ECONOMIST IMPACT

Resilient Food Systems Index: Global Report

Supported by Cargill

Contents

About this report

Economist Impact'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.

This programme reflects 13 years of Economist Impact research into agriculture and food systems, examining what underpins a stable food system and how progress can be measured across emerging and advanced economies. That research includes two long-running global benchmarks: the Global Food Security Index (GFSI) and the Food Sustainability Index (FSI).

The GFSI was launched in 2012 to assess food security across four pillars: affordability; availability; quality and safety; and sustainability and adaptation.[1] The FSI was launched in 2016 to assess the sustainability of food systems across three pillars: food loss and waste; sustainable agriculture; and nutritional challenges.

These programmes reflect a consistent benchmark for food systems—enabling access to sufficient, affordable and nutritious food for all, produced sustainably. What has changed is the risk landscape. Food systems now operate amid a more dynamic and interconnected mix of geopolitical, regulatory, economic, technological and environmental pressures, increasing exposure to shocks and long-term stressors.[2] This creates a need to complement measures of food security and sustainability with an assessment of resilience—whether food systems can continue to deliver sufficient, affordable and nutritious food for all, sustainably, throughout disruption.

[1] Note: The RFSI and the GFSI share the first three pillar names and some underlying indicators across each of these three pillars.
[2] The Food Systems Countdown Report 2024: Tracking Progress and Managing Interactions. Food Systems Countdown Initiative. 2025. Available at: https://openknowledge.fao.org/items/0f244b5c-af2d-4943-8801-c7c03b8177cf

Against this backdrop, the RFSI provides a benchmark of countries' capacity to produce and deliver sufficient, affordable and nutritious food amid increasingly frequent, severe and interconnected risks. It focuses on the structural and forward-looking factors that support long-term resilience, with the aim of providing a practical tool to inform policy, investment and action towards more stable and sustainable food systems. The index also includes qualitative indicators designed to capture important drivers of resilience that are not yet consistently measured in international datasets.

Informed by Economist Impact's analysis of the index data, extensive literature review, data audit and expert advisory board consultation, this paper presents the key findings of the inaugural RFSI.

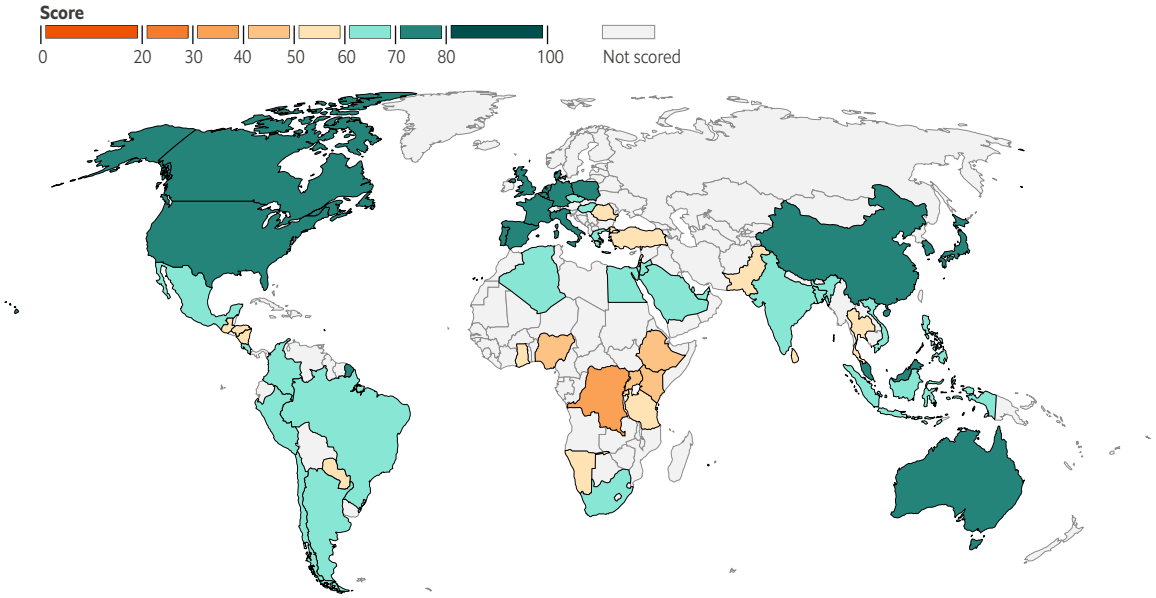
The findings and views expressed do not necessarily reflect the views of the partners, experts or sponsors.

The project management team (Pratima Singh, Apurva Kothari and Ashish Niraula) would like to extend our thanks to the experts (Appendix 2), researchers, writer (Gillian Parker), editor (Jane Murphy) and graphic designer (Maria Angel Gonzalez) who lent their expertise to this project.

Executive summary

The defining question for food systems today is not only how can the world deliver sufficient, affordable and nutritious food for all, but whether it can do so while withstanding disruption. The RFSI shows that food-system resilience is not a fixed outcome but a set of choices. Across countries, the ingredients for resilience already exist—policy ambition, technological capability, financial tools and regulatory capacity—but too often they operate in isolation. The index identifies clear points where integrated strategies can turn existing strengths into durable resilience. The challenge is less about inventing new solutions than about connecting what already works and delivering it at scale.

Figure 1: Overall RFSI scores, by country



Top-ten ranking countries

Rank/60 countries	Score/100	Rank/60 countries	Score/100
1 Portugal	76.83	6 Netherlands	73.51
2 France	76.75	7 Germany	73.50
3 United Kingdom	76.34	8 Denmark	73.19
4 United States	75.30	9 Singapore	73.00
5 Japan	74.39	10 Malaysia	72.98

Bottom-ten ranking countries

Rank/60 countries	Score/100	Rank/60 countries	Score/100
51 Nicaragua	53.45	56 Ethiopia	49.86
52 Romania	52.44	57 Nigeria	49.64
53 Lebanon	51.65	58 Uganda	48.25
54 Rwanda	50.69	59 Kenya	48.03
55 Namibia	50.43	60 Congo	34.86

Source: Economist Impact research

A 42-point gap between the most resilient and the most vulnerable food systems, Portugal and the Democratic Republic of Congo (DRC),[3] reveals that global food-system resilience is unevenly distributed. Between these two extremes, some countries remain vulnerable across multiple dimensions. Others have built pockets of strength in affordability, safety standards or innovation. But even the most resilient countries fall short[4] and no country in the index is insulated from shocks or long-term pressures. Climate risk responsiveness and food availability are areas of weakness across most countries in the index. The RFSI therefore shifts the focus from rankings to pathways showing where targeted investment and policy co-ordination can materially strengthen food systems, improve livelihoods and secure nutrition outcomes over the long term.

- **Globally, just 15 countries produce 70% of the world's food.[5] Eleven of them are also among the top 15 exporters, which account for more than 60% of global food exports. The strengths and risks in their local systems cascade across borders, impacting the resilience of the global food system.** While many major exporters and producers of crop and livestock products score above the global average on the RFSI, none approaches a level of resilience that would insulate the global system from shocks. The 15 largest food exporters average 70.07 for overall resilience and the largest 15 producers perform just above the global average (63.88). A narrow set of countries and trade corridors underwrites much of global food resilience. When they function well, they stabilise markets far beyond their borders. When they fall short, systemic vulnerability follows.
- **Most countries are investing in low emissions agricultural research and development (R&D) and sustainable farming practices. Scaling their impact into food system-wide climate resilience will require enforceable sector-specific targets and strategies.** Climate risk responsiveness is the weakest pillar in the index, averaging just 56.43, leaving food systems exposed to intensifying climate shocks and growing pressure on land, water and biodiversity. The constraint is not innovation but follow-through. Policy and blended capital support for low-emissions research and development (averaging at 76.11) and sustainable farming practices (87.50) is widespread. Yet, political commitment to mitigation and adaptation lags far behind, scoring an average of 34.03.

[3] The overall RFSI score for Portugal is 76.83. DRC scores 34.86.
[4] A fully resilient food system is one that can deliver sufficient, affordable and nutritious food for all while withstanding disruptions. On the RFSI, an overall score of 100 represents a fully resilient food system. None of the 60 countries receive a full score of 100, highlighting gaps in their food-system resilience.
[5] Global food (ie agrifood products) 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. Food and Agriculture Organisation (FAO) of the UN. Available at: https://www.fao.org/faostat/en/#data/TCL

Clear, high-impact and agriculture-specific targets need to be embedded in national climate strategies and backed by delivery plans. Scaling resilience will also depend on directing policy and finance toward proven, deployable solutions, from early-warning systems to disaster reduction strategies.

- **A combination of nutrition-sensitive consumer incentives, food systems-based dietary guidelines and open and diversified trade can make healthy diets affordable.** Countries generally perform well on food affordability, with the pillar averaging 71.83, even as living costs rise. But this apparent resilience masks vulnerabilities and persistent nutrition gaps. In 62% of countries, the least expensive healthy diet absorbs around two-thirds of the income of the poorest households. Systems optimised solely for affordability, without balancing nutritional and caloric needs, risk locking in long-term public health costs through rising non-communicable diseases, thereby undermining long-term resilience. The index points to three levers that can make healthy diets more affordable: fiscal policy that tilts prices toward nutritious foods; dietary guidelines that align health, sustainability and access; and open, diversified trade that lowers costs while broadening availability of nutrient-dense foods.
- **Drawn by the promise of improved risk-reward dynamics, countries are scaling up support for agritech and diversified agricultural finance. To unlock their full impact, the focus now needs to shift to extending the foundations that allow these tools to work at system level.** A global average score of 58.29 on Availability (which includes farm input access, supply-chain efficiency and enabling finance) suggests there is substantial scope to improve farmers' access to services and markets. Infrastructure—particularly electricity, connectivity, transport and cold chains—is the key accelerator of food availability and resilience. While 97% of countries offer policy and/or blended capital support for agritech adoption, the RFSI shows that the strongest gains occur when this support is paired with sustained investment in these core enablers. Strengthening basic services and market links enables farmers to connect to buyers, translate productivity gains into income and reduce losses. Co-ordinated public–private investment in foundational infrastructure is therefore the most direct way to turn innovation into food-system-wide resilience.

