



ECONOMIST
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Resilient Food Systems Index

Europe Report

Supported by

Cargill

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About the report

Economist Enterprise's inaugural Resilient Food Systems Index (RFSI) builds on more than a decade of research into the architecture that underpins how the world produces food and what it eats, offering a systemic diagnostic of how food systems perform under stress. Supported by Cargill, the index evaluates the resilience of food systems in 60 countries spread across six regions, evaluating performance across four interdependent pillars: affordability; availability; quality and safety; and climate risk responsiveness. It draws on a dynamic benchmarking model comprising 71 qualitative and quantitative indicators, informed by an extensive literature review, data audit and expert consultation.

Informed by our analysis of the index data, extensive literature review, and in-depth regional expert interviews, this paper presents the regional key findings for Europe. Within the RFSI, 14 countries

make up Europe. These are: Belgium, the Czech Republic, Denmark, France, Germany, Greece, Hungary, Italy, the Netherlands, Poland, Portugal, Romania, Spain and the United Kingdom.

Economist Enterprise is solely responsible for the views expressed in this report, and the content does not necessarily reflect the perspectives of the sponsor.

Economist Enterprise would like to extend its thanks to the following interviewees for their time and insights:

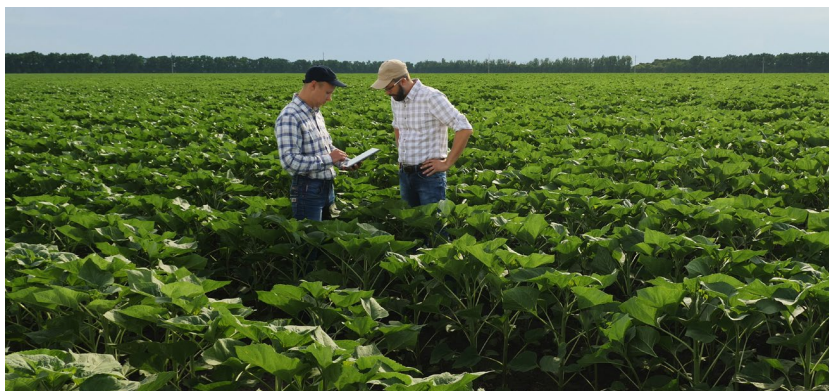
- **Richard Zaltzman**, chief executive, EIT Food
- **Arnaud Petit**, executive director, International Grains Council

This report was produced by a team of Economist Enterprise researchers including Pratima Singh, Apurva Kothari and Gillian Parker.



Executive summary

- **Accounting for more than one-fifth of global food exports, Europe¹ plays an outsized and influential role in the global food system.** It ranks as one of the top-performing regions on the Resilient Food Systems Index (RFSI), underpinned by high scores on affordability (81.26/100) and quality and safety (80.26), positioning it as a strong anchor in the global food system.
- **Despite global food price inflation remaining well above pre-2020 levels, the region maintains reliable access to nutritious, affordable food for most consumers.** This reflects policy choices and market design that favour affordability and nutrition quality, and the region's self-sufficiency in several agri-food products. Europe is also the strongest-performing region on open and diverse agricultural trade (73.79). To sustain these gains, it needs to work with global agri-food partners to reduce regulatory divergence on non-tariff measures² and make food import channels efficient.
- **High prices for critical farm inputs, increasing climate-risk exposure and limited investment in research and development (R&D) have weakened agricultural productivity and increased year-on-year yield volatility in the region.** To maintain the long-term resilience of its food system in the face of these pressures, Europe needs to use inputs more efficiently, improve disaster preparedness, make agricultural R&D easier to finance and test for the private sector, and help farmers to diversify income, access credit and spread risk better.
- **High-impact, quantified climate ambitions are needed to deliver food-system-wide climate resilience.** Targeting both climate mitigation and adaptation, 12 of the 14 countries in Europe provide strong support for sustainable farming practices through regulation, financial incentives and technical assistance. However, these efforts are yet to translate into food-system-wide climate resilience, as the region falls short of setting high-impact, quantified climate ambitions for the agricultural sector.
- **Closing current gaps in Europe's food-system resilience will require value-chain-wide action.** Producers, processors, retailers, financiers, technology providers and policymakers each hold part of the answer, whether by upgrading infrastructure, strengthening early-warning systems, supporting sustainable production or diversifying farmer incomes. Public policy can set the direction, but only private investment and durable collaboration will deliver it.



¹ Across the report, Europe refers to the 14 countries of the region covered in Resilient Food Systems Index. These are: Belgium, the Czech Republic, Denmark, France, Germany, Greece, Hungary, Italy, the Netherlands, Poland, Portugal, Romania, Spain and the United Kingdom.

² These include certification requirements, inspection procedures and product standards often imposed via sanitary and phyto-sanitary measures and technical barriers to trade.

Introduction

The RFSI assesses the resilience of food systems in 60 countries across six regions, scoring each on four interdependent pillars: affordability, availability, quality and safety, and climate risk responsiveness.³ This report focuses on the 14 European countries within the index: Belgium, the Czech Republic, Denmark, France, Germany, Greece, Hungary, Italy, the Netherlands, Poland, Portugal, Romania, Spain and the United Kingdom. Together they are Europe-14, or simply Europe; Europe-13 refers to countries in the European Union (all but the UK).

Europe plays an outsized and influential role in the global food system. Europe-14 produces just 7.3% of the world's food⁴ yet accounts for more than 20% of global exports (Figure 1). How the region performs shapes not only its own food access but also the resilience of every country that depends on European supply. And it performs well. Europe ranks as one of the strongest region in the index,⁵ lifted by high scores on affordability (81.26/100) and quality and safety (80.26), which secures reliable access to nutritious, affordable food for most consumers.

Figure 1: Regional shares⁶ of global food production and exports, by quantity

Measured across the 60 countries covered in the RFSI, averaged by region

Region	Export share	Production share
Latin America and the Caribbean	21.0%	16.0%
Europe-14	20.7%	7.3%
Asia-Pacific	20.1%	45.2%
North America	16.0%	9.0%
Middle East and North Africa	2.8%	2.9%
Sub-Saharan Africa	1.5%	5.2%

Source: FAOSTAT, Economist Enterprise calculations (See footnote 3)

3 The index draws on a dynamic benchmarking model of 71 qualitative and quantitative indicators, informed by an extensive literature review, data audit and expert consultation.

4 The world's food refers to agri-food products: it includes all crop and livestock products measured in tonnes across 197 countries, as reported by FAOSTAT. To account for year-to-year production volatility, annual figures are averaged over 2022–24 (latest three-year period available). Crops and livestock products. UN Food and Agriculture Organisation (FAO). Available at: <https://www.fao.org/faostat/en/#data/TCL>

5 Europe (70.74) ranks as the second-strongest region on the RFSI, trailing North America (72.69) by just two points on the overall score.

6 The combined production and export shares of all regions do not sum to 100% because they include only the food produced and exported by the 60 countries covered in the RFSI, rather than all 197 countries. Each country's individual production and export share, however, is calculated relative to the total food produced and exported across all 197 countries.



Yet these strengths rest on foundations under growing strain. Climate volatility is already denting output, with droughts cutting yields in key producers and pushing up staple prices.⁷ Supply chains remain exposed to energy and input costs that can move sharply with geopolitical events. Policy has also become more

contested, as governments weigh environmental goals against food prices and farm incomes.⁸ This report traces these strains across three fronts—affordability, agricultural productivity and climate ambition—drawing out lessons on how to strengthen the resilience of Europe's food systems.

