



European
Commission

ERA Country Report 2024

Israel

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Report

Research and
Innovation

ERA Country Report 2024: Israel

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ERA Country Report 2024

Israel

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Key takeaways

- Israel's R&I strategy prioritises high-impact research, translating innovations into marketable solutions, with 6 percent of GDP invested in R&D. Key focuses include digital and green transitions, strengths in tech sectors like AI and cybersecurity, and initiatives like the National R&D Priorities Plan and National Digital Program.
- Israel committed to 3 out of 20 ERA Actions. It compensates for the absence of a formal ERA National Action Plan with strong engagement in EU research frameworks, particularly Horizon Europe, fostering collaboration in green innovation, digital transformation, and scientific advancements while strengthening cross-border synergies and knowledge exchange.
- ERA Action 1 (open science) aligns with Israel's innovation goals in digital and green technologies, but progress on Open Science remains behind EU average, with uneven university adoption.
- ERA Action 8 (research infrastructures) complements Israel's priorities in bio-convergence, supported by initiatives like the Boost Program (deep-tech and R&D), the Bio-Convergence Program (targeting health tech), and the National AI Program.
- ERA Action 12 (industrial eco system) aligns with Israel's focus on renewable energy, digital transformation, and climate tech through initiatives like the Climate Law, circular economy strategy, and National AI Program.

1. National context

Israel's **research and innovation (R&I) strategy** focuses on high-impact basic and applied research and translation of the latter into marketable innovations. In 2022, the country invested approximately 6 percent of its GDP in R&D, one of the highest rates globally, underscoring its commitment to fostering economic growth and global competitiveness¹. Israel's R&I policies prioritise technological advancement, with a strong emphasis on driving innovation in areas like digital and green transitions. As a result, Israel has established itself as one of the global start-up hubs with strengths in the cybersecurity, AI, fintech, health tech, agrifood tech and space tech².

Women make up 58 percent of undergraduates, 63 percent of graduate students, and 53 percent of doctoral students³. However, their representation drops sharply at the top academic levels, with only around 30 percent of women in senior university positions and around 45 percent in college positions⁴. The Council for Higher Education has a specific initiative targeting the increase of females in senior faculty and management positions.

Central to Israel's R&I strategy are the Council for Higher Education (CHE) and the Israel Innovation Authority (IIA). The first plays an important role in promoting ground-breaking basic research in key areas via flagship initiatives. e.g., in Data Science and AI, Quantum Science and Technologies (QST), Sustainability and the Climate Crisis, Advanced Bio-Medical Research. These initiatives invest in developing human capital via various scholarships programs as well as in infrastructure and in competitive research via diversified grants programs.

The IIA plays a pivotal role in developing high-tech industries, start-ups, and disruptive technologies. The IIA's strategic reports emphasise the importance of supporting deep-tech start-ups, enhancing R&D infrastructure⁵ and addressing market failures and regulatory barriers. Another key component of Israel's R&I strategy is the **National R&D Priorities Plan**, updated periodically by the Ministry of Innovation, Science, and Technology. This plan outlines five critical areas for investment: **Bio-Convergence, Food Tech, Blue Tech (The Sea as a natural resource), Renewable Energies and Energy Storage, the National Plan for Food Security 2050**⁶ as well as **the Civilian Space Industry**⁷. Another key element of Israel's R&D policy is the **National Digital Program**, which focuses on digitising public services, enhancing cybersecurity, and promoting digital literacy nationwide. Led by the Ministry for Social Equality, the **National Digital Israel Initiative** also aims to position Israel among the world's most technologically advanced nations⁸.

Israel's R&D strategies are also influenced by its **long-standing cooperation with European Union initiatives**. Israel has been an Associated Country to the EU's R&I Framework

¹ <https://www.statista.com/statistics/732269/worldwide-research-and-development-share-of-gdp-top-countries/>

² <https://startupnationcentral.org/hub/blog/israel-tech-q1-2024-resilient-growth/>

³ <https://che.org.il/en/%D7%A0%D7%A9%D7%99%D7%9D-%D7%AA%D7%97%D7%95%D7%9E%D7%99-%D7%9C%D7%99%D7%9E%D7%95%D7%93-%D7%9C%D7%AA%D7%95%D7%90%D7%A8-%D7%A8%D7%90%D7%A9%D7%95%D7%9F/>

⁴ <https://m.knesset.gov.il/EN/activity/mmm/me040618.pdf>

⁵ <https://innovationisrael.org.il/en/the-israel-innovation-authority/>

⁶ <https://www.gov.il/en/pages/firststepformulatingnationalfoodsecurityplan2050>

⁷ https://www.gov.il/BlobFolder/news/most_news20220907/en/Recommendation%20on%20Israel%27s%20National%20Civilian%20R&D%20Priority%20Areas.pdf

⁸ <https://cdn-assets.inwink.com/b0269dea-af7b-4460-b29a-c40b9941c4c5/3ffb84c-7f14-455f-b4de-bb3629aa9c9a>

Programmes since 1996, contributing to over 5,000 joint research projects. The country's **participation in Horizon Europe**, formalised in December 2021, addresses shared priorities like the green and digital transitions and public health advancements⁹. Through ISERD, the Israel-Europe Research & Innovation Directorate, based in IIA, Israel actively engages with European actors and frameworks, leveraging programs like Horizon Europe to increase collaboration and innovation outcomes. This integration connects Israel's R&I landscape to the European ecosystem¹⁰.

Table 1 Structural Key Indicators

Indicator	EU27	Israel		
	2023	2023	Average 2018-2020	Average 2021-2023
GDP per capita, in current prices	35 790.00	/	/	/
Gross Domestic Expenditure on R&D (GERD) as a share of GDP	2.27	5.77	5.37	/
Size of the population (million)	448.80	/	/	/
Researchers (in FTE) per million inhabitants	4 681.34	/	/	/

Source: See Annex 1

2. Status of the Implementation of the ERA Policy Agenda

Chapter 2 briefly summarises **new developments in Israel since the publication of the ERA Country Report 2023**. The findings are based on qualitative desk research and interviews. Israel has committed to 3 out of 20 ERA Actions, covering two out of the four ERA Priority Areas (see Table 2). Although Israel does not implement a formal national ERA action plan, it compensates with significant participation in EU research framework programmes.