- **To move food efficiently from farm to fork, farmers need reliable access to markets. Preferential public procurement and contract farming have helped many countries strengthen market access at the production stage. The next step is building end-to-end cold chain capacity and aligning non-tariff measures (NTMs) across borders.** The RFSI shows that while blended support[6] for farmer market access is widespread (averaging 87.50), annual growth in producer prices remains weak (averaging just 42.05),[7] signaling gains often stop at the farm gate and farmers capture limited returns. High transport costs, poor connectivity and fragmented trade rules blunt incentives to invest in productivity, particularly for smallholders. Gaps are most acute in end-to-end cold chains—a critical link between production, nutrition and waste reduction. Despite 50 of 60 RFSI countries having food loss and waste strategies, more than half under-invest in cold-chain infrastructure, with dedicated policy and investment for end-to-end cold chain capacity averaging just 42.78. Additionally, across RFSI countries, the number of NTMs applied to imported agrifood products ranges from zero to 1,806, underscoring a wide variation in regulatory intensity and the uneven compliance burden facing exporters. Reducing divergence in NTM can materially lower trade costs and improve market access for farmers without diluting safety or quality standards. Where markets function—through reliable local links, storage and contracting, better price information and more aligned trade rules—productivity gains translate into higher incomes and more durable resilience.

[6] As captured by indicator *2.6.2) Blended market access support for smaller-scale farmers*, which gauges presence of government, multilateral/donor or private sector support to improve market access for farmers, focusing smaller-scale or vulnerable groups in the agricultural sector such as smallholder or subsistence farmers, women, indigenous people and other minorities.

[7] As captured by indicator 2.6.1) Agricultural producer prices, which tracks the average annual percentage change in the selling prices received by farmers in 2019-2024.

Introduction

The defining question for food systems today is not only how the world can produce enough, but whether it can do so while withstanding disruption. Climate shocks, trade restrictions and geopolitical conflict in recent years have shown how quickly narrowly optimised systems can unravel with disruption cascading across borders. Today, the test is no longer how efficiently food can be produced or moved but whether entire systems can absorb disruption and continue to function.

The exposure to disruption is not evenly distributed. A large share of global food resilience is effectively underwritten by a narrow set of countries and trade corridors. When these systems perform well, they stabilise markets far beyond their borders. However, when these anchor systems fall short, they leave the wider food system vulnerable to shocks. In a world of rising protectionism, global food systems demand deliberate investment in resilience, open trade and risk management, even as geopolitical co-operation frays.

That capacity is being tested as never before. Food systems must feed nearly 10bn by 2050 while confronting intensifying climate volatility, ecological degradation, nutritional shortfalls and persistent inequalities in access and livelihoods.[8] The RFSI shows that resilience is not housed in any single pillar, nor can it be engineered through stand-alone interventions. By making interdependencies explicit, the index highlights where alignment is required, illuminating pathways for action that span the system, from smallholder farmers who produce a significant share of the world's food to the consumers and policymakers who shape demand.

[8] Food Finance Architecture: Financing a Healthy, Equitable and Sustainable Food System. World Bank Group. September 2021. Available at: https://www.worldbank.org/en/topic/agriculture/publication/food-finance-architecture-financing-a-healthy-equitable-and-sustainable-food-system

Global food anchors lead the way, but even the most resilient countries remain exposed

Given that our food system is highly interconnected, a small number of countries exert an outsized influence on global food-system resilience through their role in production and exports. As few as 15 countries produce 70% of the world's food.[9] Eleven of these top food producers are also among the top 15 exporters, responsible for more than 60% of global food exports (see Table 1). While these major exporters and producers generally outperform the global average on the RFSI, none has built a fully resilient system.[10] When they function well, they stabilise markets globally. However, when their food systems are disrupted, shocks that look manageable nationally can cause worldwide stress, tightening availability, lifting prices and worsening food-access risks for import-dependent countries.

Table 1: Top 15 global food producers and exporters by quantity[11]

PRODUCERS

Countries	Share of global food production (tonnes)	Countries	Share of global food production (tonnes)
China	18.0%	Argentina	1.6%
India	13.5%	Mexico	1.5%
Brazil	10.7%	Turkey	1.4%
US	7.9%	France	1.4%
Indonesia	4.1%	Germany	1.4%
Pakistan	2.1%	Canada	1.1%
Nigeria	1.9%	Australia	1.1%
Thailand	1.8%	**Total**	**69.5%**

EXPORTERS

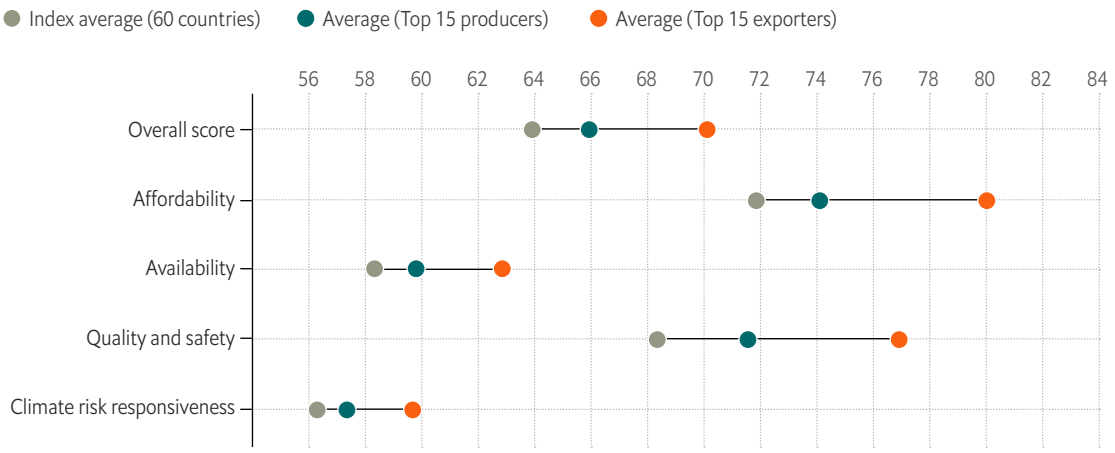
Countries	Share of global food exports (tonnes)	Countries	Share of global food exports (tonnes)
Brazil	12.5%	Germany	3.1%
US	12.0%	Indonesia	2.8%
Argentina	4.5%	Thailand	2.7%
India	4.0%	China	2.3%
Canada	4.0%	Belgium	1.9%
Australia	3.4%	Spain	1.9%
France	3.3%	Poland	1.8%
Netherlands	3.2%	**Total**	**63.3%**

[9] Food and food exports refer to agrifood 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. FAO of the UN. Available at: https://www.fao.org/faostat/en/#data/TCL

[10] A fully resilient food system is one that can deliver sufficient, affordable and nutritious food for all while withstanding disruptions. On the RFSI, an overall score of 100 represents a fully resilient food system. However, none of the top producers and exporters score 80 or above, highlighting gaps in their food-system resilience.

[11] The list of top 15 producers and exporters of global crop and livestock products (global food) excludes Ukraine and Russia as these countries are not covered by the RFSI. However, their production and export quantities (in tonnes) are included in the denominator to calculate the shares of the top 15 countries.

Figure 2: Average RFSI scores: Top 15 exporters and producers vs all 60 countries
Score 0-100, where 100 = strongest performance



Source: Economist Impact research

The average overall RFSI score for the 15 largest food exporters is 70.07. While this is above the 60-country average of 63.88, it falls short of a level that would signal robust, system-wide resilience. The picture is more mixed among the world's largest food producers. Despite supplying the majority of the global food output, the top 15 producers included in the index perform just above the global mean, with an average score of 65.87. The countries that matter most for global food availability are not failing, but they are far from secure.

That pattern extends beyond major producers to the most resilient systems in the index, where performance is still constrained by underlying structural gaps. At the top of the index, resilience scores are tightly bunched. Portugal (76.83) and France (76.75) narrowly lead a small group that includes the UK (76.34) and the US (75.30). However, the absence of any country scoring 80 or above signals a shared ceiling on performance. Furthermore, a 42-point gap between the most resilient and the most vulnerable on the index, Portugal and the DRC (34.86), reveals that global food-system resilience is unevenly distributed. Finally, a global average score of 63.88, with nearly half of countries in a middle range of roughly 56 to 71, indicates that food systems are neither acutely fragile nor genuinely robust.

A clear structural pattern underpins these results. Most major food systems tend to score strongly on affordability and quality and safety—two index pillars with higher global averages. These strengths reflect scale, commercial integration and regulatory capacity. However, even relatively resilient systems in the RFSI—including the US, Brazil, China and Australia, which together account for roughly a third of global food production and exports[12]—remain exposed to climate volatility, infrastructure bottlenecks and growing resource constraints. For example, among the world's top 15 exporters and producers included in the index, average scores for climate-risk responsiveness stand at 59.84 and 57.55 respectively. Performance is particularly weak on political commitment to mitigation and adaptation[13] and water risk management.[14] Given the central role these countries play in global production and trade, these vulnerabilities have implications well beyond national borders, shaping the resilience of the world's food system as a whole.

[12] The US, Brazil, China and Australia together produce 37.6%, and export 30.2%, of global crop and livestock products.
[13] As captured by indicator *4.3.1) Political commitment to mitigation and adaptation* on the RFSI, which gauges country progress on setting material and measurable climate targets for the agriculture sector.
[14] As measured by indicators *4.1.2) Agricultural water risk: quantity,* and *4.1.3) Agricultural water risk:* quality on the RFSI.

Stress multipliers: Climate, pests and biological risk

Climate risk responsiveness is the lowest-scoring pillar in the RFSI, averaging 56.43 across the 60 countries assessed. Performance within the pillar is uneven with some indicators scoring highly, but these gains are insufficient to offset deficits elsewhere. For example, policy support and blended capital are increasingly aligned behind low emissions and sustainable agriculture, with widespread backing for R&D into low-emissions agrifood solutions (76.11) and extensive adoption of sustainable agricultural practices (87.50). However, across countries of all income levels, the mechanisms needed to anticipate risks and respond in a timely manner are underdeveloped, with risk-reduction strategies and early-warning systems falling short of what rising climate exposure demands.

The absence of clear, high-impact and sector-specific mitigation and adaptation targets can limit co-ordinated action across the agrifood value chain and undermine overall resilience against climate risk. Across the index, Nationally Determined Contributions (NDCs) do not yet cover the full range of measures needed to tackle agriculture's biggest sources of emissions, leaving countries with an average score of just 34.03 on political commitment to mitigation and adaptation.[15] Without material and measurable targets, climate risk management—ranging from resilient production practices to investment in early-warning systems—is likely to remain ad hoc and reactive, not co-ordinated and preventative. Gaps in agricultural NDCs are compounded by limited attention to just-transition considerations. National climate strategies[16] score an average of 43.33 on identifying and managing the socioeconomic risks of transition, leaving the sector's most vulnerable stakeholders—women farmers, seasonal and subsistence farm workers, and smallholders—insufficiently protected.