⁷ Five charts: How climate change is driving up food prices around the world. Carbon Brief. August 2024. Available at: <https://www.carbonbrief.org/five-charts-how-climate-change-is-driving-up-food-prices-around-the-world/>

⁸ A critical review of EU agri-food policy impacts. D. Borniotto et al. Food Policy. June 2026. Available at: <https://www.sciencedirect.com/science/article/pii/S0306919226000576>

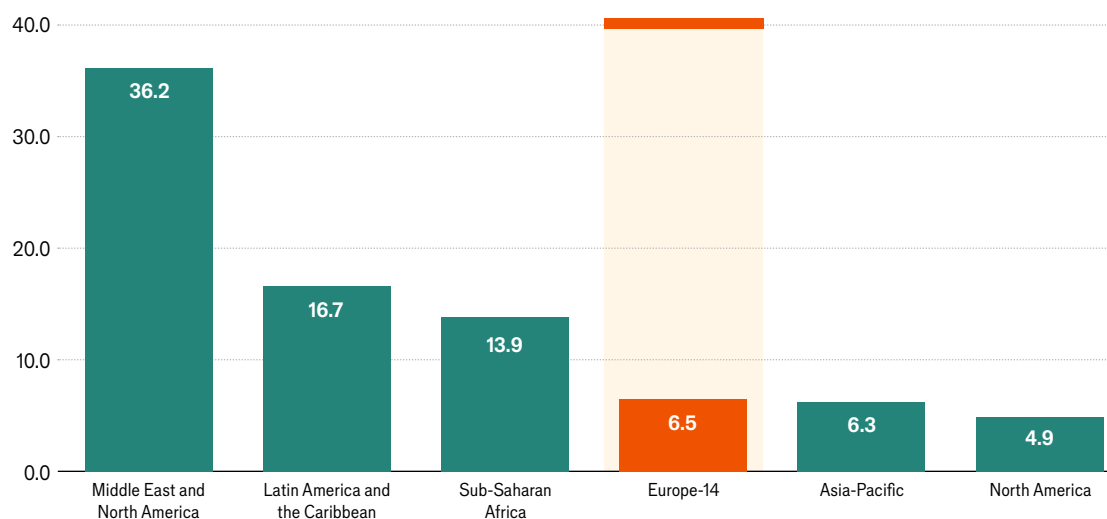
Affordable abundance holds, even under pressure

Food prices have risen almost everywhere, and Europe is no exception. Since the pandemic, disrupted supply chains, energy shocks and extreme weather have kept food inflation well above its pre-2020 levels. Across the 60 countries covered by the RFSI, average annual food price inflation has more

than tripled, rising from 4.3% before the pandemic⁹ to 13.9% since 2020.¹⁰ Europe-14 has held its ground better than most. Between April 2020 and March 2025, increases in average food costs were comparatively modest, keeping staples within reach for most consumers (Figure 2).

Figure 2: Average annual change (%) in food costs (2020-25)

By region



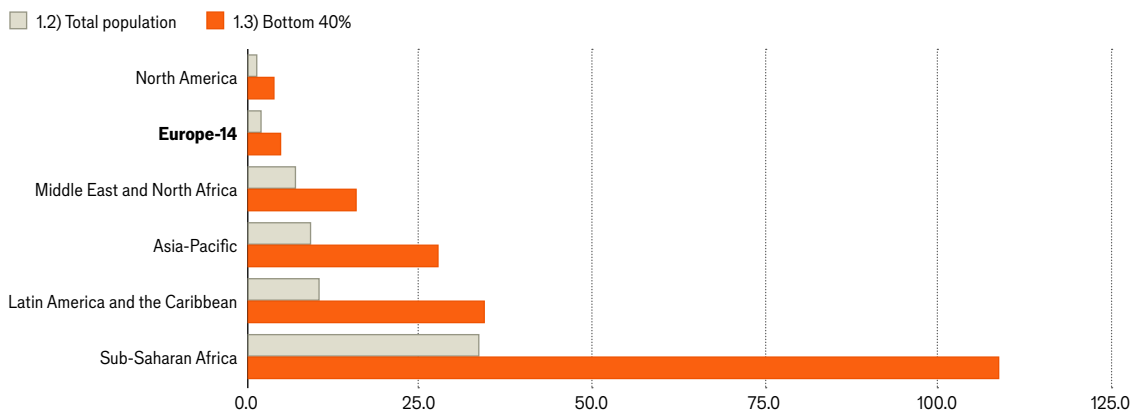
Source: Derived from indicator 1.1: Change in average food costs. Resilient Food Systems Index, Economist Enterprise, 2026

⁹ Average annual inflation between April 2015 and March 2020. Derived from indicator 1.1: Change in average food costs.

¹⁰ Derived from indicator 1.1: Change in average food costs.

Figure 3: Affordability of a healthy diet, by region

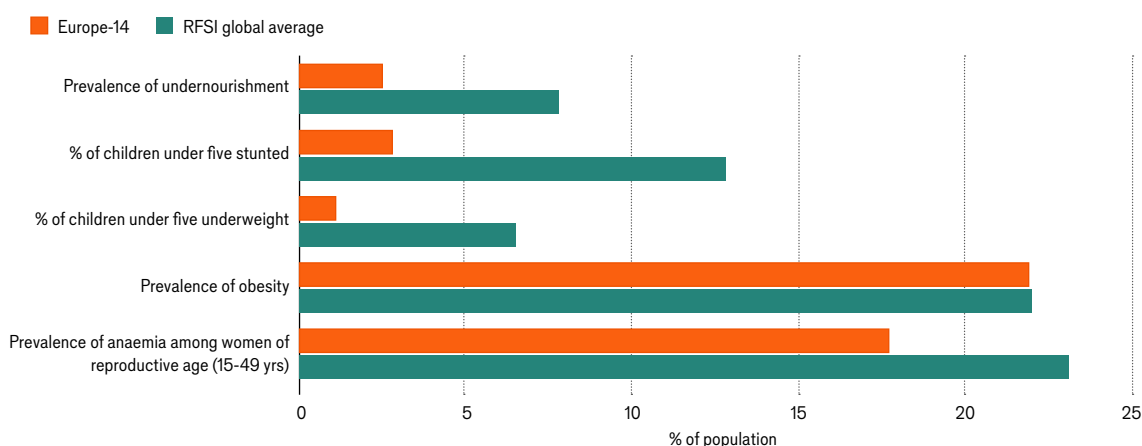
Cost of a healthy diet as a % of daily mean GDP per capita (2022-2024)



Source: Derived from indicators 1.2: Affordability of a healthy diet and 1.3: Affordability of a healthy diet to bottom 40%. Resilient Food Systems Index, Economist Enterprise, 2026.

Figure 4: Diverse and nutritious diets deliver better health outcomes in Europe-14

Average performance on select nutrition indicators, Europe-14 vs Global average



Source: Derived from index background indicators. Resilient Food Systems Index, Economist Enterprise, 2026.

Access to a healthy diet has largely held, even for lower-income groups, reflecting both policy choices and market design that favour affordability and nutrition quality (Figure 3). All 14 countries mandate nutrition labelling,¹¹ and governments deploy a range of further tools to support healthier diets. These vary by market and include: fiscal incentives, such as reduced VAT on fruit and vegetables;¹² school-based

schemes that encourage balanced eating from an early age;¹³ limits on junk food advertising during prime-time television hours and online;¹⁴ and taxes on foods high in sugar, salt and fat.¹⁵ These interventions may have nudged diets in a healthier direction, with better health outcomes in Europe than in many peer economies (Figure 4). The region scores 77.51 on dietary diversity,¹⁶ 18 points above the global average.