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 FRA	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)

This strategic involvement underscores Israel's dedication to fostering international collaboration in critical areas of mutual interest, including green innovation, digital transformation, and cutting-edge scientific advancements. By aligning with European priorities, Israel not only contributes its renowned innovation capacity to collective goals but also benefits from enhanced integration into Europe's research and development ecosystems. This participation

⁹https://research-and-innovation.ec.europa.eu/strategy/strategy-research-and-innovation/europe-world/international-cooperation/association-horizon-europe/israel_en

¹⁰<https://innovationisrael.org.il/iserd/about-iserd/>

strengthens cross-border synergies, facilitates knowledge exchange, and supports Israel's positioning as a key partner in tackling global challenges through research and innovation.

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 European Open Science Cloud (EOSC) Israel has made some strides in promoting the open sharing of knowledge and the reuse of research outputs, aligning with international open science standards such as the European Open Science Cloud (EOSC). At the national level, Israel participates in ERA-NET projects under the European Research Area, led by the Israel National Cyber Directorate (INCD) and the Ministry of Innovation, Science, and Technology, to promote Open Science. These efforts focus on areas like health, energy, and digital transformation, aligning Israeli research with FAIR principles and the EOSC¹¹. Notably, the Ministry of Health engages in ERA-NET NEURON 2023–2026, funding research on cerebrovascular diseases¹². The third EU-Israel Joint Research and Innovation Committee meeting under Horizon Europe in 2024 highlighted the importance of values like academic freedom, research ethics, and open science, essential for continued cooperation. Israel's involvement in Horizon Europe underscores its dedication to transparency, open access, and collaboration with European research standards¹³. Bar-Ilan University, a leader in open science, is a member of OpenAIRE¹⁴ and established a National Open Access Desk.

ERA Action 5) Promote gender equality and foster inclusiveness, taking note of the Ljubljana declaration Although Israel is not formally committed to Action 5 the country participates as an observer in the ERA Forum sub-group on this topic. The gender distribution in Israel's higher education system follows a so-called "scissors curve": while women constitute the majority at the student level, they are significantly underrepresented in senior academic positions.¹⁵ The Council for Higher Education has launched a dedicated initiative aimed at increasing the proportion of women in senior faculty and leadership positions.

ERA Action 8) Strengthen sustainability, accessibility and resilience of research infrastructures in the ERA Israel actively contributes to the European Strategy Forum on Research Infrastructures (ESFRI) and European Research Infrastructure Consortia (ERICs). Since 2023, Israel's Council for Higher Education increased the Research Infrastructure Program budget to ILS 600 million (EUR 163 million), for five cycles, redesigning it with two tracks: (1) support for research core facility upgrades and (2) support for highly complex research core facilities. In 2023, Israel also launched a 5-year initiative (budget: ILS 348 million; EUR 94 million) to promote breakthrough research and "brain (re)gain," in partnership with the Ministry of Aliyah and Integration – responsible for providing assistance to immigrants. It supports recruiting research associates and staff scientists, with one-third

¹¹ <https://www.m-era.net/about/m-consortium/israel>

¹² <https://www.gesundheitsforschung-bmbf.de/de/era-net-neuron-2023-2026-forderung-von-multinationaler-und-translationaler-forschung-zu-16418.php>

¹³ https://research-and-innovation.ec.europa.eu/news/all-research-and-innovation-news/third-meeting-eu-israel-joint-research-and-innovation-committee-under-horizon-europe-2024-05-06_en

¹⁴ <https://www.biu.ac.il/en/article/482701>

¹⁵ <https://che.org.il/en/%D7%A0%D7%A9%D7%99%D7%9D-%D7%AA%D7%97%D7%95%D7%9E%D7%99-%D7%9C%D7%99%D7%9E%D7%95%D7%93-%D7%9C%D7%AA%D7%95%D7%90%D7%A8-%D7%A8%D7%90%D7%A9%D7%95%D7%9F/>

of costs covered by the Planning and Budgeting Committee and the remainder by universities and Principal Investigators.

The National Artificial Intelligence Program is led by a forum of governmental ministries and agencies, including CHE, IIA, the Ministry of Innovation, Science and Technology, and the National Digital Bureau, has entered its second phase (2023-2027). It includes establishing a National AI Research Institute to advance AI research and foster collaboration between Israeli and global experts¹⁶. Additionally, the Israel Innovation Authority will invest ILS 30 million (EUR 8 million) in nationwide AI infrastructure, with NextSilicon selected to develop hardware and software for AI applications¹⁷. The Israel Innovation Authority has furthermore launched an ILS 113 million (EUR 31 million) tender as part of Israel's National Bio-Convergence Program to create a research and development centre for bio-devices.¹⁸ The IIA's Boost Program (ILS 4 billion; 1.1 billion euros), aims to strengthen Israel's high-tech industry¹⁹. In September 2024, Israel signed the Council of Europe Framework Convention on Artificial Intelligence and Human Rights, Democracy and the Rule of Law. The negotiations were Led by the Ministry of Innovation, Science, and Technology, MFA, Ministry of Justice, Innovation Authority. The treaty establishes provisions regarding the responsible use of artificial intelligence while protecting human rights, democracy, and the rule of law. This serves as an important milestone in Israel's regulation efforts in the field of AI. Finally, Israel participates in the EUREKA network for R&D and innovation, the PRIMA initiative on water and agriculture, and the COST framework for interdisciplinary scientific collaboration.²⁰ Through these efforts, Israel strengthens ties with European researchers and advances in fields such as life sciences, physics, and environmental research.