[15] As measured by CGAIR, a comprehensive set of NDCs includes mitigation and adaptation measures that address the largest pools of emissions from the agricultural sector: livestock, agricultural soils and rice cultivation.
Rose S, Khatri-Chhetri A, Stier M et al. Agricultural sub-sectors in new and updated NDCs: 2020-2021 dataset. CCAFS dataset version 2.1, updated October 2022. Wageningen, Netherlands: CGIAR Research Program on Climate Change, Agriculture and Food Security (CCAFS). 2021. Available at: https://hdl.handle.net/10568/115962;
Ge M, Friedrich J, Vigna L. Where Do Emissions Come From? 4 Charts Explain Greenhouse Gas Emissions by Sector. World Resources Institute. December 2024. Available at: https://www.wri.org/insights/4-charts-explain-greenhouse-gas-emissions-countries-and-sectors

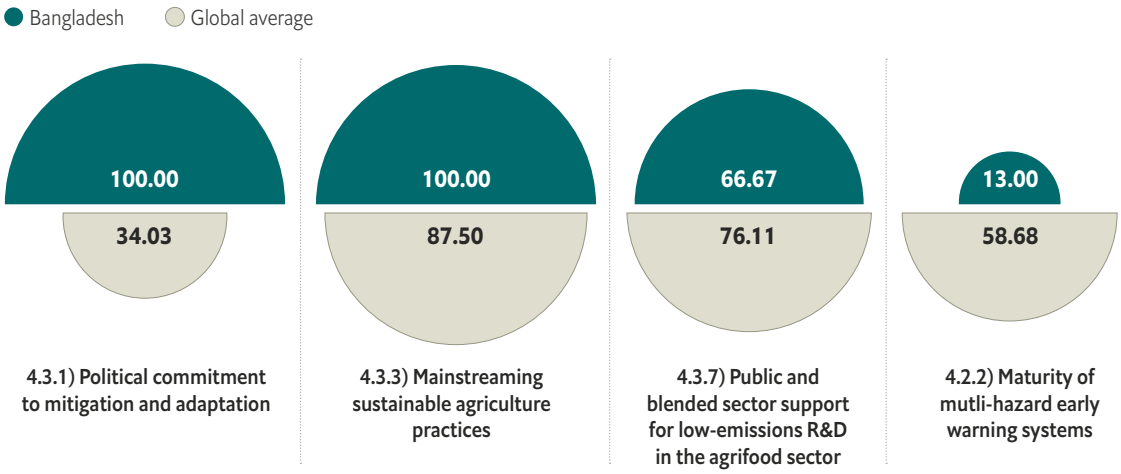
[16] 'Indicator 2.2.5: Political commitment to just transition' specifically assesses if the Nationally Determined Contributions (NDC)/ National Adaptation Plan/Biennial Update Report submitted to the United Nations Framework Convention on Climate Change addresses supporting a just transition for the agrifood sector.

Integrating early-warning systems and climate information services into NDCs and National Adaptation Plans is critical to climate risk management, allowing countries to continuously monitor, identify and minimise exposure to potential hazards.[17] However, early-warning capacity is particularly fragile, according to index results. A global average score of 58.68 for the maturity of multi-hazard early-warning systems points to large swathes of food production exposed to predictable shocks. While adoption and implementation of national and local disaster risk reduction strategies averages a slightly higher 62.25, a quarter of the index scores zero on this metric, signalling limited capacity to contain immediate impacts, avert knock-on effects across food systems and transition quickly from response to recovery.

Building climate-resilient food systems requires ambition and action to move in lockstep across the agrifood sector. Bangladesh offers a tangible example of how this co-ordination can work in practice. Highly exposed to climate shocks,[18] Bangladesh stands out as an example of a country setting clear, high-impact and comprehensive agrifood-sector mitigation and adaptation NDCs and translating these into action, using institutional delivery and blended finance (See Figure 3). Bangladesh's agriculture policy is now explicitly aligned with nutrition and climate objectives, with greater emphasis on micronutrient-rich crops, biofortification and diversified farming systems.[19] While data and monitoring dashboards remain a work in progress, climate-smart practices have moved beyond pilots.[20] Alternate wetting and drying irrigation in rice cultivation—cutting water use and methane emissions while preserving yields—aligns productivity, mitigation and resilience in a single intervention.[21]

Figure 3: Climate ambition and action in lockstep?: Bangladesh versus global average score

Score 0-100, where 100 = strongest performance



Source: Economist Impact research

[17] Emerging Practice for Integrating and Implementing Early Warning Systems and Climate Information Services in NAPs and NDCs. Center for Climate and Energy Solutions. September 2025. Available at: https://www.c2es.org/wp-content/uploads/2025/09/C2ES-EWS-and-CIS-in-NAPs-and-NDCs.pdf

[18] Lang M, Rexer J, Sharm S, Triyana M. From Risk to Resilience: Helping People and Firms Adapt in South Asia. South Asia Development Matters. World Bank. 2025. Available at: https://openknowledge.worldbank.org/server/api/core/bitstreams/ff2cc5c5-a3d1-47a7-a205-93dbc06f7ec7/content

[19] Tackling Micronutrient Deficiency in Bangladesh: The Role of Biofortified Zinc Rice (BZR). Global Alliance for Improved Nutrition. 2024. Available at: https://www.gainhealth.org/blogs/tackling-micronutrient-deficiency-bangladesh-role-biofortified-zinc-rice-bzr.

[20] Eshtiak A, Ritu SK, Salma U. Beyond the Façade: A CSO Review of Four Years of the Bangladesh National Pathway Document for the UN Food Systems Summit 2021. Bangladesh Food Security Network - KHANI. July 2025. Available at: https://praan.org.bd/wp-content/uploads/2025/07/CSO-Review-of-Four-Years-of-the-Bangladesh-National-Pathway-of-the-UNFSS-2021_compressed.pdf

[21] ADB initiative promotes water-saving irrigation practice in drought-prone Bangladesh region. International Rice Research Institute. May 2025. Available at: https://www.irri.org/news-and-events/news/adb-initiative-promotes-water-saving-irrigation-practice-drought-prone

Cold-storage capacity has expanded, rising from 2.4m tonnes in 2022 to 2.7m tonnes in 2024.[22] To accelerate access, in 2025, the government initiated its first decentralised cold-storage programme, rolling out 100 mini, solar-powered ten-tonne units to curb post-harvest losses and improve climate resilience for smallholder farmers.[23] Most recently, the government, Food and Agriculture Organisation (FAO) and the Gates Foundation formalised the Agriculture Transformation Project to modernise the sector and strengthen resilience,[24] complemented by emergency livestock initiatives targeting systemic disease risks such as foot and mouth disease and African swine fever.[25] Despite progress in mitigation and adaptation, the RFSI highlights vulnerabilities in disaster preparedness, most notably in the coverage and effectiveness of multi-hazard early-warning systems.

Pests and pathogens: climate risk's silent accelerant

As climate exposure accelerates faster than adaptation, biological risks are intensifying in its wake.[26] Pest control and disease transmission are undermining yields,[27] raising input costs, distorting trade flows and accelerating environmental damage. Together, this is compounding climate stress and exposing gaps in preparedness across the value chain. Only a third of countries in the RFSI score high on pest infestation and disease management.[28] The economic consequences propagate quickly. On farms, higher pest and disease pressure drives heavier chemical use and higher veterinary costs, accelerating resistance and antimicrobial-use concerns.[29] Downstream, outbreaks trigger movement controls and trade restrictions[30] and the culling of infected animals,[31] turning biosecurity lapses into supply shocks.

[22] Eshtiak A, Ritu SK, Salma U. Beyond the Façade: A CSO Review of Four Years of the Bangladesh National Pathway Document for the UN Food Systems Summit 2021. Bangladesh Food Security Network - KHANI. July 2025. Available at: https://praan.org.bd/wp-content/uploads/2025/07/CSO-Review-of-Four-Years-of-the-Bangladesh-National-Pathway-of-the-UNFSS-2021_compressed.pdf

[23] Farmers get mini cold storages for the first time in Bangladesh. The Business Standard. August 2024. https://www.tbsnews.net/agriculture/farmers-receive-mini-cold-storages-first-time-bangladesh-1222161

[24] FAO Bangladesh Launches Groundbreaking Agricultural Transformation Project supported by the Gates Foundation. United Nations Bangladesh. July 2025. Available at: https://bangladesh.un.org/en/298477-fao-bangladesh-launches-groundbreaking-agricultural-transformation-project-supported-gates

[25] FAO and Government of Bangladesh will work together to accelerate progress towards food security, nutrition, livestock productivity and sustainable agricultural development. United Nations Bangladesh. April 2025. Available at: https://bangladesh.un.org/en/292607-fao-and-government-bangladesh-will-work-together-accelerate-progress-towards-food-security

[26] Ma CS, Wang BX, Wang XJ, et al. Crop pest responses to global changes in climate and land management. Nature Reviews Earth & Environment:6;264-283. April 2025. Available at: https://doi.org/10.1038/s43017-025-00652-3

[27] Niranjan A. Climate crisis could hit yields of key crops even if farmers adapt, study finds. The Guardian. June 2025. Available at: https://www.theguardian.com/environment/2025/jun/18/crop-yields-climate-crisis-adaptation

[28] As captured by indicator 4.2.4) Pest infestation and disease management which gauges whether a country has a national policy on mitigating risks of and responding to pest infestation disaster events and an annual budget allocated for the implementation of the policy

[29] Caneschi A, Bardhi A, Barbarossa A, Zaghini A. The Use of Antibiotics and Antimicrobial Resistance in Veterinary Medicine, a Complex Phenomenon: A Narrative Review. Antibiotics. 1;12(3):487. March 2023. Available at: 10.3390/antibiotics12030487

[30] Self-declaration of freedom from infection with Newcastle Disease in poultry by Brazil. World Organisation for Animal Health. October 2024. Available at: https://www.gov.br/agricultura/pt-br/assuntos/sanidade-animal-e-vegetal/saude-animal/programas-de-saude-animal/pnsa/doenca-de-newcastle/Autodeclarao_de_Livre_DNCWOAH_2024.pdf

[31] Ward Agius M. As bird flu spreads in Europe, farmers cull poultry stock. DW. October 2025. Available at: https://www.dw.com/en/h5n1-bird-flu-spreading-to-poultry-via-migratory-cranes-germany-denmark-netherlands-usa-europe/a-74527770