11 Europe scores 100 for index indicator 3.2.3: Nutrition labelling.

12 European VAT rates. EAS. Accessed on 29 April, 2026. Available at: <https://help.easproject.com/hc/en-gb/articles/5025537539487-European-VAT-rates>

13 EU School scheme explained. European Commission. Accessed on 29 April, 2026. Available at: https://agriculture.ec.europa.eu/common-agricultural-policy/market-measures/school-scheme-explained_en

14 Landmark junk food ad ban to protect kids' health. Gov.UK. January 2026. Available at: <https://www.gov.uk/government/news/landmark-junk-food-ad-ban-to-protect-kids-health>

15 Study on Health Taxes from an EU Perspective. European Commission. May 2025. Available at: https://taxation-customs.ec.europa.eu/news/study-health-taxes-eu-perspective-2025-05-16_en

16 Indicator 3.1: Dietary diversity



Open trade, steady supply

Delivering enough food is not, for now, a challenge for Europe, which scores 81.16 on sufficiency of supply.¹⁷ Intra-EU trade and deepening integration with the UK together underpin self-sufficiency in several agri-food products, and diversified import partners and household-level buffers from relatively well-funded social safety programmes cushion the population against shortfalls when supply tightens.^{18,19}

Europe is the strongest performer globally on open and diverse agricultural trade (73.79),²⁰ reflecting both the scale of its trade and the flexibility of its import and export networks.^{21,22} Over the past decade the region has broadened trade across partners and products, reducing reliance on any single supplier or destination and letting flows adjust when conditions change.^{23,24} Notably, Europe-14's imports²⁵ show higher diversification than the top ten global importers²⁶ of agri-food products (Figure 5).

¹⁷ Indicator 2.7: Sufficiency of supply

¹⁸ Commission acts for global food security and for supporting EU farmers and consumers. European Commission, March 2022. Available at: https://ec.europa.eu/commission/presscorner/detail/en/ip_22_1963

¹⁹ United Kingdom Food Security Report 2021: Theme 2: UK Food Supply Sources. Gov.UK. 2021. Available at: <https://www.gov.uk/government/statistics/united-kingdom-food-security-report-2021/united-kingdom-food-security-report-2021-theme-2-uk-food-supply-sources>

²⁰ Indicator 1.4) Agricultural trade

²¹ The import trade flow tracked by the indicator 1.4.3: Import partner diversification is not specific to agri-food sector imports. It covers imports across all sectors of the economy, therefore serving as a proxy metric of import partner diversification for the agri-food sector. The indicator is derived from UNCTAD's Theil import indices. The Theil import indices measure import concentration in the basket of imported products (excluding services) and in the set of import markets of an individual economy or a group of economies. They are derived from all bilateral import flows of all individual products (at the SITC, Rev.3, 3-digit level) from the UNCTAD Merchandise Trade Matrix and are further decomposed additively into two sub-indices: one to measure product concentration and another to measure market (per product) concentration; that is, the two components add up to the overall Theil import concentration index. Higher values on the overall Theil import index represent a higher degree of import concentration or a lower import diversification. <https://unctadstat.unctad.org/datacentre/reportInfo/US.MerchTheilIndices>

²² The export trade flow tracked by the indicator 1.4.4: Export partner diversification is not specific to agri-food sector exports. It covers exports across all sectors of the economy, therefore serving as a proxy metric of export partner diversification for the agri-food sector. The indicator is derived from UNCTAD's Theil export indices. The Theil export indices measure export concentration in the basket of exported products (excluding services) and in the set of export markets of an individual economy or a group of economies. They are derived from all bilateral export flows of all individual products (at the SITC, Rev.3, 3-digit level) from the UNCTAD Merchandise Trade Matrix and are further decomposed additively into two sub-indices: one to measure product concentration and another to measure market (per product) concentration; that is, the two components add up to the overall Theil export concentration index. Higher values on the overall Theil export index represent a higher degree of export concentration or a lower export diversification. <https://unctadstat.unctad.org/datacentre/reportInfo/US.MerchTheilIndices>

²³ EU agri-food exports reach record levels of €235.4 billion in 2024. European Commission. April 2025. Available at: https://agriculture.ec.europa.eu/media/news/eu-agri-food-exports-reach-record-levels-eu2354-billion-2024-2025-04-08_en

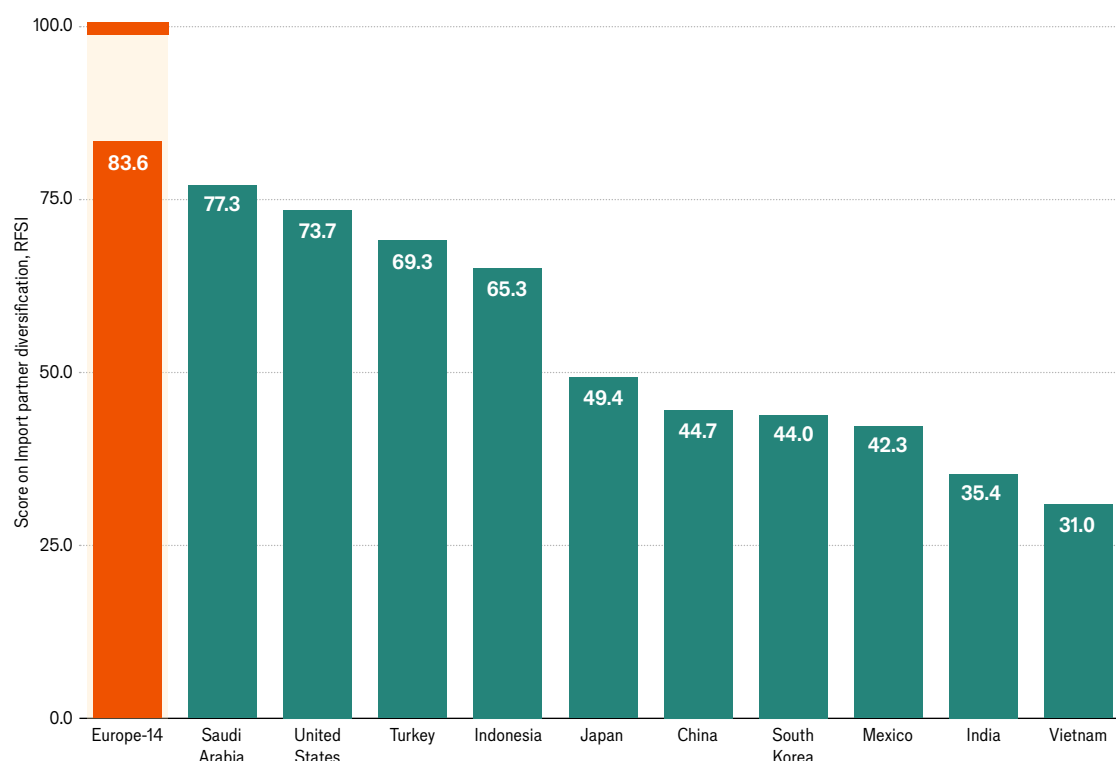
²⁴ Monitoring Agri Trade Policy. European Commission, October 2023. Available at: https://agriculture.ec.europa.eu/document/download/0e9e4948-8398-41fa-a209-23373cee3324_en?filename=monitoring-agri-food-trade-diversification-2012-22_en.pdf

²⁵ The import trade flow tracked by the indicator 1.4.3: Import partner diversification is not specific to agri-food sector imports. It covers imports across sectors of the economy, therefore serving as a proxy metric of import partner diversification for the agri-food sector.

²⁶ Refers to the top ten global importers of agri-food products by quantity included in the RFSI, excluding the Europe-14 countries. Agri-food products include all crop and livestock products measured in tonnes across 197 countries, as reported by FAOSTAT. To account for year-to-year production volatility, annual import figures are averaged over 2022–24 (latest three-year period available). Crops and livestock products. UN Food and Agriculture Organisation (FAO). Available at: <https://www.fao.org/faostat/en/#data/TCL>

Figure 5: Overall import partner diversification*

Europe-14 vs Top-ten global importers of agri-food products, by quantity



Source: FAOSTAT, Indicator 1.4.3: Import partner diversification, Resilient Food Systems Index, Economist Enterprise, 2026.