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 12) Accelerate the green/digital transition of Europe's key industrial eco-systems Israel is currently passing a Climate Law aimed achieving net-zero emissions by 2050.²¹ Despite criticism for lacking enforceable targets and clear financial backing²², the law mandates the creation of national climate plans and advisory bodies. In April 2024, Israel furthermore passed a new environmental licensing law aligning industrial regulations with EU standards. It aims to reduce pollution and environmental risks, with an expected benefit of up to ILS 3 billion (EUR 810 million) and streamlines regulations for smaller businesses while ensuring compliance with European standards²³. Moreover, the Israeli Ministry of Environmental

¹⁶ <https://iaeei.org/tpost/mrg6mi2bh1-israel-launches-second-phase-of-national>

¹⁷ <https://www.cogeril.de/en/news-and-events/news/iaa-invests-in-it-infrastructure/>

¹⁸ https://innovationisrael.org.il/en/press_release/nis-113-million-to-establish-research-and-development-in-frastructure-center-for-bio-chips-based-bio-devices/

¹⁹ https://www.gov.il/en/pages/press_15012024_b

²⁰ <https://www.efsa.europa.eu/en/funding/programmes/cost-european-cooperation-science-technology>

²¹ <https://www.gov.il/en/pages/israeli-climate-law>

²² <https://www.timesofisrael.com/knesset-passes-1st-reading-of-climate-bill-without-any-mention-of-budgeting/>

²³ https://www.gov.il/en/pages/environmental_licensing_reform

Protection has developed a waste strategy aiming to reduce landfill waste from over 80 percent in 2020 to 20 percent by 2030.²⁴ The Council for Higher Education in 2023 also launched an ILS 450 million five-year flagship initiative in Sustainability and the Climate Crisis, with the dual objective: (i) to encourage innovative, multidisciplinary, and groundbreaking basic research related to contemporary global challenges, and (ii) to help achieve national goals and contribute to sustainable economic growth. The initiative will provide financial support for research centres and for the development of human capital in the following areas: (1) Energy and Climate Change; (2) Agriculture, Food/Nutrition and Biodiversity; and (3) Marine and Water Sciences. In December 2023, the Ministry of Innovation, Science, and Technology, in collaboration with the Ministry of Justice, unveiled Israel's first comprehensive AI policy which includes a risk-based regulatory approach, an AI Policy Coordination Centre, and fostering international collaboration for ethical AI²⁵. Israel is establishing a National Expert Forum on Artificial Intelligence to promote safe AI use, foster innovation, and address regulatory challenges²⁶. Additionally, the Israel Innovation Authority is investing ILS 36 million (EUR 9.7 million) to train 2,000 participants in fields like quantum computing, AI, cleantech, and bio-convergence over two years. The "Human Capital Fund for High-Tech" supports 20 programmes, including quantum training and AI projects for Druze community members²⁷. Digital transition efforts have been affected by the ongoing war, but the country continues investing in its high-tech sector. The Innovation Authority and the Ministry of Defence launched an ILS 10 million (EUR 2.7 million) programme to train and foster technological entrepreneurship among reserve and discharged soldiers²⁸. Another initiative is INQI – Israel's National Quantum Initiative (ILS 1.25 billion; EUR 338 million; 2020-2027), which encompasses investments in research centres and infrastructures at universities, start-up grants for newly recruited faculty, doctoral and postdoctoral fellowships, a competitive grant programme managed by the Israel Science Foundation, and initiatives to foster international and industrial collaborations²⁹.

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

Israel has not committed to an ERA Action under this priority area.

²⁴ https://www.gov.il/en/pages/waste_strategy_2030_circular_economy_2050

²⁵ https://www.gov.il/en/pages/ai_2023

²⁶ https://aiisrael.org.il/press_release/israel-establishes-national-expert-forum-to-guide-ai-policy-and-regulation/

²⁷ https://innovationisrael.org.il/en/press_release/nis-36-million-invested-in-cutting-edge-human-capital-programs/#

²⁸ https://innovationisrael.org.il/en/press_release/innovation-authority-and-ministry-of-defense-launch-a-unique-10-million-nis-program-for-training-and-promoting-technological-entrepreneurship-for-reserve-and-discharged-soldiers/

²⁹ <https://itrade.gov.il/hongkong/2023/08/18/israel-national-quantum-initiative-inqi/>

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

Israel has not committed to the ERA Action under this priority area.

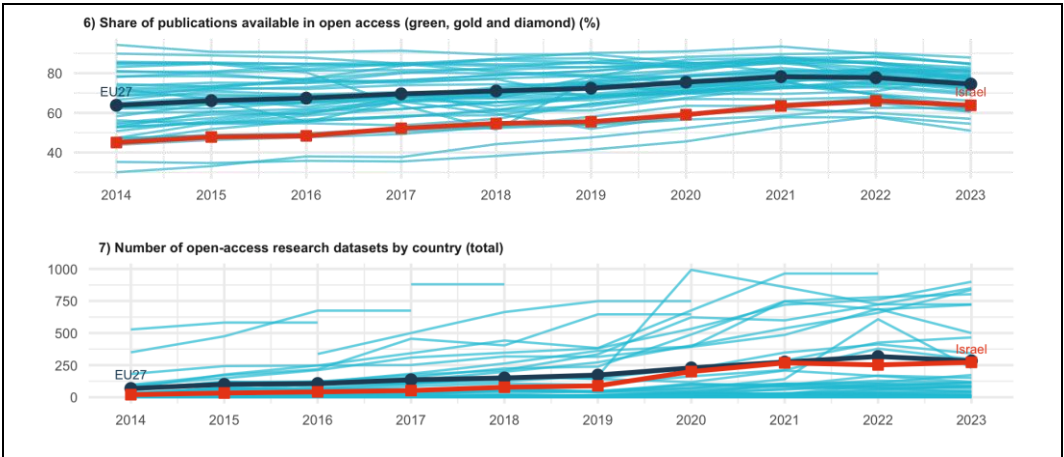
3. Contribution of ERA Actions to national performance in reaching ERA objectives

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

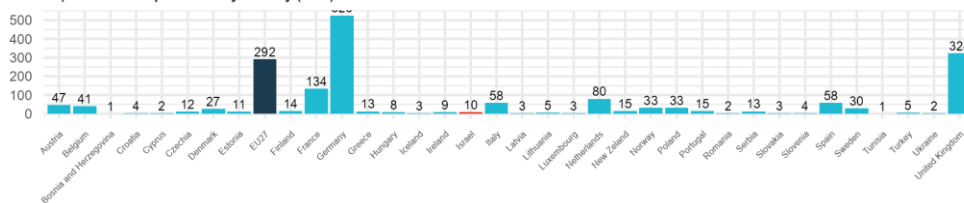
ERA Priority 1 is addressed through a range of initiatives focusing on ERA Actions 1 and 8 which aim to create structural reforms and other interventions. The implementation of these activities is largely on track and supported by dedicated investments. Improving performance in ERA Dashboard Indicators (6, 7, 13, 19, 25, 27, 29, 30) suggests initial progress in reaching the ERA objectives.

