

MENA Region and Global Context

The **Middle East and North Africa (MENA)** region faces mounting environmental and climatic challenges that threaten food and water security. The **World Meteorological Organization (WMO)** has issued a warning describing a historic crisis that could lead to **118 million Africans being at risk of droughts and flooding by 2030**. This alarming forecast underscores the urgency for adaptive strategies to mitigate the escalating impacts of climate change across vulnerable regions, particularly in MENA.

Water Security

In North Africa, **Morocco** exemplifies both the challenges and temporary relief offered by shifting weather patterns. After experiencing a **28% drop in rainfall in 2023**, the country recently **benefitted from heavy rains that have filled dams** to levels unseen in years. This has offered a crucial reprieve for the agricultural sector, which is especially dependent on precipitation, as **only 20% of Morocco's farmland is irrigated**. Neighbouring **Algeria** and **Tunisia** continue to grapple with worsening drought conditions. Algeria reported a **12% decline in cereal harvests**, while Tunisia experienced the most severe impact in the MENA region, with **cereal production plummeting by 80%**. These reductions are particularly troubling given the region's heavy reliance on cereal crops for food security. In **Iraq**, the crisis continues intensifying. The country is confronting severe water scarcity, with **90% of its rivers now polluted** and **water resources projected to meet just 15% of national needs by 2035**. Desertification has halved Iraq's arable land, **with 10,000 hectares lost annually**. Over the past decade, **irrigated agricultural land has declined by 61%**, compounding the country's food insecurity.

Agriculture

Egypt, where **agriculture contributes 12% to the national GDP**, faces a different set of climate-related threats. Rising sea levels and saltwater intrusion in the Nile Delta are endangering vital agricultural lands. Strategic crops such as **wheat, mangoes, soybeans, and olives have already shown significant declines**. In response, the Egyptian government has taken proactive steps, including **securing wheat supplies through June 2025**, to stabilize food resources amid growing environmental uncertainty.

Aquaculture

Despite these sobering trends, some countries are making strides toward sustainable adaptation. **Oman**, for example, has **launched its first sustainable marine fish farming project**, using **Recirculating Aquaculture System (RAS)** technology to cultivate Sea Bream. This initiative reflects a growing regional commitment to sustainable aquaculture, offering a forward-looking approach to enhancing food security.

UAE Developments

In the first quarter of 2025, the **United Arab Emirates (UAE)** has made significant strides in addressing food and water security, reflecting its commitment to sustainability and innovation. The UAE's efforts are underscored by a series of initiatives and partnerships aimed at enhancing agricultural productivity, reducing food waste, and ensuring water availability in the face of climate change challenges.

Food Security

One of the key developments in this period is the UAE's focus on **sustainable agriculture**, highlighted by the partnership between the **UAE** and **South Korea** to **launch an AI-powered smart farm** in ****Abu Dhabi. This collaboration involves **Pure Harvest Smart Farms, Al Dahra**, and **PlanTFarm**, utilizing advanced vertical farming technology to optimize resource efficiency. The farm aims to reduce the UAE's reliance on imported animal feed by **using 95% less water per kilogram** compared to traditional farming methods. This aligns with the UAE's broader strategy to foster a sustainable and scalable local farming solution, with a focus on **commercial-scale production of animal fodder** and premium crops like strawberries and leafy greens. SOMA believes **feed security is becoming increasingly vital for food security** in the MENA region, driven by the expansion of aquaculture and poultry projects. **Feed inputs represent the highest cost in animal protein production**. While large agricultural nations can support their animal production through domestic feed supplies, the global feed market plays a dominant role in today's interconnected system. GCC countries, with their limited production capabilities, are particularly dependent on these markets. Developments like these in the UAE reflect the need to secure and localize feed production.

In parallel, the UAE has been addressing food waste, particularly during Ramadan. **Deliveroo**, in collaboration with the **UAE Food Bank**, collected surplus food from partners and redistributed it to communities in need. In 2024, the UAE Food Bank successfully **diverted 5,466 tonnes of food from landfills**, aiming to reduce food waste by 30% by 2027. For context, an estimated **3.27 million tonnes of food are wasted annually in the UAE**. This effort is complemented by initiatives like **Conrad Dubai's** AI-driven tracking system, which **reduced food waste by 50%** during Ramadan as part of their Green Ramadan initiative. The initiative, in partnership with the **United Nations Environment Program West Asia** and **Winnow's** AI technology, has already prevented thousands of meals from being wasted. These interventions enable better decision-making in hospitality and restaurant kitchens and become critical at a major source of waste in the economy.