*Note: The Import partner diversification indicator is not specific to agri-food imports. It covers imports across all sectors of the economy, therefore serving as a proxy metric of import partner diversification for the agri-food sector. The indicator is derived from UNCTAD's Theil import indices, which measure import concentration in the basket of imported products (excluding services) and in the set of import markets of an individual economy or a group of economies.

That flexibility has proved its worth during disruption and helps to contain costs and expand the range of products on offer, supporting both affordability and dietary diversity.

Sustaining these gains depends not only on the breadth of Europe-14's trading relationships but also on how smoothly goods move across them. Increasingly, the friction in agri-food trade comes not from tariffs but from non-tariff measures, including the certification requirements, inspection procedures and product standards that imports

must meet.²⁷ These rules serve legitimate purposes, but when partners apply them in divergent or duplicative ways, they raise costs and cause delays without strengthening the protection the measures are meant to provide.²⁸ Keeping import channels open and efficient therefore does not mean weakening safety, quality or sustainability standards. Europe-14 can instead work with global agri-food partners to reduce unnecessary divergence in non-tariff measures, simplify certification and help exporters to meet EU requirements.

27 NTMs are often imposed via sanitary and phyto-sanitary measures and technical barriers to trade. Gourdon J, Stone S, van Tongeren F. Non-tariff measures in agriculture. OECD Food, Agriculture and Fisheries Papers. November 2020. 147. Available at: <https://doi.org/10.1787/819333f03-en>; Global Trade Update (May 2026): Invisible barriers – the costs of non-tariff measures. UNCTAD. May 2026. Available at: <https://unctad.org/publication/global-trade-update-may-2026-invisible-barriers-costs-non-tariff-measures>

28 Gourdon J, Stone S, van Tongeren F. Non-tariff measures in agriculture. OECD Food, Agriculture and Fisheries Papers. November 2020. 147. Available at: <https://doi.org/10.1787/819333f03-en>; Promoting food security through non-tariff measures: From costs to benefits. UN Conference on Trade and Development. 2024. Available at: <https://unctad.org/system/files/official-document/ditctab2023d6.en.pdf>; Non-tariff measures and deep regulatory integration in the African Continental Free Trade Area. UN Conference on Trade and Development. 2024. Available at: <https://unctad.org/system/files/official-document/ditctab2024d4.en.pdf>; Samad NSA, Sarmidi T, Shukor MS, et al. The Impact of The Regulatory Distance Index of Non-Tariff Measures on AgriFood in Apec Countries. Jurnal Ekonomi Malaysia. 2025. 59;1. Available at: https://www.ukm.my/jem/wp-content/uploads/2025/05/jeko_591-4.pdf

Productivity strains threaten long-term resilience

Europe-14's investments in the early 2000s^{29,30} on basic farm enablers and agri-tech built a strong farm productivity baseline. Reliable electricity is now near universal (90.73)³¹, internet access scores 92.80³² and extension and information services 76.79.³³ Strong public-sector support for adopting mature farming technologies reinforced these foundations (97.62).³⁴ Together, they helped to offset a shrinking agricultural labour force and drove faster output growth in the decade that followed. Between 2005

and 2015, pre-Brexit, agricultural output per farm rose by around 6% a year.^{35,36} Since then, productivity gains have weakened.

Only three of the index's European countries recorded faster average annual productivity growth in 2018-22 than in the preceding five years (see Figure 6). Output has also become less stable. Apart from North America, Europe has experienced higher year-on-year volatility in agricultural production than any other region in the index (see Figure 7).



29 Council Regulation (EC) No 1257/1999 of 17 May 1999 on support for rural development from the European Agricultural Guidance and Guarantee Fund (EAGGF) and amending and repealing certain Regulations. EU. Available at: <https://eur-lex.europa.eu/eli/reg/1999/1257/2004-05-01/>

30 Commission Communication of 13 March 2001 on eEurope 2002: Impact and Priorities A communication to the Spring European Council in Stockholm, 23-24 March 2001. EU. Available at: <https://eur-lex.europa.eu/legal-content/EN/TXT/?uri=LEGISSUM:l24226a&frontOfficeSuffix=%2F>

31 Indicator 2.1.2: Reliable access to electricity

32 Indicator 2.1.5: Access to internet at home

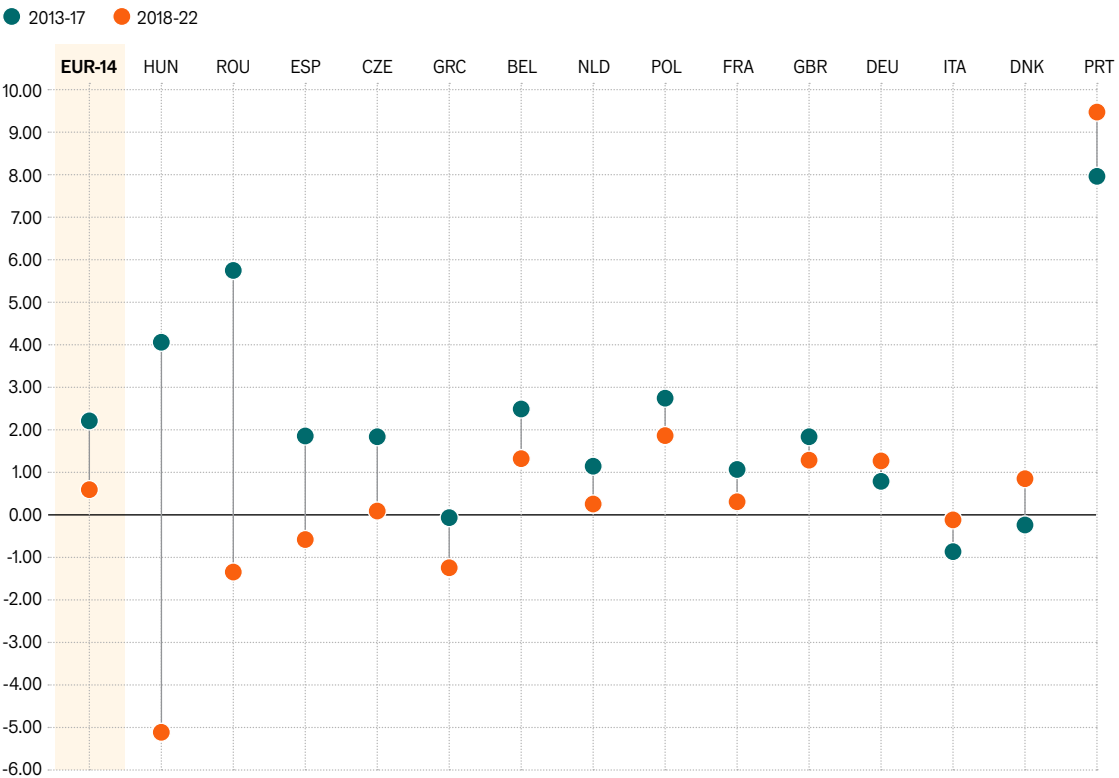
33 Indicator 2.2.3: Access to extension and information dissemination

34 Indicator 2.1.4: Adoption of agritech solutions

35 Productivity in EU agriculture: barely growing, and for the wrong reasons. Farm Europe. February 2017. Available at: <https://www.farm-europe.eu/news/productivity-in-agriculture-barely-growing-and-for-the-wrong-reasons/>