Regarding **ERA Action 1**, enable the open sharing of knowledge and the re-use of research outputs, including through the development of the European Open Science Cloud (EOSC), Israel has demonstrated significant strides across several key metrics between 2010 and 2024. In the area of **open science**, the **proportion of scientific publications available in open access** grew substantially, from 40 percent in 2009 to 63.78 percent by 2024. However, this share decreased from 66.04 percent in 2022, reflecting both progress and the need for continued efforts to enhance accessibility to research outputs as it is still below EU average. Similarly, **open access datasets** saw remarkable development, expanding from just 14 in 2010 to 272 in 2024. Notably, the number grew from 252 in 2022 to 272 in 2024, highlighting Israel's continued efforts to promote data transparency and availability for reuse in recent years. There is currently no available data for **ERA Action 8**. However, Israel is actively participating in several **research infrastructure projects** supported by Horizon Europe, highlighting its involvement within the European research infrastructure landscape.

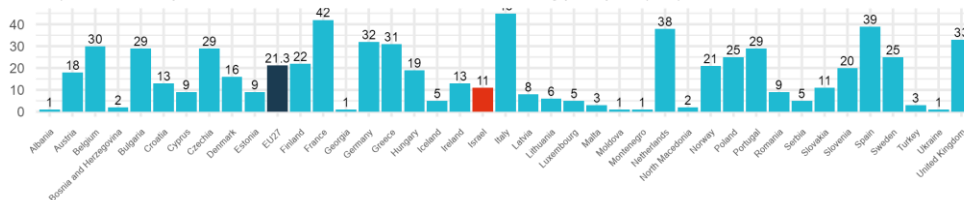
Figure 3-1 Indicators for ERA Priority 1



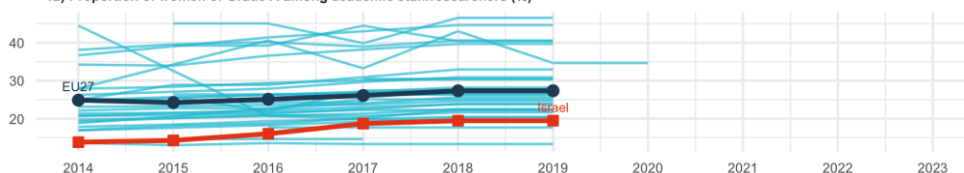
8) Number of repositories by country (total) - 2023



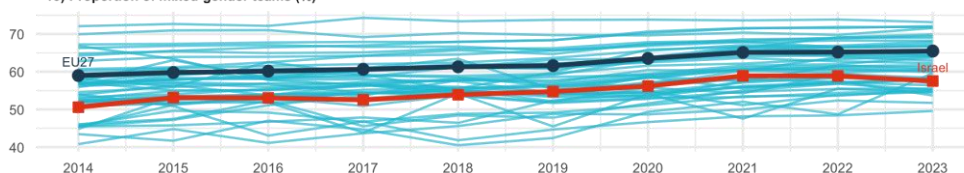
11) Number of European RIs in which a Member State or an Associated Country participates (total) - 2023



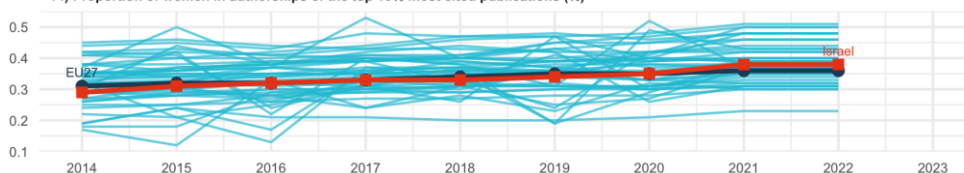
12) Proportion of women of Grade A among academic staff/researchers (%)



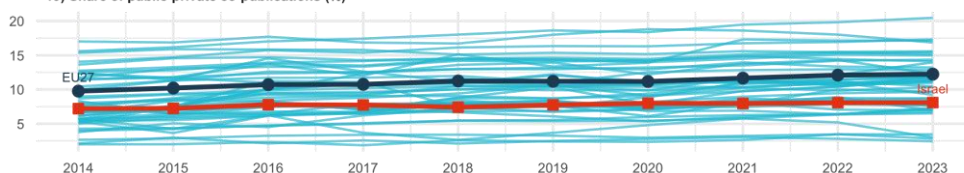
13) Proportion of mixed-gender teams (%)



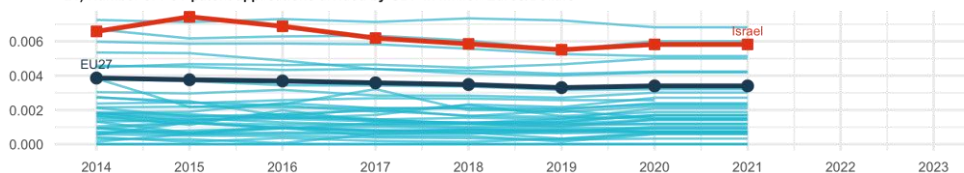
14) Proportion of women in authorships of the top 10% most cited publications (%)



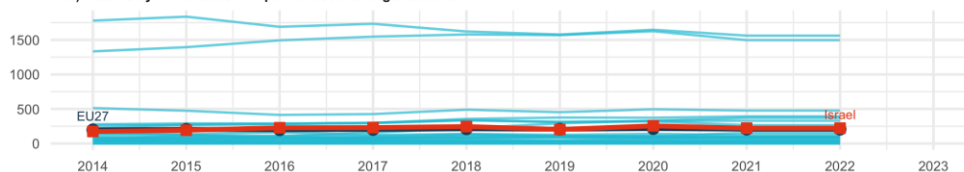
19) Share of public-private co-publications (%)