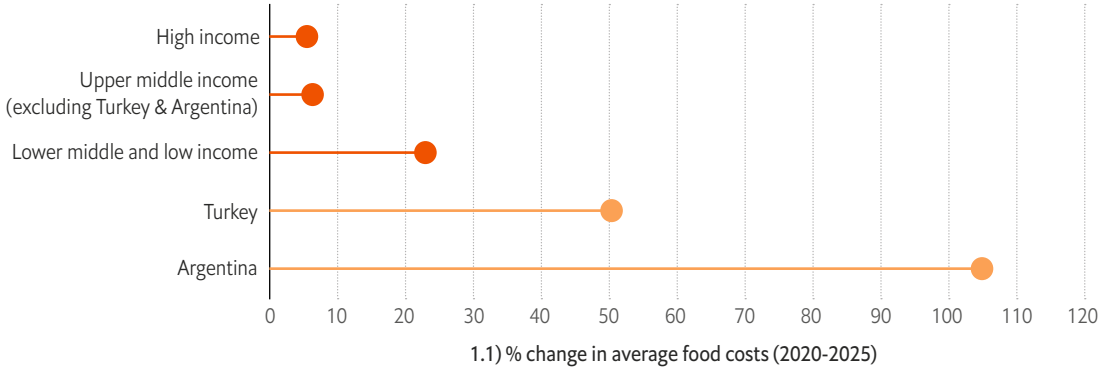
As one of the world's largest agricultural producers and exporters, Brazil plays an outsized role in the resilience of the global food system.[32] It is the world's leading exporter of several commodities including coffee, soya beans, beef and sugar and a critical supplier to global feed markets. With so much of the world's food and feed supply flowing from its fields, Brazil's capacity to manage pests and disease has implications well beyond its border. Brazil scored highly for pest and disease management and enabling policy and blended capital support for the adoption of agritech solutions in the RFSI. The country is a global leader in biological control, with more than half of farms using these eco-friendly methods that suppress pests through natural predators rather than chemical inputs.[33] Nature-based solutions are applied with digital precision, and large swathes of Brazil's crop belt rely on AI-enabled platforms, which fuse satellite imagery, weather data and field-level scouting to flag pest pressure early and guide precisely timed interventions.[34] Crucially, Brazil's digital shift is being underwritten by innovative finance. Input suppliers, banks and agritech firms are bundling pest-monitoring tools into embedded credit and pay-as-you-grow models, allowing agricultural small and medium-sized enterprises (SMEs) to access diagnostics and advisory services with repayment linked to harvest outcomes.[35,36,37]

[32] OEC World Country Profile: Brazil. Available at: https://oec.world/en/profile/country/bra
[33] Alisson E. Registration of biological pest control products exceeds that of agrochemicals in Brazil. May 2024. Agência FAPESP. Available at: https://agencia.fapesp.br/registration-of-biological-pest-control-products-exceeds-that-of-agrochemicals-in-brazil/51442
[34] Brazil Agriculture Market 2025: AI & Biotech Revolution. Farmonaut. 2025. Available at: https://farmonaut.com/south-america/brazil-agriculture-market-2025-ai-biotech-revolution
[35] FICO Platform Powers R$1B Digital Transformation in Brazil's Rural Credit System. Business Wire. July 2025. Available at: https://www.businesswire.com/news/home/20250708691193/en/FICO-Platform-Powers-R%241B-Digital-Transformation-in-Brazils-Rural-Credit-System
[36] Rural Credit Policy (Landscape of Climate Finance for Land Use in Brazil 2021–2023). Climate Policy Initiative. Available at: https://www.climatepolicyinitiative.org/rural-credit-policy-landscape-of-climate-finance-for-land-use-in-brazil-2021-2023/
[37] Growth Next-Generation Agriculture (GAN). The Lab. Available at: https://www.climatefinancelab.org/ideas/growth-next-generation-agriculture-gan/

The affordability paradox: provision, nutrition and waste

Disease and climate stress ripple through supply chains, reducing availability and raising costs. Even so, affordability performs relatively well in the RFSI. But aggregate affordability masks mounting distributional pressures. Hunger and poverty remain higher than pre-2015 levels, even as obesity and diet-related disease accelerate.[38] Inequality remains entrenched; emerging and developing economies, where food and energy constitute a large share of household spending, continue to bear the brunt of rising costs. Low- and lower-middle-income countries in the RFSI perform poorly on changes in average food costs, with prices rising by 23.09% over the past five years. In many emerging and developing economies, global price spikes, climate shocks or currency depreciation pass rapidly through to households.[39] Nevertheless, upper-middle income Argentina and Turkey are among the most vulnerable, reflecting persistently high inflation, currency weakness and macroeconomic instability that have repeatedly eroded real wages, pushing food prices well ahead of incomes.

Figure 4: Change in average food cost (2020-25), by income



Source: Economist Impact research

[38] The State of Food Security and Nutrition in the World 2025. FAO; IFAD; UNICEF; WFP; WHO. 2025. Available at: https://doi.org/10.4060/cd6008en
[39] Food Security Update. The World Bank. December 2025. Available at: https://thedocs.worldbank.org/en/doc/40ebbf38f5a6b68bfc11e5273e1405d4-0090012022/related/Food-Security-Update-120-December-19-2025.pdf

Higher affordability scores are arguably supported by a decade of real wage growth and targeted fiscal support,[40] which explains why food affordability appears resilient in high and upper middle income economies despite recent inflation.[41] China's strong performance on food affordability—ranked second overall—reflects extensive scale and state intervention. The use of price stabilisation mechanisms, including strategic grain reserves,[42] minimum purchase prices[43] and subsidies, help insulate consumers from volatility, particularly for staple foods. However, affordability through administrative control can weaken adaptive capacity and does not capture the pressures across the value chain.

China's agricultural productivity gains have come with ecological costs, particularly groundwater depletion and nutrient runoff linked to fertiliser overuse,[44] both weak spots recorded in the index.[45]

Looking ahead, managing food affordability will depend less on short-term price controls than on addressing structural risks. Climate shocks are intensifying, while high input costs, trade restrictions,[46] weak logistics and market concentration amplify price transmission. Sustained investment in productivity, R&D and storage and transport is essential to prevent climate, energy and geopolitical shocks from repeatedly feeding through into food prices.

[40] America's affordability crisis is (mostly) a mirage. The Economist. December 2025. Available at: https://www.economist.com/briefing/2025/12/30/americas-affordability-crisis-is-mostly-a-mirage

[41] World Economic Outlook: Global Economy in Flux, Prospects Remain Dim. International Monetary Fund. October 2025. Available at: https://www.imf.org/en/publications/weo/issues/2025/10/14/world-economic-outlook-october-2025

[42] Strengthening Strategic Grain Reserves to Enhance Food Security. World Bank; FAO; WFP. 2025. Available at: https://documents1.worldbank.org/curated/en/099042625211562573/pdf/P504545-488431b2-0565-40f9-852c-e8db32d22559.pdf

[43] Cheng M, Chen Yangyang. The Minimum Purchase Price policy in China and wheat production efficiency: a historical review, mechanisms of action, and policy implications. Frontiers in Nutrition. March 2025. 12:1536002. Available at: https://www.frontiersin.org/journals/nutrition/articles/10.3389/fnut.2025.1536002/full

[44] Huang J. China's Rural Transformation and Policies: Past Experience and Future Directions. Engineering. November 2022. 18:21-26. Available at: https://www.sciencedirect.com/science/article/pii/S209580992200220X.

[45] China scores 8.48 on 4.1.2) Agricultural water risk: quantity, which tracks various quantity-related water risk factors such as baseline water stress, inter-annual variability, seasonal variability, upstream storage and groundwater stress. Available at: World Resources Institute (WRI) Aqueduct: https://www.wri.org/resources/type/data-52/subtype/data-set-54/tags/aqueduct-19504"
China scores 44.45 on 2.1.3) Nutrient use efficiency, a composite indicator tracking the efficiency of nitrogen and phosphorus use (as nutrients) in agriculture. Available at: Yale Environmental Performance Index (EPI):
https://epi.yale.edu/measure/2024/SNM
https://epi.yale.edu/measure/2024/PSU

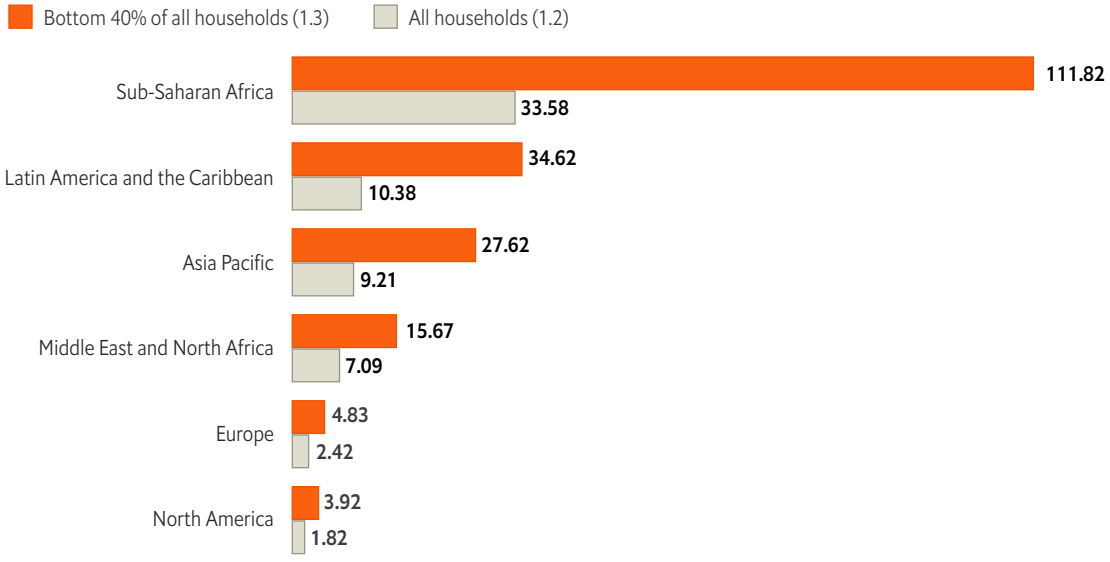
[46] Smith AJ. Consumers Should Brace Themselves for Higher Food Prices. Council on Foreign Relations. August 2025. Available at: https://www.cfr.org/article/consumers-should-brace-themselves-higher-food-prices

More affordable food does not always mean better diets

More affordable food has not translated into access to diverse, nutritious diets nor into better health outcomes.[47] Regional averages reveal stark disparities in the affordability of healthy diets[48] between and within countries. In high-income regions such as North America and Europe, the cost of a healthy diet sits below 3% of mean GDP per head. (see Figure 5) By contrast, affordability pressures intensify sharply in emerging regions, particularly in Sub-Saharan Africa, where a healthy diet absorbs more than one-third of average income, placing nutritious food increasingly out of reach. Furthermore, healthy diets remain unaffordable for the bottom 40% of households across emerging and high-income economies. In 37 RFSI countries, the least expensive locally sourced healthy diet costs about two-thirds of the average per capita income.[49]

A key problem is that prices do not reflect true social costs. Energy-dense, low-nutrient foods remain more economical, ubiquitous and aggressively marketed, while fresh, nutrient-rich foods face higher production, transport and spoilage costs.[50] Systems optimised solely for affordability, without balancing nutritional and caloric needs, risk locking in long-term public health costs through rising non-communicable diseases, thereby undermining long-term resilience. Even the most resilient countries cannot take this for granted.