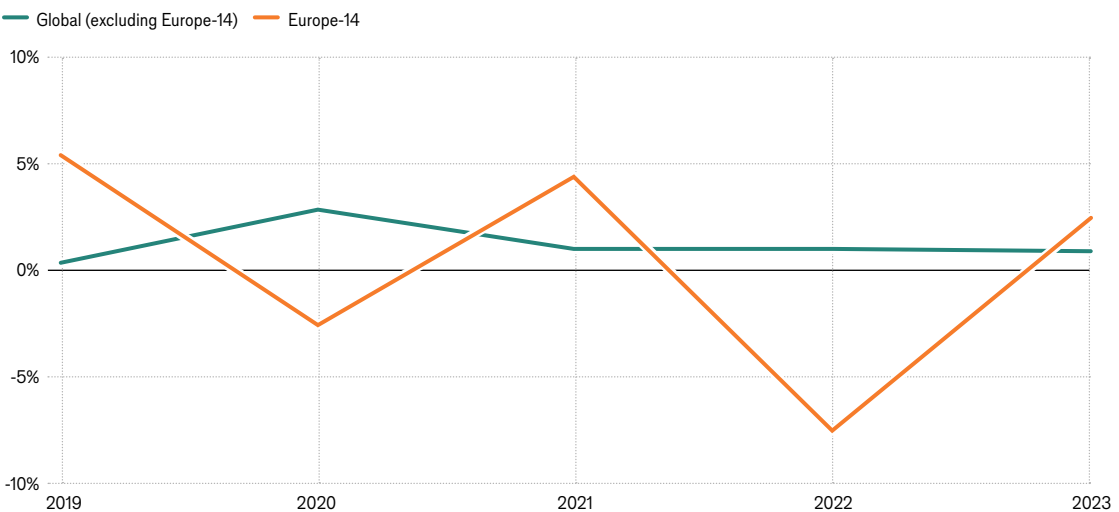
36 Productivity in EU agriculture - slowly but steadily growing. European Commission. December 2016. https://agriculture.ec.europa.eu/system/files/2019-10/agri-market-brief-10_en_0.pdf

Figure 6: Average annual growth (%) in productivity of the agricultural sector
Across Europe-14 between 2013-17 vs 2018-2022



Source: Derived from indicator 2.5: Growth in productivity of the agricultural sector, Resilient Food Systems Index, Economist Enterprise, 2026.
Country key: EUR-14 = Europe-14, HUN = Hungary, ROU = Romania, ESP = Spain, CZE = Czech Republic, GRC = Greece, BEL = Belgium, NLD = Netherlands, POL = Poland, FRA = France, GBR = United Kingdom, DEU = Germany, ITA = Italy, DNK = Denmark, PRT = Portugal

Figure 7: Annual change (%) in agricultural production (2019-23)
Global average vs Europe-14



Source: Derived from indicator 2.4: Volatility of agricultural production, Resilient Food Systems Index, Economist Enterprise, 2026.

Several pressures lie behind this. Farmers are contending with high and volatile prices for critical inputs such as fuel, feed and fertiliser. Since 2021, geopolitical shocks have disrupted fertiliser imports and the natural gas needed to produce them, holding prices in the EU and UK above pre-pandemic levels, making it harder for farmers to invest, plan and absorb losses.^{37,38} Climate risks compound the strain.³⁹

Warming is also widening the range and intensity of crop pests and disease, making preparedness a frontline climate defence. Yet that defence is uneven. Europe scores 66.44 on disaster management.⁴⁰ Although Portugal (93.98), the UK (87.04) and Hungary (85.27) perform strongly on the indicator, driven by comprehensive disaster risk reduction strategies and policies to manage pests and disease, gaps persist. For example, multi-hazard early-warning systems remain underdeveloped in the UK and Hungary.

Europe-14 leads the index on public agricultural R&D spending,⁴¹ with a score of 50.75, well above the global average of 31.08, but still modest relative to what innovation and productivity gains require.^{42,43} This tallies with a broader contraction of public R&D budgets in the world's wealthiest economies.⁴⁴ Private investment only partially fills the gap, and business-backed R&D makes up a smaller share of total spending in Europe-13 than in peers like

the US, UK, Japan and South Korea. The result is a thinner innovation pipeline that will eventually weigh on productivity (see Figure 8). The capital crunch extends to innovators across the agri-food value chain. Start-ups in bio-based verticals, including innovative food and feed producers and processors, are impeded by two main challenges, according to the European Investment Bank.⁴⁵ One is transitioning from early-stage R&D to demonstrations, where accessing finance to build capital-expenditure-heavy production facilities remains a key barrier. The second is moving from demonstrations to commercial scale,⁴⁶ where weaker market incentives⁴⁷ make it hard for innovators to make a viable return-on-investment case to financiers. This could explain a decline in venture capital spending on innovation across the agri-food value chain⁴⁸ in the region, from US\$9.2bn in 2021⁴⁹ to US\$4.04bn in 2025.⁵⁰

Europe scores highly (90.48) on offering diversified financial services for the agri-food sector,⁵¹ yet uptake is uneven. Weather-based insurance is widely offered across EU countries, but only 20-30% of climate-related farm losses are insured through public, private or mutual systems.⁵² Products tailored to low-emissions innovation remain scarce (47.62).⁵³ Credit access is a further barrier, particularly for younger farmers facing high collateral requirements, limited credit histories and volatile incomes.⁵⁴

37 Ensuring availability and affordability of fertilisers. European Commission Accessed on 23 June 2026. Available at: https://agriculture.ec.europa.eu/common-agricultural-policy/agri-food-supply-chain/ensuring-availability-and-affordability-fertilisers_en

38 GB fertiliser prices. AHDB. Accessed on 23 June 2026. Available at: <https://ahdb.org.uk/nitrogen-fertiliser-market-outlook>; <https://ahdb.org.uk/GB-fertiliser-prices>

39 Extreme weather: floods, droughts and heatwaves. European Environment Agency. July 2025. Available at: <https://www.eea.europa.eu/en/topics/in-depth/extreme-weather-floods-droughts-and-heatwaves>

40 Indicator 4.2: Disaster management: A composite indicator that measures preparedness for managing climate-change-related extreme weather events or disasters. Underlying sub-indicators measure: severity of natural disasters, maturity of multi-hazard early-warning systems, adoption and implementation of national and local disaster risk reduction strategy, and pest infestation and disease management.

41 Indicator 2.3: Public expenditure on agricultural research and development

42 Policies for the Future of Farming and Food in the European Union. OECD. October 2023. Available at: https://www.oecd.org/en/publications/policies-for-the-future-of-farming-and-food-in-the-european-union_32810cf6-en/full-report/component-5.html

43 Agricultural Policy Monitoring and Evaluation 2025: United Kingdom. October 2025. Available at: https://www.oecd.org/en/publications/2025/10/agricultural-policy-monitoring-and-evaluation-2025_354e7040/full-report/united-kingdom_aa74eae4.html

44 OECD overall R&D growth stable; government R&D budgets decline and reorient towards defence. OECD. March 2026. Available at: <https://www.oecd.org/en/data/insights/statistical-releases/2026/03/oecd-overall-rd-growth-stable-government-rd-budgets-decline-and-reorient-towards-defence.html>

45 Scaling up Europe's bio-based industries. European Investment Bank. October 2025. Available at: <https://www.eib.org/en/publications/20250060-scaling-up-europe-s-bio-based-industries>

46 Scaling up Europe's bio-based industries. October 2025. Available at: <https://www.eib.org/en/publications/20250060-scaling-up-europe-s-bio-based-industries>

47 These include feedstock supply uncertainty, market volatility, difficulties in securing long-term offtake agreements, and regulatory barriers. Financing the bio-based revolution: crossing Europe's valleys of death. Bio-based Industries Consortium. December 2025. Available at: <https://biconsortium.eu/sites/biconsortium.eu/files/publications/Financing%20the%20bio-based%20revolution.pdf>