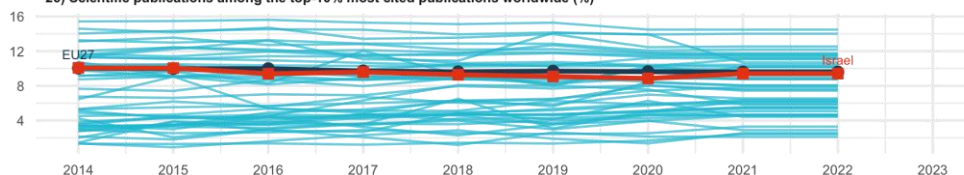
21) Number of PCT patent applications divided by GDP in million Euros/Dollars



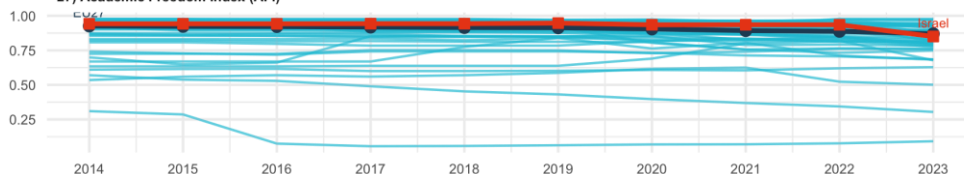
25) Patents by universities and public research organisations



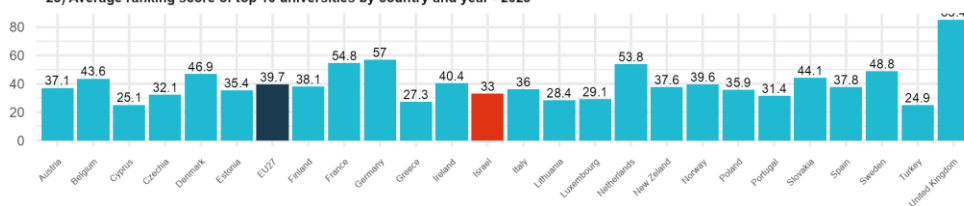
26) Scientific publications among the top-10% most cited publications worldwide (%)



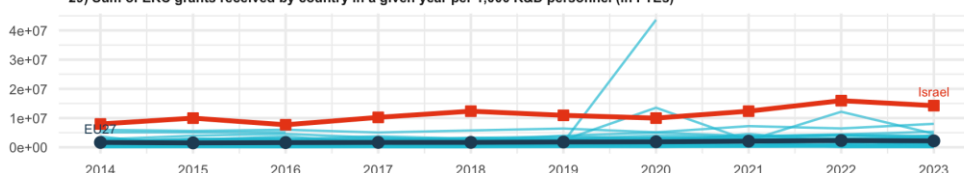
27) Academic Freedom Index (AFI)