Figure 5: Affordability of a healthy diet, by region
Cost of a healthy diet as a % of daily mean GDP per capita (2022-2024)



Source: Economist Impact research

[47] Ambikapathi R, Schneider KR, Davis B, et al. Global food systems transitions have enabled affordable diets but had less favourable outcomes for nutrition, environmental health, inclusion and equity. Nature Food. September 2022. 3:764–779. Available at: https://www.nature.com/articles/s43016-022-00588-7#Abs1
[48] According to FAO, a healthy diet is adequate, diverse, balanced and moderate, ensuring that people receive the necessary nutrients while avoiding harmful excesses. Healthy diets for all. FAO. Available at: https://www.fao.org/neareast/main-topics/regional-priorities/RP2/healthy-diets-for-all/en
[49] Indicator 1.3) Measures the affordability of a healthy diet to bottom 40% (poorest households). This indicator is used to calculate the average across the subset of countries (37/60) where the least expensive locally sourced healthy diet costs more than 10% of the mean GDP per head of the poorest households.
[50] WHO launches new guidelines on fiscal policies to promote healthy diets. World Health Organisation. June 2024. Available at: https://www.who.int/news/item/14-06-2024-who-launches-new-guideline-on-fiscal-policies-to-promote-healthy-diets

The US—ranking third overall on affordability—ranks 51st out of 60 countries on dietary diversity,[51] driven by the high consumption of low-nutrient foods. In China, price controls and large-scale supply have helped stabilise consumer access, but they mask growing diet-related health burdens linked to changing consumption patterns and urban lifestyles.[52] In both cases, affordability achieved through scale and control may not translate into healthier outcomes and may prove harder to sustain as health and environmental costs accumulate.

Without correcting distorted price signals, less nutritious food will continue to co-exist with poorer health outcomes and deeper inequality.[53] Fiscal policy can help reshape diets by resetting the incentives that guide what consumers buy and what producers supply.[54] In particular, targeted subsidies for fruit, vegetables and other nutrient-dense foods could tilt relative prices towards healthier choices, particularly for low-income households.[55,56] For example, Indonesia's Program Sembako is a government-run, non-cash food assistance programme that provides monthly electronic vouchers to poor and vulnerable families to access balanced and nutritious diets. Specifically, the assistance can be used to purchase carbohydrates (rice, corn), animal protein (eggs, meat, fish), vegetable protein (tofu, tempeh) and sources of vitamins and minerals (vegetables, fruits).[57] Where the public sector subsidies falls short of delivering nutrition-sensitive food safety net programmes, the private sector can step in. Take South Africa's biggest private health insurer, Discovery Health, which offers up to 25% in rebates for healthy food in selected supermarkets.[58]

[51] As captured by indicator 3.1) Dietary Diversity, a composite indicator tracking dietary diversity scores and consumption of low nutrient foods.
[52] Zhuang P, Liu X, Ao Y, et al. Impact of dietary transitions on overweight and obesity burden and future trends among Chinese adults. npj Science of Food. November 2025. 9;257. Available at: https://doi.org/10.1038/s41538-025-00615-4
[53] Pancrazi R, Van Rens T, Vukotić M. How distorted food prices discourage a healthy diet. Science Advances. March 2022. 8;13. Available at: https://www.science.org/doi/10.1126/sciadv.abi8807
[54] WHO launches new guidelines on fiscal policies to promote healthy diets. World Health Organisation. June 2024. Available at: https://www.who.int/news/item/14-06-2024-who-launches-new-guideline-on-fiscal-policies-to-promote-healthy-diets
[55] Leach-Kemon K. To Encourage Healthy Eating, Use the Carrot, Not Just the Stick. December 2019. Available at: https://www.thinkglobalhealth.org/article/encourage-healthy-eating-use-carrot-not-just-stick
[56] Afshin A, Peñalvo JL, Del Gobbo L, et al. The prospective impact of food pricing on improving dietary consumption: A systematic review and meta-analysis. PLOS One. March 2017. 12(3):e0172277. Available at: https://doi.org/10.1371/journal.pone.0172277
[57] Ministry of Social Affairs of the Republic of Indonesia. Regulation of the Minister of Social Affairs Number 20 of 2019. On the Distribution of Non-Cash Food Assistance (Penyaluran Bantuan Pangan Nontunai). https://peraturan.bpk.go.id/Home/Download/120363/PERMENSOS%20NOMOR%2020%20TAHUN%202019.pdf; https://rsidrsubki.id/daftar-barang-sembako-2026-yang-bisa-dibeli-kpm-bukan-cuma-beras-dan-telur/
[58] Welcome to HealthyFood and HealthyCare. Discovery Health. Available at: https://www.discovery.co.za/vitality/help-healthyfood-healthycare

But consumer incentives alone are not sufficient to systemically correct this price distortion. They must be underpinned by clear, holistic and regularly updated dietary guidelines that set out a roadmap for all stakeholders across the agrifood value chain: shaping what is produced, processed, marketed and made affordable while ensuring outcomes that are equitable and sustainable for producers as well as consumers. The RFSI finds that although most countries use nutritional labelling to influence consumer choice, more than two-thirds have yet to evaluate and revise their dietary guidelines using a food systems-based approach[59]—one that aligns health outcomes with environmental sustainability and socioeconomic equity through co-ordinated action across agriculture, food processing, retail and public health.[60]

Finally, trade is another important lever for improving agrifood market outcomes. The RFSI reveals strong correlations between agricultural trade and both the affordability of a healthy diet (0.60) and total dietary diversity (0.62)[61], suggesting that trade lowers costs and widens choice. Open and diversified trade allows countries to offset domestic production constraints, geopolitical uncertainties and climate risks, linking freer flows of food not just to availability, but to more varied and nutritious diets.[62] This requires lower tariffs, greater international alignment on non-tariff barriers affecting agrifood imports (as discussed in later sections) and broader networks of import and export partners to reduce reliance on a handful of trading partners.[63]

[59] As captured by indicator *3.2.1) National dietary guidelines*

[60] 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.
Dietary guidelines: the next generation takes on sustainability. UN Nutrition. November 2024. Available at: https://www.unnutrition.org/news/dietary-guidelines-next-generation-takes-sustainability
Food Systems-Based Dietary Guidelines: An overview. FAO of the UN. 2024. Available at: https://openknowledge.fao.org/server/api/core/bitstreams/20b9fd77-47f5-46f0-bdd9-94f798620368/content

[61] As captured by the Dietary Diversity Score (DDS). The DDS is the number of food groups consumed the previous day or night, of the ten food groups used in the Minimum Dietary Diversity for Women indicator: 1) grains, white roots and tubers, and plantains; 2) pulses (beans, peas and lentils); 3) nuts and seeds; 4) dairy; 5) meat, poultry, and fish; 6) eggs; 7) dark green leafy vegetables; 8) other vitamin A-rich fruits and vegetables; 9) other vegetables; and 10) other fruits. The score ranges from 0 to 10 expressed as an average score for the population, with a higher score indicating inclusion of more food groups in the diet.
Global Diet Quality Project: Indicators. 2026. Available at: https://www.dietquality.org/indicators/definitions

[62] Trade against hunger: Exploring trade actions to fight acute food insecurity and the threat of famine. UN Trade & Development. December 2024. Available at: https://unctad.org/publication/trade-against-hunger

[63] Jafari Y, Engemann H, Zimmermann A. The multiple dimensions of resilience in agricultural trade networks. Q Open. September 2024. 4;2:qoae024. Available at: https://academic.oup.com/qopen/article/4/2/qoae024/7774464; Bruckner M. Measuring export concentration for identifying least developed countries. UN Committee for Development Policy: Background Paper No.59. October 2023. Available at: https://www.un.org/development/desa/dpad/wp-content/uploads/sites/45/CDP-bp-2023-59.pdf

Figure 6: Trade feeds resilience

Chart 1: Correlation b/w 1.4) Agricultural trade and 1.2) Affordability of a healthy diet

