024-12-13

become clearer whether the previous delays were primarily due to organisational issues or other structural factors.⁵⁰

5. Conclusions

Poland demonstrates commitment to the goals of the ERA and its Policy Agenda. While there is **no dedicated national ERA Action Plan**, the ERA objectives are pursued through national R&I strategies, such as the State Scientific Policy. An **update to the State Scientific Policy in 2025** is expected to strengthen alignment with ERA goals. Poland has undertaken numerous initiatives aligned with the ERA Policy Agenda, as outlined in Chapter 2. These efforts include advancements in areas such as open access, reforms to research assessment systems, and fostering international collaboration, alongside initiatives targeting the green and digital transitions. However, the impact of these activities on Poland's performance in ERA Dashboard Indicators is not yet fully apparent. While some indicators display positive trends, such as increasing business R&D expenditure, progress in other areas remains less visible. This is partly attributable to gaps in recent data, which limit the ability to comprehensively assess the outcomes.

As Poland continues to align its national strategies with ERA priorities, the full effects of these initiatives are expected to become more evident over time, supported by enhanced data collection and monitoring efforts. The government's renewed commitment, referred to as a "new opening" for ERA implementation, signals a turning point in Poland's trajectory within the European R&I ecosystem.

⁵⁰ Interview with Ministry of Science and Higher Education, 2024-12-13

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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. 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 current prices, euro per capita	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	<i>Proportion of women among doctoral graduates by narrow fields of STEM</i>	Eurostat
17	<i>Share of foreign doctorate students as a percentage of all doctorate students</i>	Eurostat
18	<i>New doctorate graduates per 1,000 inhabitants aged 25-34</i>	Eurostat
19	<i>Share of public-private co-publications</i>	EC_Scopus
20	<i>(Cumulative number of) Best practice examples and methodologies for knowledge valorisation</i>	Knowledge Valorisation Platform
21	<i>Number of PCT patent applications divided by GDP in million Euros/Dollars</i>	OECD, Eurostat & World Bank
22	<i>Share of innovating firms collaborating with HEI/PRO out of all innovative firms</i>	Eurostat CIS (own calculations)
23	<i>Business enterprise researchers as % of total researchers</i>	OECD
24	<i>Business enterprise researchers in full-time equivalent per thousand employment in industry</i>	OECD
25	<i>Patents by universities and public research organisations</i>	EPO PATSTAT - Fraunhofer ISI calculations
26	<i>% of scientific publications among the top-10% most cited publications worldwide</i>	EC_Scopus
27	<i>Academic Freedom Index (AFI)</i>	V-Dem Varieties of Democracy
28	<i>Average ranking score of top 10 universities by country and year</i>	QS World University Ranking
29	<i>Sum of ERC grants received by country in a given year per 1,000 R&D personnel (in FTEs)</i>	EC-ERC
30	<i>International co-publications with non-EU partners per 1,000 researchers in the public sector</i>	EC_ScienceMetrix and Eurostat/OECD
31	<i>Share of patents with foreign co-inventors</i>	OECD
32	<i>European and international co-patenting in EPO applications at national and EU level</i>	Eurostat
33	<i>Government budget allocations for R&D (GBARD) according to NABS as % total GBARD</i>	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	<i>Environmentally related government R&D budget, as % of total government R&D</i>	Eurostat
36	<i>National public and private investments as suggested in the SET Plan progress report 2021 (EUR million)</i>	SETIS R&I data
37	<i>% Patents on environmental technology</i>	OECD
38	<i>Share of innovative firms cooperating with higher education institutions or public/private research institutions</i>	Eurostat CIS
39	<i>Enterprises that purchased or licensed-in patents or other IPRs from public research</i>	Eurostat CIS

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

Figure 3.3 Indicators for ERA Priority 3

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

Figure 3.4 Indicators for ERA Priority 4

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

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