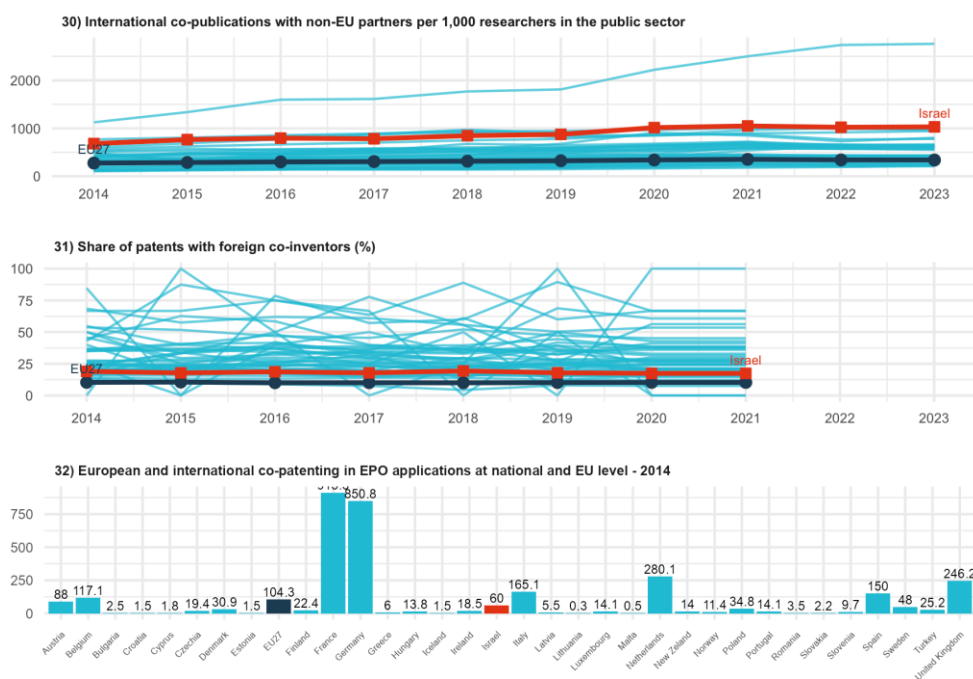


28) Average ranking score of top 10 universities by country and year - 2023



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





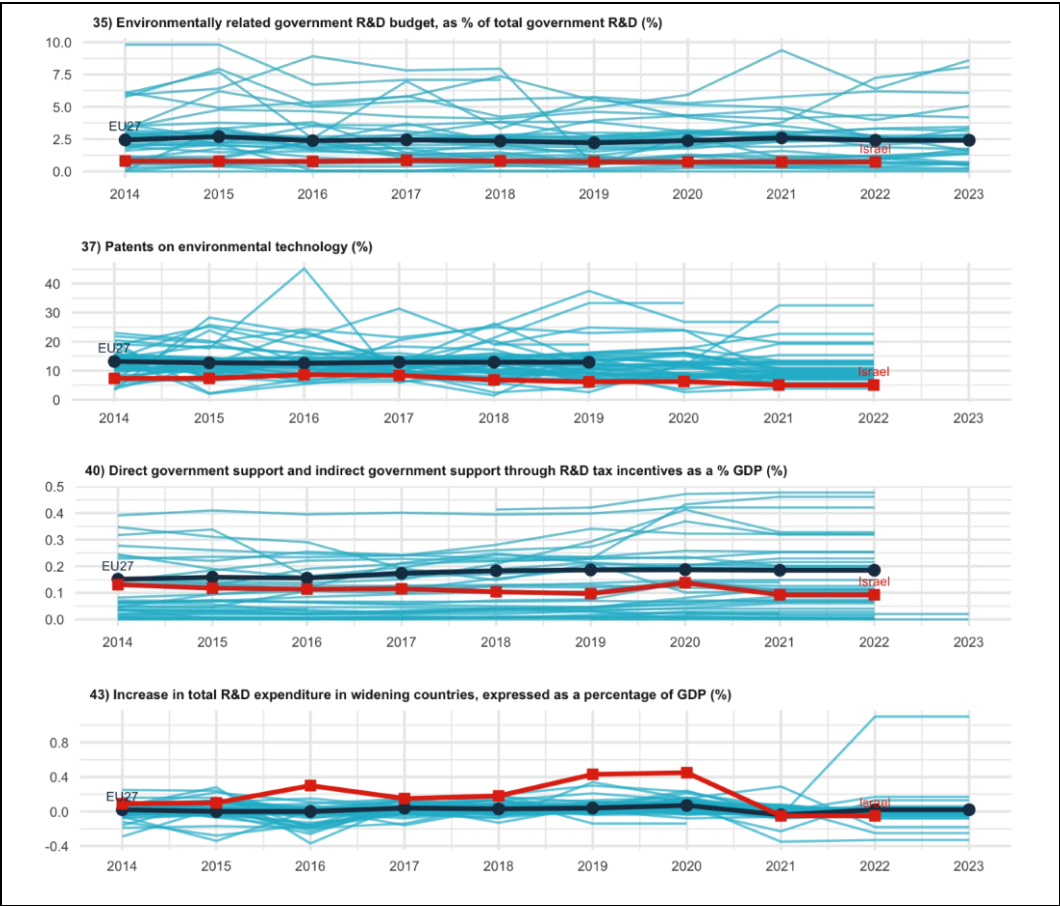
Source: Annex 1

Progress was also notable in **gender diversity within research teams**, with the proportion of mixed-gender teams improving from 49.47 percent in 2010 to 57.53 percent by 2024. However, this share stood at 58.87 percent in 2022, indicating a slight decline in recent years. The share of **public-private co-publications** rose from 7.62 percent in 2010 to 8.09 percent in 2024. The number of **patents filed by universities and public research organisations** increased from 168 in 2010 to 222 in 2024, reaching a peak of 256 in 2022. On an international scale, the **number of co-publications with non-EU partners** per 1,000 researchers in the public sector surged from 670.32 in 2010 to 1,030.09 in 2024, emphasising Israel's growing role in global scientific collaboration. The figure had however previously peaked at 1 048.9 in 2021. In parallel, the **sum of ERC grants** received by Israel per 1,000 R&D personnel rose from EUR 7.32 million in 2010 to EUR 15.96 million in 2022 and EUR 14.25 million in 2023. Overall, Israel's progress in ERA Priority 1 reflects a robust commitment to fostering open science, collaboration, and gender inclusivity in research.

Under **ERA Priority 2**, Israel's progress presents a mixed picture. **ERA Action 12** aims to accelerate the green and digital transition of Europe's key industrial ecosystems. However, it should be noted that data for most indicators from the past two years is not available. The **share of the government's R&D budget allocated to environmentally related research** has decreased slightly, from 0.87 percent in 2010 to 0.74 percent in 2023. This reduction suggests that while environmental concerns remain a part of the government's R&D agenda, the focus on green technologies may have diminished relative to other priorities. Similarly, the **percentage of patents in environmental technology** has dropped from 8.58 percent in 2010 to 5.06 percent in 2022. This decline highlights a potential slowdown in innovation within the environmental sector, which may reflect shifting technological priorities or challenges in the commercialisation of green technologies. Direct government support, including **R&D tax**

incentives, declined as a share of GDP from 0.1348 percent in 2010 to 0.0928 percent in 2022.

Figure 3-2 Indicators for ERA Priority 2



Source: 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 Israel and their effects on the national R&I system, including the quantitative performance in the ERA Dashboard.

Under ERA Priority 1, Israel's implementation of ERA Actions 1 and 8 closely aligns with national R&I priorities, emphasising high impact applied research and its translation into marketable innovations. With approximately 6 percent of its GDP invested in R&D – one of the highest rates globally – Israel demonstrates its dedication to fostering economic growth and maintaining global competitiveness. **ERA Action 1** (focusing on open knowledge sharing) aligns with Israel's innovation goals, especially in digital and green technologies. Israel

supports EU objectives for Open Science and Bar-Ilan University's leadership in OpenAIRE and ERA-NET projects highlight the dedication of institutions to transparency and collaboration.

ERA Action 8 (aimed at strengthening research infrastructure) also strongly aligns with Israel's national priorities, particularly its focus on bio-convergence, a key area of strategic importance. The Israel Innovation Authority's Boost Program supports deep-tech startups, R&D infrastructure, and high-tech ventures. Similarly, the Bio-Convergence Program, targeting bio-chips and diagnostic technologies, directly addresses Israel's health tech priority and also looking at green technologies. Additionally, the National AI Program's investment in research and infrastructure aligns with Israel's broader strategy to integrate cutting-edge technology into public and private sectors. These synergies underscore Israel's dedication to leveraging ERA initiatives to strengthen its leadership in global high-tech innovation. As investments are also made in human capital as part of the R&D infrastructure spending and new jobs are created in the emerging research facilities, Israel is also advancing ERA Action 4 "promote attractive research careers", even without a formal commitment.

As part of Israel's commitment to **ERA Priority 2**, **ERA Action 12** aligns with Israel's ambitions in renewable energy, bio-convergence, and digital transformation. Israel supports EU climate goals, addressing challenges like heat waves, advancing desalination and solar power, and enacting the Climate Law to reduce emissions and promote sustainability. Regarding the digital transformation, initiatives like the National AI Program and investments in AI and Quantum computing support ERA goals and Israel's innovation in food tech and blue tech. Potential conflicts may arise in areas like AI, where Israel's cybersecurity and defence focus where international collaboration is being balanced with national security needs. Nevertheless, Israel signed the Global AI treaty initiated by the Council of Europe. Similarly, open science under ERA Action 1 challenges Israel's high-tech sector by risking intellectual property protection, potentially limiting startup participation and innovation.