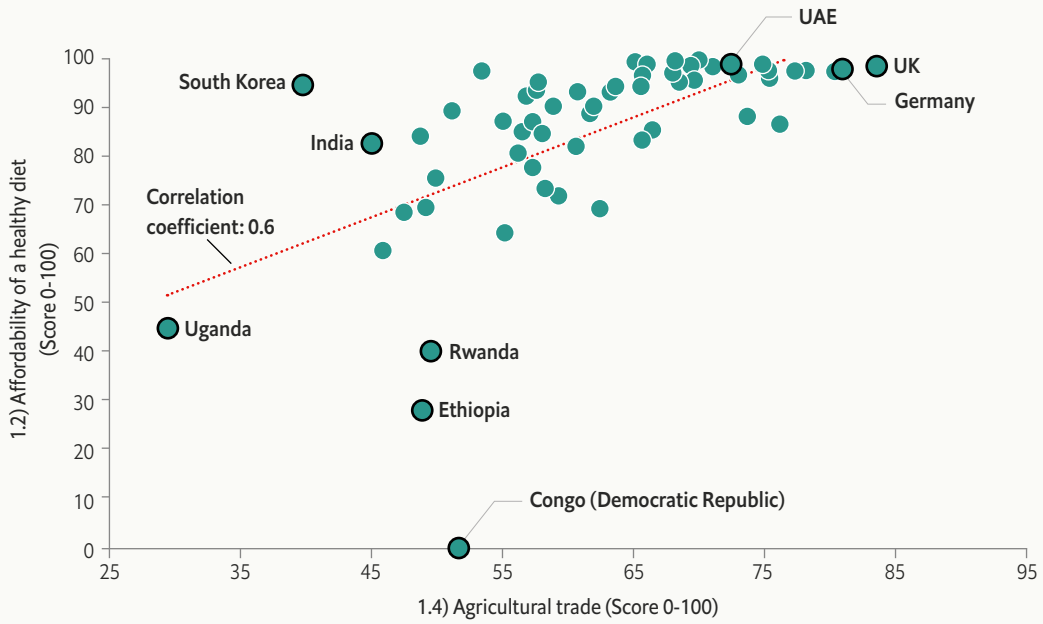
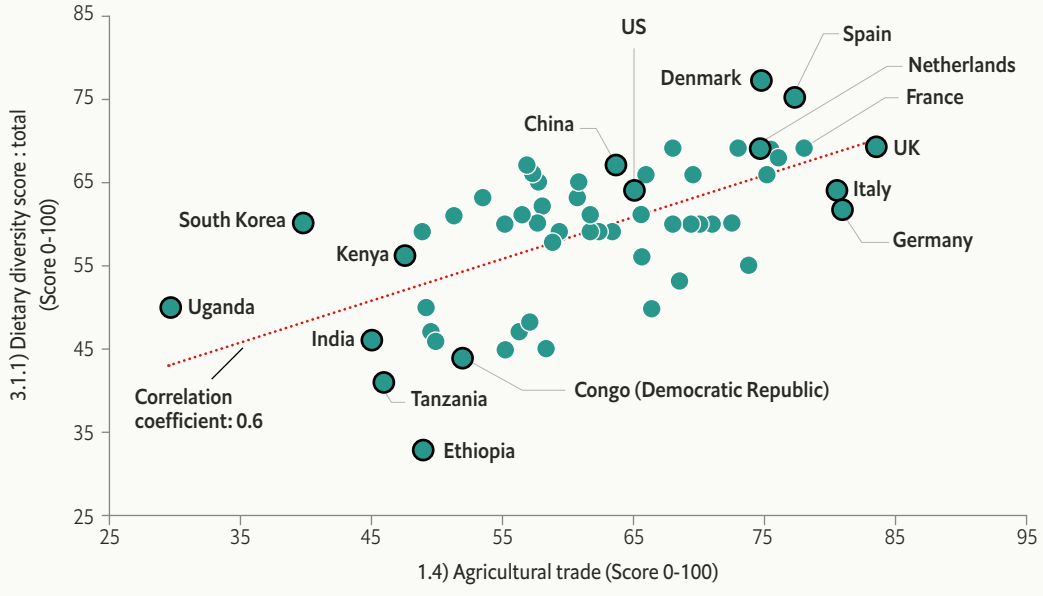


Chart 2: Correlation b/w 1.4) Agricultural trade and 3.1.1) Dietary diversity (total)

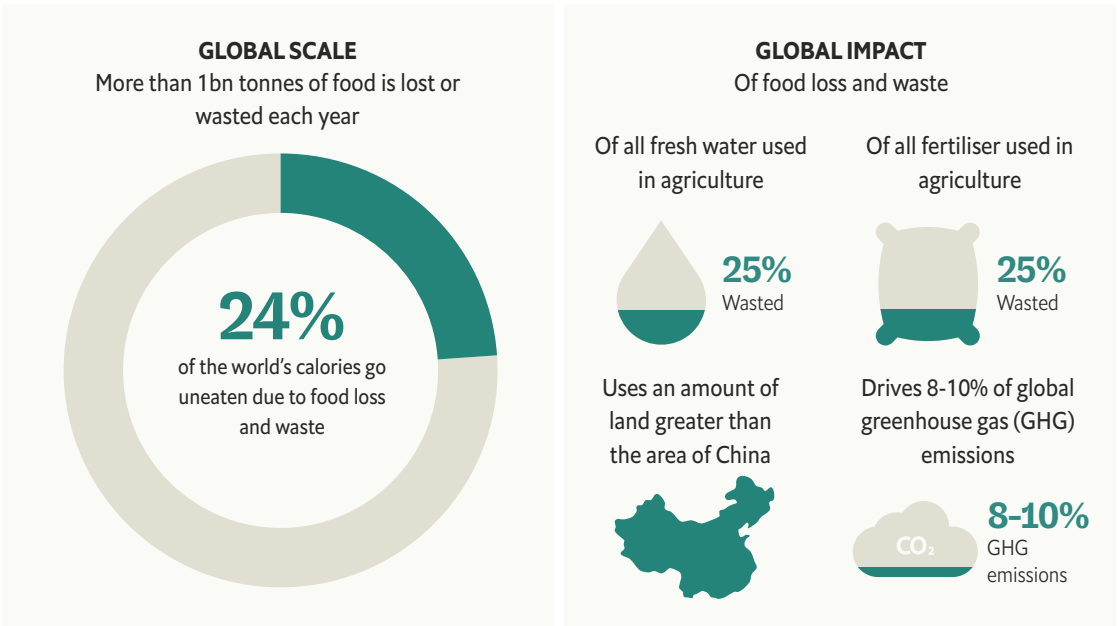


Source: Economist Impact research

Cutting food loss and waste: the fastest resilience gain hiding in plain sight

Food loss and waste disproportionately reduce perishable, nutrient-dense foods from markets before consumers ever see them. Cutting food loss and waste is one of the most practical, politically palatable levers for resilience. While production has expanded in many countries, weak transport, storage, cold-chain capacity and co-ordination continue to erode availability and affordability, particularly for perishable, nutrient-dense foods.[64] Globally, around 13.2% of food is lost between harvest and retail, while an estimated 19% of total food production is wasted in households, inflating the carbon footprint of food that is never consumed.[65]

Figure 7: The scale and impact of global food loss and waste

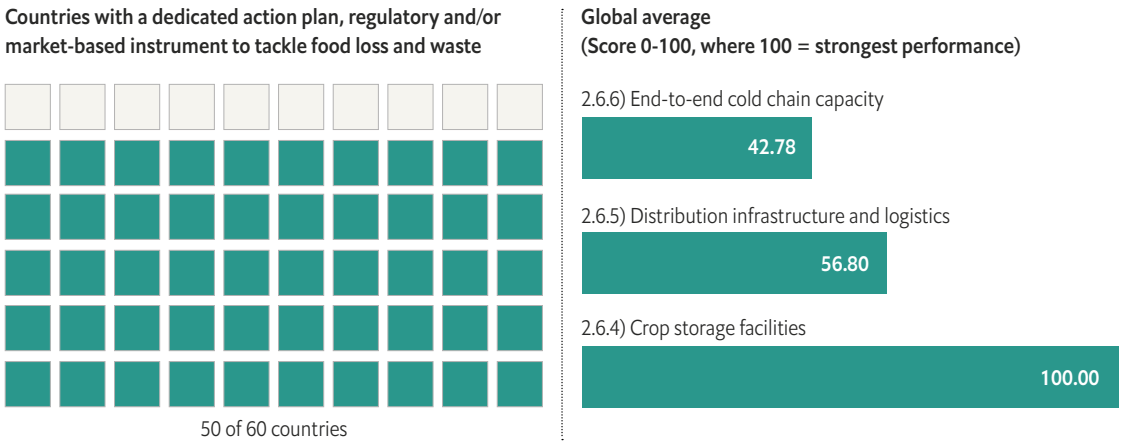


Source: World Resources Institute

[64] How can sustainable food cold chains help feed developing countries? UN Environment Programme. November 2022. Available at: https://www.weforum.org/stories/2022/11/sustainable-food-cold-chains-feed-developing-countries/
[65] International Day of Awareness on Food Loss and Waste Reduction. UN. September 2025. Available at: https://www.un.org/en/observances/end-food-waste-day

Policy intent is widespread: 50 out of 60 countries in the index have introduced either a dedicated action plan and/or a regulatory and/or market-based instrument to tackle food loss and waste.[66] Yet the RFSI reveals a persistent bottleneck beyond the farm gate. While all countries have invested in expanding crop storage capacity in the past five years, on average, countries score just 56.80 out of 100 on transportation and logistics infrastructure, which is a key component of minimising food loss. Furthermore, across the index, dedicated policy and investment to strengthen end-to-end cold chain capacity remains weak (with an average score of 42.78). Systems gaps such as these matter for both equity and emissions; where they can be addressed, the gains can multiply. In Nigeria, which scores 66.67 on end-to-end cold chain capacity, the installation of 58 ColdHubs[67] (delivered through a pay-as-you-store model) has prevented the spoilage of more than 2,400 tonnes of food, primarily fresh fruits and vegetables. By halving post-harvest losses, the initiative has raised incomes for more than 6,300 smallholder farmers, traders and wholesalers by around 50%, effectively doubling monthly earnings.[68]

Figure 8: Policy intent versus action on cutting food loss



Source: Economist Impact research

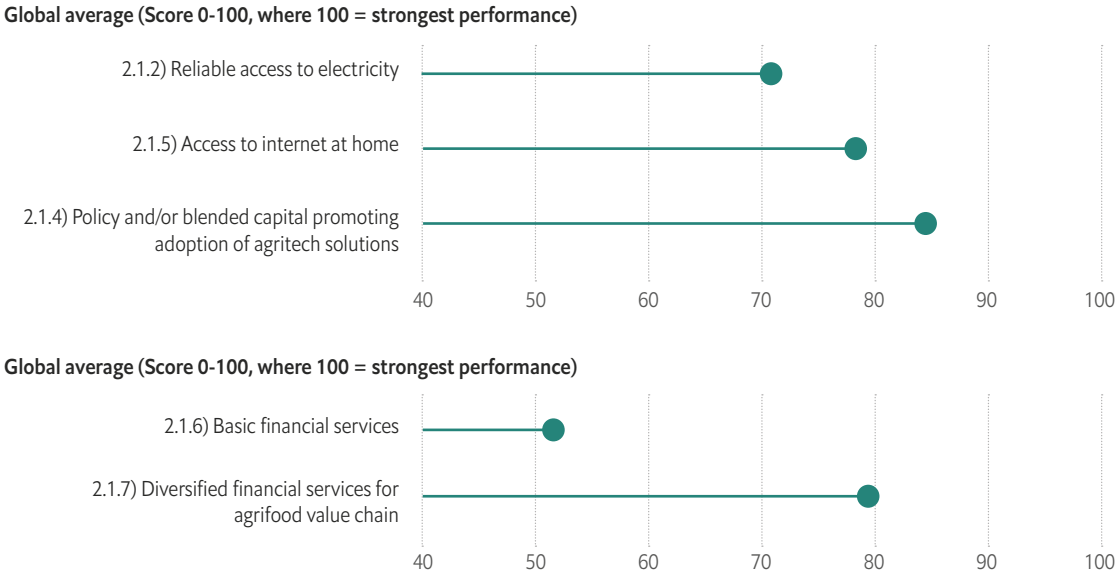
[66] As captured by indicator 2.6.3) Policy interventions to tackle food loss and waste
[67] 58 hubs, 80 jobs for women, 2.4m kg of CO2 saved: ColdHubs 2022 Impact Data in Full. ColdHubs. 2022. Available at: https://coldhubs.com/2023/01/31/2023-1-31-58-hubs-80-jobs-for-women-24m-kg-of-co2-saved-coldhubs-2022-impact-story-in-full/
[68] Sustainable food cold chains: Opportunities, challenges and the way forward. Nairobi, UNEP; Rome, FAO. 2022. Available at: https://doi.org/10.4060/cc0923en