***Winnow** is a software company in Dubai that helps the food service and hospitality industry reduce food waste by making kitchens smarter. Using Winnow Vision, an AI-enabled tool, kitchens can automatically track food waste, cut costs, and save time. The system photographs discarded food items and, through machine learning, trains itself to recognize what is being thrown away.*

Water Security

Water security remains a critical concern for the UAE, given its arid climate and limited natural water resources. The **UAE Research Program for Rain Enhancement Science (UAERP)** continues to explore innovative solutions to increase rainfall. The program's **sixth cycle is now open** for research proposals, with **grants of up to \$1.5 million available for winning projects**. Notably, nanotechnology-based cloud-seeding materials have demonstrated a **300% increase in large water droplets** compared to conventional methods. This advancement, developed at the **National Centre of Meteorology's Emirates Weather Enhancement Factory**, represents a promising step towards enhancing the UAE's water resources.

Moreover, the UAE's collaboration with **Cyprus** to address water scarcity through mobile desalination units exemplifies its commitment to international cooperation in tackling water challenges. Cyprus, facing a severe water crisis **with reservoirs at only 26% capacity**, is working with UAE's **TAQA** to implement both **mobile and permanent desalination** solutions. While desalination offers a viable solution, it also presents environmental challenges, such as high energy consumption and marine ecosystem disruption, which the UAE is keen to address.

The UAE's efforts in food and water security are further supported by strategic partnerships and agreements. The Memorandum of Understanding (MoU) signed between **H.H. Sheikh Abdullah bin Zayed Al Nahyan** and **Denmark's Minister of Foreign Affairs, Lars Løkke Rasmussen**, underscores the UAE's commitment to sustainable agricultural and food systems. This agreement aims to enhance bilateral cooperation across various sectors, including health, renewable energy, and artificial intelligence, supporting the developmental priorities of both countries.

Saudi Arabia Developments

Aquaculture

A key development in Saudi Arabia was the **launch of the largest regional salmon production center**, aiming to **produce 100,000 tons of salmon annually**. This initiative is a strategic move to reduce Saudi Arabia's dependency on **salmon imports, which currently stand at 23,000 tons per year**. This project is part of a broader effort to achieve self-sufficiency in various food products, including figs and poultry, and reflects the Kingdom's commitment to food security and economic diversification. In parallel, the **General Food Security Authority (GFSA)** initiated its second **field survey to measure food loss and waste** across the food supply chain. This comprehensive analysis aims to address inefficiencies from production to consumption, thereby enhancing food security and contributing to the Kingdom's sustainability goals. The survey is particularly timely given Saudi Arabia's ranking of **41st in the Global Food Security Index 2022, ranking behind other regional countries including the UAE, Qatar, Oman, and Bahrain** (Figure 1). Saudi Arabia scored lowest in sustainability and adaptation, particularly in water management and political commitment to adaptation (Figure 2).