Despite high-tech's central role in the Israeli economy, investment in the sector remains lower than in the US, the UK, and South Korea. This limited state support, coupled with a high reliance on foreign investments, leaves the sector vulnerable, particularly in navigating periods of crisis. Israel's dependence on private and foreign funding for R&D is a significant weakness, further strained by recent geopolitical challenges, such as the Gaza conflict, which have redirected public resources. This dependence complicates efforts to establish a robust and resilient R&D ecosystem, leaving the country exposed to external risks³⁰.

Finally, despite the implementation of ERA Action, Israel's international collaboration efforts have faced challenges. In the wake of the ongoing Gaza conflict, as some European academic institutions have faced calls to distance themselves from Israeli researchers. Boycotts and disrupted collaborations have impacted Israel's involvement in Horizon Europe and other research consortia. Israeli researchers have faced challenges in attending conferences, publishing, and maintaining international partnerships³¹. Additionally, the proposed judicial reform in Israel, which reduces the judiciary's role in government oversight, has sparked concerns over academic freedom. Israel's ranking in the Academic Freedom Index dropped from the top 10 percent globally in 2023 to the top 30 percent³². Critics warn the reform could enable political interference in research, threatening academic independence. European institutions have expressed concerns and may distance themselves from Israeli academia.

³⁰ <https://innovationisrael.org.il/wp-content/uploads/2024/06/2024-Annual-Report-The-State-of-High-Tech.pdf>

³¹ <https://sciencebusiness.net/news/universities/academic-boycotts-over-gaza-war-jeopardise-israels-place-horizon-europe>

³² https://academic-freedom-index.net/research/Academic_Freedom_Index_Update_2024.pdf

Such perceptions of political compromise risk isolating Israeli researchers from global networks, impacting scientific and technological progress³³. Nonetheless, Israeli representatives expect that once the geopolitical situation calms down, talks and cooperation will continue.

5. Conclusions

Israel invests approximately 6 percent of its GDP in R&D, among the highest globally, emphasising high-impact applied research and innovation in areas like digital and green transitions. Despite being categorised as a *moderate innovator* in the European Innovation Scoreboard, Israel is a global start-up hub with strengths in cybersecurity, AI, fintech, health tech, agrifood tech, and space tech, supported by the Israel Innovation Authority and national R&D priorities in Bio-Convergence, Food tech, Blue Tech, Renewable Energies, and Space Industry.

Regarding ERA Priority 1 Israel has made progress in promoting open science and knowledge sharing, aligning with European initiatives like the European Open Science Cloud (EOSC) through active participation in ERA-NET projects and Horizon Europe. Despite challenges, including political tensions and concerns over academic freedom, Israel continues to contribute to European research efforts and strengthens its research infrastructure through investments such as the Israel Innovation Authority's Boost Program and the National AI Program. These initiatives aim to foster innovation, enhance collaboration, and bolster Israel's leadership in high-tech and scientific fields. Israel has made notable progress in advancing ERA priority 1 through policies and investments aimed at improving research collaboration, open science, and the sustainability of research infrastructures. While key metrics show strong growth in areas like R&D expenditure and global scientific collaboration, challenges such as fluctuations in public funding and international tensions have impacted the country's performance in certain ERA actions, highlighting areas that require continued attention to ensure long-term success.

In tune with ERA Priority 2, Israel is advancing both the green transition and digital transformation through key initiatives. The country has passed a Climate Law aiming for net-zero emissions by 2050 and introduced a new environmental licensing law to reduce pollution, alongside fostering climate tech innovation. On the digital front, Israel is promoting AI development with a comprehensive national policy, while also investing in training for high-tech sectors to ensure continued leadership in innovation. However, recent trends suggest a decline in government investment and innovation in environmental technologies. The reduction in R&D budget allocation for green technologies and the decline in environmental patents highlight the need for renewed focus and investment to accelerate the twin transition.

Israel's implementation of ERA Actions 1 and 8 aligns closely with its national R&I priorities, emphasising high-impact applied research, open knowledge sharing, and strengthening research infrastructure, particularly in bio-convergence and high-tech innovation. ERA Action 12 supports Israel's green and digital transition by promoting sustainability through climate laws, waste strategies, and innovative climate tech startups, while enhancing digital transformation with investments in AI, quantum computing, and digital payment systems.

³³ <https://www.coimbra-group.eu/showing-strong-solidarity-with-our-israeli-colleagues/>

6. References

Academic Freedom Index (2024): Update 2024, available at: https://academic-freedom-index.net/research/Academic_Freedom_Index_Update_2024.pdf

Bar-Ilan University (2024): Open Access Week 2024, available at: <https://www.biu.ac.il/en/article/482701>

Bar-Ilan University (2024): Open Door to Open Science (Open Access), available at: <https://lib.biu.ac.il/en/node/3244>

Bundesministerium für Bildung und Forschung (2025): ERA-NET NEURON 2023 - 2026: Förderung von multinationaler und translationaler Forschung zu zerebrovaskulären Erkrankungen, einschließlich Mikroangiopathien und Fehlfunktionen der Hirnschranken , available at: <https://www.gesundheitsforschung-bmbf.de/de/era-net-neuron-2023-2026-forderung-von-multinationaler-und-translationaler-forschung-zu-16418.php>

Cogeril (2025): Israel Innovation Authority will invest in IT infrastructure to serve companies and researchers, available at: <https://www.cogeril.de/en/news-and-events/news/iaa-invests-in-it-infrastructure/>

Coimbra Group (2023): Showing strong solidarity with our Israeli colleagues, available at: <https://www.coimbra-group.eu/showing-strong-solidarity-with-our-israeli-colleagues/>

Council for Higher Education (2019): Women in Academia, available at: <https://che.org.il/en/%D7%A0%D7%A9%D7%99%D7%9D-%D7%AA%D7%97%D7%95%D7%9E%D7%99-%D7%9C%D7%99%D7%9E%D7%95%D7%93-%D7%9C%D7%AA%D7%95%D7%90%D7%A8-%D7%A8%D7%90%D7%A9%D7%95%D7%9F/>