48 Includes eGrocery, Bioenergy & Biomaterials, Midstream Technologies, Ag Biotechnology, Farm Management Software, Sensing & IoT, In-store Retail & Restaurant Tech, Innovative Food, Online Restaurants & Marketplaces, Ag Marketplaces & Fintech, Novel Farming Systems, Farm Robotics, Mechanization & Other Equipment, Cloud Retail Infrastructure

49 AgFunder European Investment Report 2022. Available at: https://research.agfunder.com/europe-2022-agrifoodtech-report-investnl.pdf?_gl=1*jaxe6n*_ga*OTI5NjcwMDU1LjE3ODUxNzk4NDI*_ga_96NWG9Y9X4*cze3ODU5Mzc2MjUkbzkkZzEkdDE3ODU5NDAxOTlkajU0JGwwJGgw

50 AgFunder Global AgriFoodTech Investment Report 2026. Available at: https://research.agfunder.com/agfunder-global-agrifoodtech-investment-report-2026.pdf?_gl=1*1pgvllx*_ga*OTI5NjcwMDU1LjE3ODUxNzk4NDI*_ga_96NWG9Y9X4*cze3ODU5MjE1MzkkbzYkZzEkdDE3ODU5MjE2NzQkajUwJGwwJGgw

51 Indicator 2.1.7: Diversified financial services for agrifood value chain

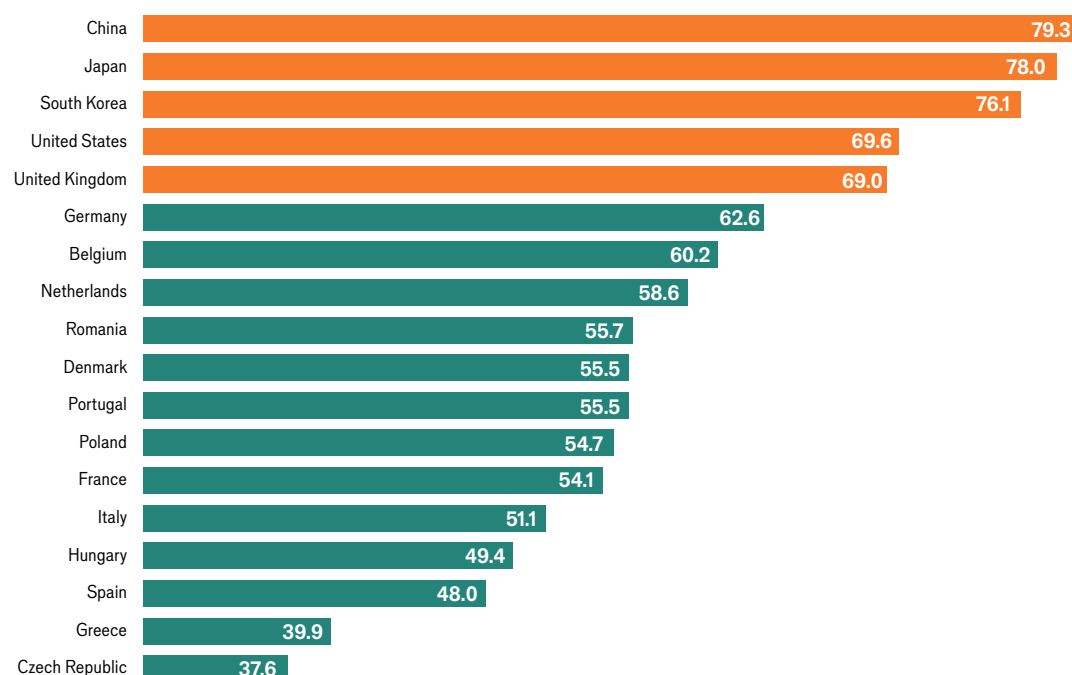
52 European agriculture faces growing climate risks that EU can help counter, new study finds. European Investment Bank. May 2025. Available at: <https://www.eib.org/en/press/all/2025-214-european-agriculture-faces-growing-climate-risks-that-eu-can-help-counter-new-study-finds>

53 Indicator 4.3.8: Financial services support for low-emissions R&D in the agrifood sector

54 Access to finance: unlocking investment for Europe's next generation of farmers. European Commission. December 2025. Available at: https://agriculture.ec.europa.eu/media/news/access-finance-unlocking-investment-europes-next-generation-farmers-2025-12-02_en

Figure 8: Business-sector-backed spending as a share of total R&D expenditure (%), 2023 (latest available)

Select OECD peer countries vs Europe-13



Source: Eurostat, UK Office of National Statistics,^{55,56} Economist Enterprise, 2026.

Lessons for addressing productivity under strain

Use inputs more efficiently, not just more locally.

Governments are strengthening and diversifying domestic production, including mineral fertilisers and bio-based alternatives, but supply-side measures are not enough.^{57,58} Europe-14 scores just 52 on nutrient-use efficiency,⁵⁹ a sign of waste and over-reliance on mineral fertiliser. Precision application, better soil testing and stronger advisory systems would help

farmers to use inputs more efficiently, lowering both costs and environmental pressures.⁶⁰

Treat early warning as core infrastructure. Disaster preparedness is among the cheapest ways to reduce climate-related losses, and multi-hazard early warning is the biggest gap. Portugal offers the clearest model, having implemented all four UN Office for Disaster Risk Reduction (UNDRR) pillars: mapping hazards, exposure and vulnerability; monitoring and forecasting risks; preparing response plans for different scenarios; and communicating warnings effectively to the public.⁶¹

55 GERD by source of funds. Eurostat. Accessed on 23 June 2026. Available at: https://ec.europa.eu/eurostat/databrowser/view/rd_e_fundgerd_custom_19148552/default/table

56 Gross domestic expenditure on research and development, UK: 2023. Gov.uk. Accessed on 23 June 2026. Available at: <https://www.ons.gov.uk/economy/governmentpublicsectorandtaxes/researchanddevelopmentexpenditure/bulletins/ukgrossdomesticexpenditureonresearchanddevelopment/2023#:~:text=1,OECD>

57 Commission presents plan to secure Europe's fertiliser supply and food security. European Commission. May 2026. Available at: https://ec.europa.eu/commission/presscorner/detail/en/ip_26_1099

58 New fertiliser regulations to back British farmers and cut pollution. Gov.UK. March 2026. Available at: <https://www.gov.uk/government/news/new-fertiliser-regulations-to-back-british-farmers-and-cut-pollution>

59 2.1.3: Nutrient use efficiency: A composite measure of the efficiency of nitrogen and phosphorus use (as nutrients) in agriculture. Scores on the indicators Sustainable Nitrogen Management Index (SNMI) and Phosphorus Surplus from the Yale EPI are aggregated. The SNMI seeks to balance efficient application of nitrogen fertiliser with maximum crop yields as a measure of the environmental performance of agricultural production. Phosphorus Surplus is the difference between phosphorus inputs (as fertiliser) and outputs (as harvested crops).

60 The future of fertiliser use. UK Parliament Post. January 2024. Available at: <https://researchbriefings.files.parliament.uk/documents/POST-PN-0710/POST-PN-0710.pdf>

61 Global Status of multi-hazard early warning systems 2023. UNDRR. December 2023. Available at: <https://www.undrr.org/reports/global-status-mhews-2023>

Make agri-food innovation demonstrations and scale-up easier to finance.