Closing the gaps: connecting farmers to markets, data and capital

Digital tools can unlock access to market information and finance, supporting more inclusive and resilient livelihoods, particularly for smallholder farmers. Technological change also offers practical solutions to agriculture's structural constraints, from remoteness and service access to outdated business models that separate producers from consumers.[69] To this end, most countries covered in the RFSI are deploying policy and blended capital to promote adoption of agritech solutions (with an average score of 84.45). But leveraging digital agriculture technologies hinges on reliable electricity and broadband connectivity. Rural areas in particular face persistent barriers in accessing the internet, weak connectivity, high entry costs, limited digital skills and concerns over data ownership and privacy.[70] These constraints disproportionately affect smallholder farmers, who are most exposed to climate and market shocks. As market complexity intensifies, digital inclusion and reliable electricity emerge as core determinants of resilience in farming systems.[71]

[69] The State of Food Security and Nutrition in the World 2025. FAO; IFAD; UNICEF; WFP; WHO. 2025. Available at: https://doi.org/10.4060/cd6008en
[70] Innovation and digital in agriculture. Organisation for Economic Co-operation and Development (OECD). Available at: https://www.oecd.org/en/topics/sub-issues/innovation-and-digital-in-agriculture.html
[71] McFadden J, Casalini F, Griffin T, Antón J. The Digitalisation of Agriculture: A Literature Review and Emerging Policy Issues. OECD Food, Agriculture and Fisheries Paper. April 2022. 176. Available at: https://www.oecd.org/content/dam/oecd/en/publications/reports/2022/04/the-digitalisation-of-agriculture_dd2a1973/285cc27d-en.pdf

Figure 9: Built high, not wide: state of enabling technology, infrastructure and finance for agriculture



Source: Economist Impact research

Moreover, digital agritech's most powerful contribution in emerging economies may lie less in frontier high-tech solutions than in widening access and inclusion to enable adoption at scale.[72] The index shows that several countries already possess a strong foundation for communication: access to extension services and information dissemination[73] performs relatively well, with an average score of 71.67. In practice, this creates an opportunity to build resilience through hybrid models combining high and low-tech approaches. Crucially, the transmission of satellite-derived insights and weather forecasts does not depend on high-bandwidth platforms. Radio, television and SMS remain effective channels for alerts and advisory services, particularly in low-connectivity and low-literacy settings. Policies and investments that prioritise context-appropriate design—ie, tools that function on basic mobile networks and link directly to extension services—can deliver rapid gains for smallholders. Hello Tractor, for example, uses mobile and GPS technology to connect African farmers with nearby tractor owners, easing one of smallholder agriculture's most persistent constraints.[74] Shifting from ownership to an equipment-hire model lowers capital barriers to mechanisation without burdening farmers with debt or underused assets.

Banking on resilience: the case for strengthening basic financial inclusion

Despite growing innovation in agricultural finance, weak access to basic financial services remains a binding constraint on resilience across food systems. The RFSI records an average score of just 51.53 for access to foundational services such as formal savings accounts, credit and payments, with more than half of countries falling below this already modest benchmark.[75]

[72] Improving agricultural information and extension services to increase small-scale farmer productivity. Latif Jameel Poverty Action Lab (J-PAL). September 2023. Available at: https://www.povertyactionlab.org/policy-insight/improving-agricultural-information-and-extension-services-increase-small-scale
[73] As measured by indicator 2.2.3) Access to extension and information dissemination
[74] Hello Tractor. Available at: https://hellotractor.com/
[75] As captured by 2.1.6) Basic financial services, a composite indicator tracking the share of population with access to a *savings account* at a bank or another type of financial institution, or who report personally using a mobile money service and *formal sources of credit* via borrowing from a bank or similar financial institution or via a mobile money service.

These gaps undermine risk management at scale and slow the uptake of more sophisticated financial instruments across the agrifood chain. Without inclusive financial foundations, capital struggles to reach smallholders and agri-SMEs at the farm gate, limiting their ability to build resilience.

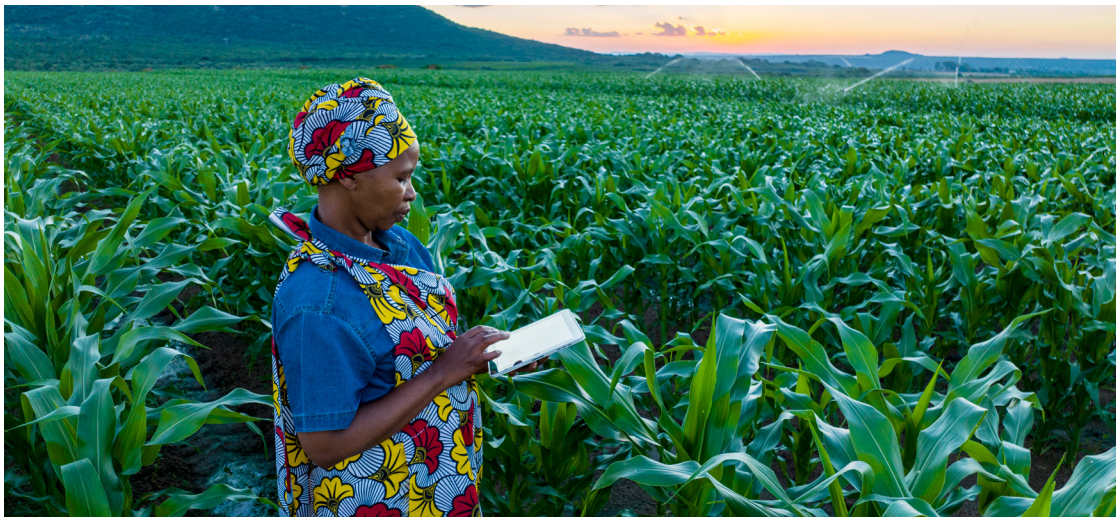
This matters because financial inclusion is a core productivity lever, yet globally, smallholders and agri-SMEs remain among the most underbanked economic actors, despite supplying a large share of the world's food.[76] Smallholder farmers face an annual financing gap of more than US$200bn, with credit demand exceeding US$323bn a year while supply reaches only US$95bn globally.[77] Farm households that can access formal credit and banking services are significantly more likely to adopt, and intensively use, modern farm inputs, including fertiliser and improved seed; this translates into higher yields and more resilient production outcomes, according to a study in Nigeria.[78] The study also finds that liquidity constraints remain a major barrier for many farmers. Where finance is absent, risk aversion dominates and input use is rationed, limiting productivity.

Most countries in the RFSI provide comprehensive and diversified financial services across the agrifood value chain, with a high average score of 79.44.[79] Encouragingly, newer financial instruments are beginning to correct agriculture's long-standing mismatch between risk and return. Climate- and nature-linked insurance products have expanded rapidly across Africa, Asia and the Caribbean, using parametric triggers to accelerate payouts and improve recovery after climate shocks.[80] Guarantees and risk-sharing facilities are also unlocking bank lending at scale. The International Finance Corporation has de-risked credit for agri-SMEs in fragile markets through targeted guarantee programmes.[81] Meanwhile, low-tech instruments such as warehouse receipt systems—backed by multilaterals—are restoring access to liquidity by allowing stored crops to serve as collateral.[82] Longer-term capital is increasingly being mobilised through labelled instruments, with the European Investment Bank scaling bond-backed lending for sustainable farming and food processing under its climate mandate.[83,84] Together, these tools extend finance beyond traditional credit, better aligning it with farming realities and the diverse needs of stakeholders across the value chain.

[76] Covo A. Financial Inclusion of Agricultural Cooperatives & SMEs in Africa: Market Status. Ksapa. June 2025. Available at: https://ksapa.org/financial-inclusion-of-agricultural-cooperatives-smes-in-africa/
[77] ISF Advisors Launches Global Report on $200B+ Smallholder Finance Gap Amid Rising Climate Pressures. ISF Advisors. October 2025. Available at: https://isfadvisors.co/global-report-smallholder-finance/
[78] Balana B, Olanrewaju O. Financial Inclusion, Agricultural Inputs Use, and Household Food Security. International Food Policy Research Institute Discussion Paper 02293. November 2024. Available at: https://cgspace.cgiar.org/server/api/core/bitstreams/be62b2f0-33df-402c-bd27-955899e65097/content
[79] As captured by indicator *2.1.7) Diversified financial services for agrifood value chain*
[80] Global Shield Against Climate Risks. Available at: https://www.globalshield.org/
[81] IFC Provides Local Currency Support to Access Bank to Expand SME Lending in Sierra Leone. International Finance Corporation. September 2025. Available at: https://www.ifc.org/en/pressroom/2025/ifc-provides-local-currency-support-to-access-bank-to-expand-sme-lending-in-sierra
[82] Agribusiness and Value Chains. World Bank Group. Available at: https://www.worldbank.org/en/topic/agribusiness
[83] InvestEU: The EIB and CrowdFarming sign a loan to support a sustainable food supply chain and organic farmers in Europe. European Commission. September 2023. Available at: https://ec.europa.eu/commission/presscorner/detail/sl/ip_23_4448
[84] €3 billion of EIB Group financing announced for farmers and bioeconomy. European Investment Bank Group. December 2024. Available at: https://www.eib.org/en/press/all/2024-497-eur3-billion-of-eib-group-financing-announced-for-farmers-and-bioeconomy

Connecting farmers: why access to trade determines whether productivity gains stick