EFSA (2025): COST – European Cooperation in Science & Technology, available at: <https://www.efsa.europa.eu/en/funding/programmes/cost-european-cooperation-science-technology>

European Commission (2022). European Innovation Scoreboard 2022, available at: https://research-and-innovation.ec.europa.eu/system/files/2022-09/ec_rtd_eis-2022-methodology-report.pdf

European Commission (2024): Third meeting of the EU-Israel Joint Research and Innovation Committee under Horizon Europe, available at: https://research-and-innovation.ec.europa.eu/news/all-research-and-innovation-news/third-meeting-eu-israel-joint-research-and-innovation-committee-under-horizon-europe-2024-05-06_en

European Commission (2025): Israel: Policy Background, available at: https://research-and-innovation.ec.europa.eu/strategy/strategy-research-and-innovation/europe-world/international-cooperation/association-horizon-europe/israel_en

ISERD (2025): ISERD- Israel-Europe Research & Innovation Directorate, available at: <https://innovationisrael.org.il/iserd/about-iserd/>

Israel Innovation Authority (2023): NIS 36 million invested in Cutting-Edge Human Capital Programs, available at: https://innovationisrael.org.il/en/press_release/nis-36-million-invested-in-cutting-edge-human-capital-programs/#

Israel Innovation Authority (2023): NIS 113 million to Establish Research and Development Infrastructure Center for Bio-Chips-Based Bio-Devices, available at: https://innovationisrael.org.il/en/press_release/nis-113-million-to-establish-research-and-development-infrastructure-center-for-bio-chips-based-bio-devices/

Israel Innovation Authority (2024): Innovation Authority and Ministry of Defense Launch a Unique 10 Million NIS Program for Training and Promoting Technological Entrepreneurship for Reserve and Discharged Soldiers, available at: https://innovationisrael.org.il/en/press_release/innovation-authority-and-ministry-of-defense-launch-a-unique-10-million-nis-program-for-training-and-promoting-technological-entrepreneurship-for-reserve-and-discharged-soldiers/

Israel Innovation Authority (2024): <https://innovationisrael.org.il/wp-content/uploads/2024/06/2024-Annual-Report-The-State-of-High-Tech.pdf>, available at: <https://innovationisrael.org.il/wp-content/uploads/2024/06/2024-Annual-Report-The-State-of-High-Tech.pdf>

Israel Innovation Authority (2025): About Israel Innovation Authority ,available at: <https://innovationisrael.org.il/en/the-israel-innovation-authority/>

Ministry of Agriculture and Food Security (2024): The first step in the formulation of the National Plan for Food Security 2050 - is underway, available at: <https://www.gov.il/en/pages/firststepformulatingnationalfoodsecurityplan2050>

Ministry of Economy & Industry (2023): Unveiling the Future: Israel's Quantum Leap with the National Quantum Initiative (INQI), available at: <https://itrade.gov.il/hongkong/2023/08/18/israel-national-quantum-initiative-inqi/>

Ministry of Environmental Protection (2022): Environmental licensing reform is underway, available at: https://www.gov.il/en/pages/environmental_licensing_reform

Ministry of Environmental Protection(2023): Israeli Climate Law: Minister of Environmental Protection Idit Silman led to agreements with the Ministry of Finance and will submit the law for approval tomorrow in a special meeting of the Ministerial Committee for Legislative Affairs, available at: <https://www.gov.il/en/pages/israeli-climate-law>

Ministry of Environmental Protection (2024): Waste strategy 2030, circular economy 2050, available at: https://www.gov.il/en/pages/waste_strategy_2030_circular_economy_2050

Ministry of Finance (2024): The government approved: a "boost" package for Israeli high-tech, available at: https://www.gov.il/en/pages/press_15012024_b

Ministry of Innovation, Science & Technology (2022): Recommendation on Israel's National Civilian R&D Priority Areas, available at: https://www.gov.il/Blob-Folder/news/most_news20220907/en/Recommendation%20on%20Israel%27s%20National%20Civilian%20R&D%20Priority%20Areas.pdf

Ministry of Innovation, Science & Technology (2023): Israel's Policy on Artificial Intelligence Regulation and Ethics, available at: https://www.gov.il/en/pages/ai_2023

Ministry for Social Equality (2017): The Digital Israel National Initiative: The National Digital Program of the Government of Israel ,available at: <https://cdn-assets.inwink.com/b0269dea-af7b-4460-b29a-c40b9941c4c5/3ffb84c-7f14-455f-b4de-bb3629aa9c9a>

M-ERA.NET (2025): IL: Israel IIA - National Technological Innovation Authority, available at: <https://www.m-era.net/about/m-consortium/israel>

Science Business (2024): Academic boycotts over Gaza war jeopardise Israel's place in Horizon Europe, available at: <https://sciencebusiness.net/news/universities/academic-boycotts-over-gaza-war-jeopardise-israels-place-horizon-europe>

Startup Nation Central (2024): Israeli Tech Q1 2024: Resilient Growth in a Challenging Landscape, available at: <https://startupnationcentral.org/hub/blog/israel-tech-q1-2024-resilient-growth/>.

Statista (2025). Leading countries by research and development (R&D) expenditure as share of gross domestic product (GDP) worldwide in 2022, available at: <https://www.statista.com/statistics/732269/worldwide-research-and-development-share-of-gdp-top-countries/>

The Israeli Association for Ethics in Artificial Intelligence (2024): Israel Launches Second Phase of National AI Program with \$132M Investment in R&D Infrastructure, available at: <https://iaeai.org/tpost/mrg6mi2bh1-israel-launches-second-phase-of-national>

The Israeli National AI Program (2024): Israel establishes national expert forum to guide AI policy and regulation, available at: https://aiisrael.org.il/press_release/israel-establishes-national-expert-forum-to-guide-ai-policy-and-regulation/

The Knesset Research and Information Center (2018): Representation of Women in the Israeli Academia, available at: <https://m.knesset.gov.il/EN/activity/mmm/me040618.pdf>

Times of Israel (2024): Knesset passes 1st reading of climate bill without any clear budgeting, available at: <https://www.timesofisrael.com/knesset-passes-1st-reading-of-climate-bill-without-any-mention-of-budgeting/>

Annex 1 – 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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