Europe's agri-food sector is a difficult market for private R&D. Margins are thin, returns take time and markets are fragmented. That makes public policy especially important in the pre-competitive space, where companies increasingly collaborate "from the farmer all the way through to retail", according to Richard Zaltzman, chief executive, EIT Food. Governments can accelerate this through regulatory sandboxes,⁶² innovation funds and co-investment vehicles such as the European Investment Fund's €25m commitment to Yield Lab Europe Fund 2, a pan-European early-stage venture capital fund targeting innovative agri-food technology companies.⁶³ To transition from demonstrations to scaling, public-sector loan guarantees, public green investment banks that provide tailored financing and risk-sharing products for the sector, and advisory services are all vehicles that can crowd in private capital.⁶⁴

De-risk low-carbon innovation, as well as scale it. Private capital is already moving into low-emissions R&D, and in eight of the 14 countries commercial banks offer green or sustainability-linked loans, credit guarantees and green bonds. Yet all 14 lack underwriting tools for nascent technologies. Warranty and indemnity cover, risk advisory for early-stage firms and parametric insurance for pilots could make low-carbon innovation more bankable.⁶⁵

Fix farm finance at the point of adoption. Better R&D will not matter if farmers cannot afford to adopt it. The EU's Strategy for Generational Renewal in Agriculture⁶⁶ begins to tackle young farmers' credit barriers, but insurance against climate-related losses needs a more layered model that spreads risk across insurers, reinsurers, capital markets and public schemes.⁶⁷ Mr Zaltzman argues that the model

should also move beyond one-insurer to one-farmer cover towards a landscape-level cover for clusters of farmers growing similar crops. Underwriting farmers this way would help to close information gaps on metrics such as offtake predictability that currently make it difficult for insurers to assess risk and price premiums accurately. "If an insurer [offered insurance] at the landscape level and had visibility of multiple offtake agreements at the landscape level, then the cost of that insurance [premium] comes down. The risk of the insurance comes down and everybody wins," Mr Zaltzman says.

Help farmers to diversify sources of returns and spread risk. Diversifying what and how a farm produces is one of the most direct ways for a farmer to buffer income against both the physical shocks of climate change and the cost of adapting to them. But diversification and climate-resilience measures, including low-carbon innovation, involve upfront costs, new skills and delayed returns. Farmers will only adopt these measures when the public support behind them is predictable, long term and easy to access, rather than delivered through short-lived grant schemes. Multi-year payments and technical training can give farmers the confidence to invest in new income streams.^{68,69} For some farms this may mean intercropping, new crop varieties, turning farming by-products into saleable goods or, where land and time horizons allow, agro-forestry. Not every farmer can adopt every practice, but farmers need viable options to avoid depending on a single income stream. By absorbing part of the cost, well-designed and consistent support turns diversification and resilience measures into commercially viable—and appealing—options.

62 Spanish Sandbox AgriFoodTech. EATEX. Accessed on 25 June 2026. Available at: <https://sandboxagrifoodtech.es/en/>

63 Investing in Agrifood: EIF Backs €100 million Irish agricultural innovation fund. European Investment Fund. June 2026. Available at: <https://www.eif.org/press/all/investing-in-agrifood-eif-backs-eur100-million-irish-agricultural-innovation-fund>

64 Financing the bio-based revolution: crossing Europe's valleys of death. Bio-based Industries Consortium. December 2025. Available at: <https://biconsortium.eu/sites/biconsortium.eu/files/publications/Financing%20the%20bio-based%20revolution.pdf>

65 Climate product innovation within the insurance sector. ClimateWise. June 2021. Available at: https://www.cisl.cam.ac.uk/files/climatewise_climate_product_innovation.pdf

66 Generational renewal in agriculture. European Commission. Accessed on: 25 June 2026. Available at: https://agriculture.ec.europa.eu/overview-vision-agriculture-food/generational-renewal_en

67 Towards a European system for natural catastrophe risk management. European Central Bank. December 2024. Available at: https://www.ecb.europa.eu/pub/pdf/other/ecb.climateinsuranceprotectiongap_EIOPA202412~6403e0de2b.en.pdf

68 Designing agri-environmental schemes to cope with uncertainty. M. Lapierre et al. Ecological Economics. January 2023. Available at: <https://www.sciencedirect.com/science/article/abs/pii/S0921800922002713>

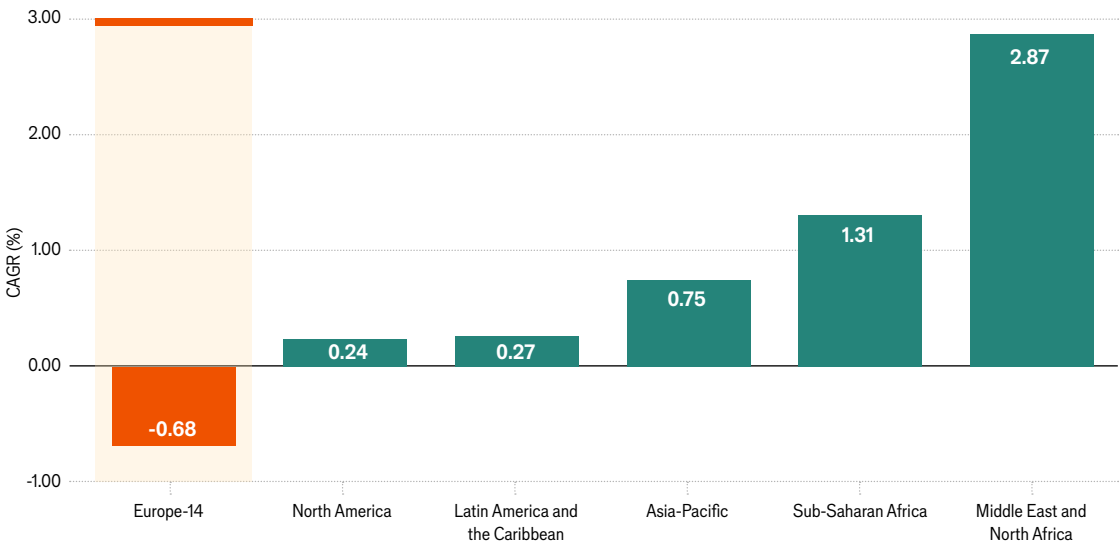
69 Adoption and potential of agri-environmental schemes in Europe: Cross-regional evidence from interviews with farmers. B. Bartkowski et al. British Ecological Society, People and Nature. August 2023. Available at: <https://besjournals.onlinelibrary.wiley.com/doi/full/10.1002/pan3.10526>

Climate ambition is rising, but delivery across the food system remains uneven

Europe is investing heavily to prepare its food system for a warmer world as more frequent extreme weather tests its ability to adapt. Europe-14 is the only region in the index where agri-food emissions have fallen relative to a 2005-07 baseline (see Figure 9), reflecting lower emissions intensity in parts of the livestock and dairy

sectors.^{70,71} Twelve of the 14 countries provide strong support for sustainable farming through regulation, financial incentives and technical assistance.⁷² National strategic plans under the Common Agricultural Policy target fertiliser use, livestock management and soil health, linking adaptation with mitigation.

Figure 9: Change in total GHG emissions (CAGR) from the agri-food sector
Average across Europe-14 vs other RFSI regions between 2005-07 and 2022



Source: Derived from indicator 4.3.4: Change in GHG emissions from the agrifood sector. Resilient Food Systems Index, Economist Impact, 2026

70 Progress and prospects for decarbonisation in the agriculture sector and beyond. European Environment Agency. October 2022. Available at: <https://www.eea.europa.eu/en/analysis/publications/progress-and-prospects-for-decarbonisation-in-the-agriculture-sector-and-beyond>
71 Agri-climate report 2024. Gov.UK. November 2025. Available at: <https://www.gov.uk/government/statistics/agri-climate-report-2024/agri-climate-report-2024>
72 Derived from indicator 4.3.3: Mainstreaming sustainable agriculture practices



Yet ambition is outpacing delivery. Current rates of reduction in Europe-14 are not sufficient to reach carbon targets by 2050.^{73,74} One reason is a lack of precision. Climate strategies set broad direction but often stop short of quantified targets for high-impact areas such as soil carbon and livestock emissions.⁷⁵ The gaps extend along the value chain. Resilience depends on what is produced, how it is processed and what consumers are encouraged to eat. Yet only five of the 14 countries have updated dietary guidelines to reflect a full food-systems approach that aligns health, sustainability and affordability.⁷⁶ Production goals and consumption patterns remain disconnected.