Digital tools and finance are necessary enablers, but without functioning markets that reward output, they risk improving efficiency at the farm gate without enhancing productivity and livelihoods. The RFSI records broad blended market-access support for smaller-scale or vulnerable farmers (via interventions such as preferential public procurement and contract farming arrangements with agribusinesses) with a strong average of 87.50.[85] However, market-access support is insufficient on its own. Across index countries, the average score for annual growth in prices received by farmers for their output, measured using the FAO's Producer Price Index, is just 42.05.[86] High transport costs, poor connectivity, isolation and weak intermediary markets limit profitable participation, particularly for smallholders, reducing incentives to invest in productivity-enhancing inputs and practices, reducing yields and profits.[87] Studies show that targeted interventions can materially improve smallholder outcomes. While pre-season buyer agreements can encourage farmers to invest in inputs and raise yields and incomes,[88] post-harvest storage, paired with credit, allows produce to be sold when prices peak.[89,90] Meanwhile, digital links between farmers and traders can improve price discovery and market matching. In Uganda, a digital platform that shared frequent maize price information via SMS strengthened connections between farmers and traders, increasing the flow of maize across nearby markets. Better information reduced price dispersion and volatility for farmers, particularly in surplus-producing areas.[91]



[85] As captured by indicator 2.6.2) Blended market access support for smaller-scale farmers
[86] As captured by indicator 2.6.1) Agricultural producer prices which tracks the average annual percentage change in the selling prices received by farmers between 2019 and 2024. Available at: FAOSTAT: https://www.fao.org/faostat/en/#data/PP
[87] Increasing small-scale farmers' access to agricultural markets. J-PAL. January 2025. Available at: https://www.povertyactionlab.org/policy-insight/increasing-small-scale-farmers-access-agricultural-markets
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Even if local market links improve, fragmented and inconsistent trade rules can still choke demand and limit cross-border opportunities. Reducing divergence in non-tariff measures (NTMs)—notably sanitary and phyto-sanitary measures and technical barriers to trade—can materially lower trade costs and improve market access for farmers without diluting safety or quality standards.[92] While NTMs serve legitimate functions, evidence shows their cost-raising effects dominate when regulations differ across markets; this is driven by duplicative compliance and conformity assessments that suppress trade volumes and competitiveness.[93] These burdens fall hardest on smallholders and exporters from developing regions who often lack the scale and capital to conform to multiple compliance standards, reducing trade volumes across Africa and Asia-Pacific.[94,95,96] Across RFSI countries, the number of NTMs applied to imported agricultural and food products ranges from zero to 1,806, underscoring a wide variation in regulatory intensity and the uneven compliance burden facing exporters. Empirical studies consistently find that greater regulatory distance reduces trade flows, while alignment, equivalence or mutual recognition preserves protective intent and cuts costs.[97]

[92] 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/10.1787/81933f03-en
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Conclusion

The RFSI's central message is that food-system resilience is the product of policy choices, alignment and delivery. Areas of resilience, such as food affordability, offer only a partial buffer where access remains unequal and nutrition outcomes lag, underscoring the need to rebalance policies towards healthier diets rather than calories alone. The constraint is not due to a lack of ambition or innovative solutions; instead, it stems from the failure to scale what already works into system-wide outcomes. Closing this gap requires prioritising the foundations that enable scale. Persistent shortfalls in electricity, connectivity, transport and cold chains continue to limit farmers' access to markets and services, preventing proven technologies and financial tools from delivering resilience at scale. Where these basics are weak, policy ambition dissipates before it reaches the farm gate or the consumer. Targeted public-private investment in these enablers would unlock productivity and reduce food loss, which in turn could widen access to nutritious food.

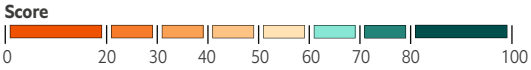
Climate risk sharpens these fault lines. Innovation in low-emissions and sustainable agriculture is advancing, but resilience depends on execution at scale. The gap between strong support for innovation and weak agriculture-specific mitigation and adaptation targets leaves food systems exposed to mounting climate and natural-resource stress. The next phase of resilience must be focused on delivery by embedding agriculture firmly within climate strategies, setting clear and measurable sectoral targets and directing finance towards deployable, context-specific solutions. Elements of food-system resilience are already visible in practice, but unevenly applied. Lifting the most vulnerable and strengthening the system as a whole will depend on sustained, co-ordinated investment in the foundations that allow systems to function in the good times and endure shocks when they arrive.

APPENDIX 1

RFSI 2026 results

Table 2. 2026 RFSI overall rankings table

Weighted total of all pillar scores (0-100 where 100 = strongest performance)



Rank / 60	Country	Score / 100
1	Portugal	76.83
2	France	76.75
3	UK	76.34
4	US	75.30
5	Japan	74.39
6	Netherlands	73.51
7	Germany	73.50
8	Denmark	73.19
9	Singapore	73.00
10	Malaysia	72.98
11	Poland	72.33
12	Australia	71.92
13	Belgium	71.74
14	Spain	71.52
15	Italy	71.39
16	South Korea	70.78
17	China	70.13
18	Canada	70.08
19	Qatar	69.89
20	Chile	69.76
21	Brazil	69.71
22	Czech Republic	69.52
23	Costa Rica	69.37
24	Saudi Arabia	68.40
25	Argentina	68.31
26	United Arab Emirates	68.16
27	Greece	68.08
28	Israel	67.02
29	Indonesia	66.52
30	Peru	65.12
31	Vietnam	64.72
32	Algeria	64.66
33	Bangladesh	64.06
34	Philippines	63.82
35	Mexico	63.79
36	Hungary	63.17
37	Jordan	62.81
38	South Africa	62.65
39	Egypt	62.18
40	India	62.12
41	Colombia	60.89
42	Guatemala	59.67
43	Paraguay	58.73
44	Thailand	57.66
45	Sri Lanka	56.91
46	Ghana	56.89
47	Turkey	56.68
48	Honduras	56.42
49	Pakistan	56.04
50	Tanzania	53.92
51	Nicaragua	53.45
52	Romania	52.44
53	Lebanon	51.65
54	Rwanda	50.69
55	Namibia	50.43
56	Ethiopia	49.86
57	Nigeria	49.64
58	Uganda	48.25
59	Kenya	48.03
60	Congo (Democratic Republic)	34.86

APPENDIX 2

Methodology

A variety of research methodologies informed the development of the RFSI. To build the index framework, Economist Impact conducted an extensive literature review and data audit. Findings were distilled using a political, economic, social, technological, legal and environmental (PESTLE) landscape analysis, thematic gap analysis of existing food system benchmarks and metrics, and relevance analysis to identify the most important determinants of food system resilience across the four pillars. The index framework was validated and refined in consultation with our independent advisory board, who also provided inputs on the weighting scheme of the four pillars and their underlying indicators and sub-indicators.

In the RFSI, data for the quantitative indicators are drawn from national and international statistical sources. Where there were missing values in quantitative or survey data, Economist Impact has used estimates. Estimated figures have been noted in the model workbook. Of the qualitative indicators, some have been created by Economist Impact, based on information from development banks and government websites, while others have been drawn from a range of surveys and data sources and adjusted by the Economist Impact team.

Key sources used in the RFSI are EIU, the World Bank Group, the UN Food and Agriculture Organisation, the World Health Organisation, the World Trade Organisation, the Organisation for Economic Co-operation and Development, the World Resources Institute and national agriculture and health ministries. The full list of indicator-specific sources can be found in the index workbook.

Independent advisory board

The independent advisory board consisted of nine experts from the agrifood sector. Representing key stakeholder perspectives—from academia, non-profit, multilateral sectors as well as senior practitioners and technical experts—the advisory board brought together influential players in the food ecosystem from Sub-Saharan Africa, Asia-Pacific, Europe, Latin America and the Caribbean, Middle East and North Africa, and North America.

Participants (listed alphabetically)

Independent expert panellists	
Name	**Affiliation**
Berry J. Marttin	Farmer and Independent Board Member **Rainforest Alliance, GAIN, Hans R Neumann Foundation, Koppert and Driscoll's**
Grant Sprick	Vice President, Climate and Environment **Ahold Delhaize**
Jessica Fanzo, PhD	The James Anderson Professor of Food Policy and Climate The School of Advanced International Studies (SAIS) Europe **The Johns Hopkins University** Bologna, Italy
Josef Schmidhuber	Chief Sustainability Officer **Pure Harvest Smart Farms**
Lina Salazar	Lead Economist Environment, Rural Development and Disaster Risk Management **Inter-American Development Bank**
Purvi Mehta	Senior Advisor, Global Growth and Opportunities division **The Gates Foundation**, Adjunct Professor Department of Global Development **Cornell University**
Rhoda Mofya-Mukuka, PhD	National Coordinator, Nutrition and Food Security (Zambia) **Food and Agricultural Organisation of the United Nations**
Rob Vos	Senior Research Fellow, Markets, Trade and Institutions **International Food Policy Research Institute**
Sergiy Zorya	Global Lead for Agricultural Policy and Public Expenditures **World Bank Group**

Country selection

To create a representative model of the global food system, the 60 countries were selected on the basis of regional and income diversity as well as their influence on and exposure to the following key global food supply and demand determinants.

Supply side determinants: Agricultural output and productivity; export strength and value chain depth; agricultural technology and innovation leadership; climate and environmental resilience; infrastructure and logistics; and resource management.

Demand side determinants: Total food demand (in terms of volume and value); import dependency and market influence; GDP; prevalence of stunting and undernourishment.

Countries' classification into regions and income groups is based on the World Bank Group's July 2025 classification (latest available). Ethiopia was unclassified in the income groups in this latest version. Therefore, historic classification of Ethiopia (low-income) is used.

Weightings

The default weighting scheme for RFSI's four pillars and their underlying indicators and sub-indicators was determined based on Economist Impact's research on the relative importance of different drivers of food system resilience and consultations with the independent advisory board. These default weights can be changed in the Custom Weights section of the RFSI website to reflect alternative assumptions on the relative relevance of the four pillars to food systems resilience.

Data modelling

Indicator scores are normalised and then aggregated across pillars to enable a comparison of broader concepts across countries. Normalisation rebases the raw indicator data to a common unit so that it can be aggregated.

The indicators for which a higher value indicates a more favourable environment for food system resilience—such as access to a formal savings account or adoption of agritech solutions—have been normalised on the basis of: x = (x – Lower threshold(x)) / (Upper threshold(x) – Lower threshold(x)) where Lower threshold (x) and Upper threshold (x) are specified for all series.

For the indicators for which a high value indicates an unfavourable environment for food system resilience—such as land degradation risk or political stability risk—the normalisation function takes the form of: x = (x – Upper threshold(x)) / (Upper threshold(x) – Lower threshold(x)) where Lower threshold(x) and Upper threshold(x) are specified for all series.

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