These gaps are not Europe's to solve at home alone, because its exposure extends beyond its borders.

Key imports—soy, maize, wheat, rice, coffee and cocoa for the EU,⁷⁷ rice, bananas and cocoa for the UK⁷⁸—are exposed to climate stress in the regions that grow them. Europe-14 is accordingly a major provider of agricultural climate finance, scoring 92.86 on related aid flows,⁷⁹ which makes it a central player in building resilience across global supply chains. Yet that outward role sits awkwardly with gaps at home. Europe-14 scores just 42.86 on political commitment to a just transition,⁸⁰ highlighting that its climate strategies do not yet fully address those most exposed to change, among them smallholder farmers, women and traditional land users. Without targeted support, these groups face higher risks and fewer tools to adapt, weakening resilience across the system.

73 Progress and prospects for decarbonisation in the agriculture sector and beyond. European Environment Agency. October 2022. Available at: <https://www.eea.europa.eu/en/analysis/publications/progress-and-prospects-for-decarbonisation-in-the-agriculture-sector-and-beyond>

74 Green your eats. Resolution Foundation. February 2026. Available at: <https://www.resolutionfoundation.org/publications/green-your-eats/>

75 Agriculture sub-sectors in the NDCs: 2020-2024 Data & maps. CGIAR. Accessed 29 April, 2026. Available at: <https://ccafs.cgiar.org/resources/tools/agriculture-in-the-ndcs-data-maps-2021>

76 Derived from indicator 3.2.1: National dietary guidelines. Based on FAO's food systems-based dietary guidelines methodology. A food systems-based approach to revising dietary guidelines goes beyond achieving nutritional outcomes. Through a multidisciplinary lens and multisectoral engagement process, it supports populations in adopting a healthier and more sustainable diet and practices that favour, among other outcomes, environmental sustainability and socioeconomic equity.

77 Nature loss and climate change pose growing risk to EU food imports, ECI researcher finds. ECI. May 2025. Available at: <https://www.eci.ox.ac.uk/news/nature-loss-and-climate-change-pose-growing-risk-eu-food-imports-eci-researcher-finds>

78 Climate impacts on UK food imports. Energy & Climate Intelligence Unit. November 2023. Available at: <https://ca1-eci.edcdn.com/food-vulnerable-Nov-2023.pdf?v=1701692173>

79 Derived from indicator 4.3.2: Climate finance aid flows to agriculture

80 Indicator 2.2.5: Political commitment to just transition

Lessons for improving climate resilience

Close the water resilience gap. The most immediate on-farm priority is water. Europe-14 scores just 41.53 on irrigation infrastructure⁸¹ against high water-quantity risk (19.12).⁸² Pair better irrigation, where needed, with climate-responsive agronomy. Adapting growing seasons and seed varieties to shifting rainfall can protect yields as weather grows less predictable, notes Arnaud Petit, executive director, International Grains Council.

Strengthen infrastructure beyond the farm gate.

Europe-14 needs to upgrade its distribution and logistics infrastructure, where the region scores 67.68.⁸³ On RFSI's end-to-end cold-chain capacity indicator, it scores just 26.19,⁸⁴ reflecting how few countries have a dedicated strategy in place. Such capacity is critical to cutting food loss and waste, especially as extreme heat becomes more frequent. Building it requires both national cold-chain action plans and enabling investment from the public and private sectors. The need for cold storage, in particular, is sharpest in southern Europe, which, as Mr Petit

notes, imports larger volumes of fresh food to feed growing populations. Without it, climate shocks will keep driving food waste, weaker supply security and higher prices.

Align dietary guidance with value-chain action.

Production goals and consumption patterns remain too disconnected. For example, in most Europe-14 countries current national dietary guidelines tell people what to eat to stay healthy. A food-systems approach is needed which goes further by asking what needs to change across production, sourcing, processing, retail and waste to make those diets affordable and more sustainable.⁸⁵ Furthermore, guidelines only become a resilience tool when translated into action across the value chain. Farmers need predictable demand and market incentives before investing in soil management, water-efficient systems or livestock that produce significantly fewer greenhouse gases. Processors need incentives to reformulate products, and retailers and public procurement can make healthier, lower-impact foods more affordable and easier to find. Tying these actors together helps to turn dietary ambition into a clear market signal.



⁸¹ Indicator 2.1.1: Irrigation infrastructure

⁸² Indicator 4.1.2: Agricultural water risk: quantity

⁸³ Indicator 2.6.5: Distribution infrastructure and logistics

⁸⁴ Indicator 2.6.6: End-to-end cold chain capacity

⁸⁵ Dietary guidelines: the next generation takes on sustainability. UN Nutrition. November 2024. Available at: <https://www.unnnutrition.org/news/dietary-guidelines-next-generation-takes-sustainability>

Conclusion

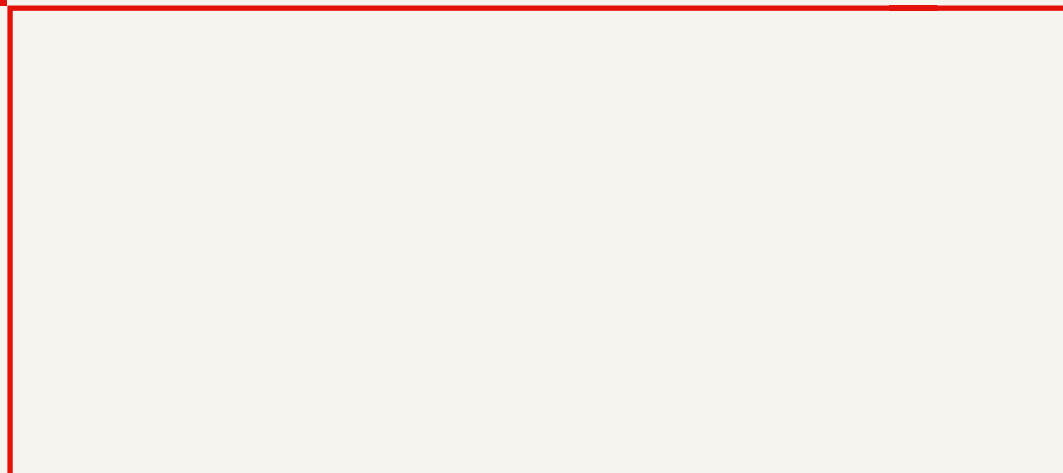
Europe's food system operates in a more volatile environment, shaped by climate stress, geopolitical disruption, input-price swings and rising sustainability expectations. Strong performance today is no guarantee of resilience tomorrow. The task is to build a system that can anticipate, absorb and adapt to shocks. That requires a better balance of risks and returns across the value chain, so that no single part carries most of the pressure while others enjoy the stability it provides. Investment and support must be aligned so the costs of adaptation are shared more fairly, and the benefits reach more of those who help to create them.

This is a collective agenda. Producers, processors, retailers, financiers, technology providers and policymakers each hold part of the answer, whether by upgrading infrastructure, strengthening early warning systems, supporting sustainable production or diversifying farmer incomes. Public policy can set the direction, but only private investment and durable collaboration will deliver it. Whether Europe's food system can withstand disruption without deepening its own weaknesses now depends on how well responsibility is shared across the value chain.



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