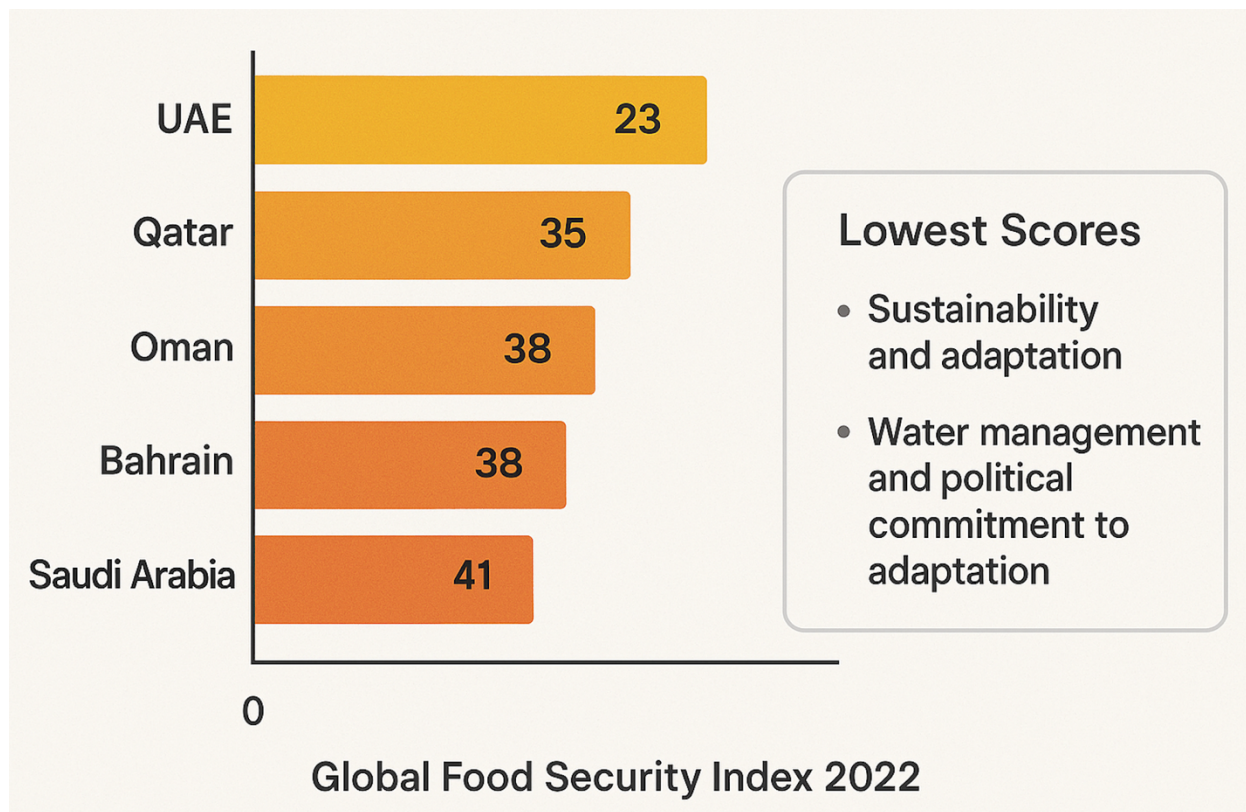


Figure 1: Economist Impact (Global Food Security Index 2022)

Sustainability and Adaptation

● Saudi Arabia

Mean average: all countries in index (113)

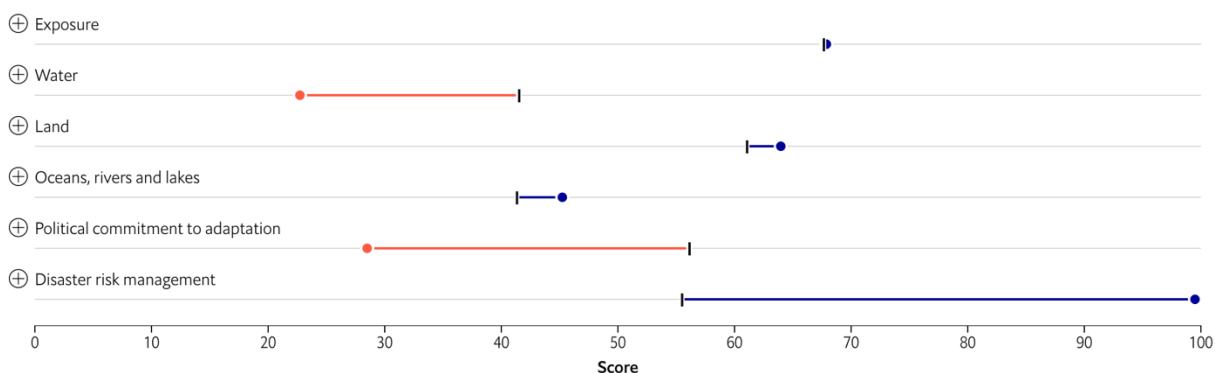


Figure 2: Economist Impact (Global Food Security Index 2022)

Agriculture

In the agricultural sector, Saudi Arabia has announced **plans to increase funding to \$2 billion in 2025**, up from \$1.9 billion in 2024. This funding boost is aimed at supporting supply chain and marketing projects, providing loans to small farmers, and enhancing local production capabilities in areas such as poultry, greenhouse vegetables, and fish farming. The **Agricultural Development Fund** has played a crucial role in this expansion, with its **contribution to the agricultural sector's GDP growing from 3.6% in 2016 to 11% in 2024**. The privatization of the flour milling sector could position Saudi Arabia as a key wheat flour exporter. The **relaxation of government controls over wheat procurement** and the strategic location of the Kingdom provide a competitive advantage in the export market. This shift is part of a broader privatization program under Vision 2030, aimed at enhancing the role of the private sector and improving service delivery across various sectors.

Additionally, a partnership between **ARASCO** and **Bühler** to modernize **feed production** underscores the Kingdom's commitment to integrating advanced technologies and promoting sustainability in its agricultural practices. This collaboration supports Saudi Arabia's goal of producing **600,000 tonnes of seafood via aquaculture by 2030**, further contributing to food security.

Water Security

Water security has also been a focal point, with the launch of **73 regional water, sanitation, and agricultural projects in Jazan**, valued at over **SAR4.7 billion**. These projects are designed to replace outdated technology, improve water transport systems, and enhance agricultural productivity, thereby supporting Vision 2030's sustainability objectives. The **National Water Company** and the **Saudi Water Authority** have been important in implementing these initiatives, which include the development of mangrove planting projects and the establishment of labs for pesticide sensitivity and chemical analysis of agricultural products.

Egypt Developments

Food Security

One of the most notable shifts in Egypt's food security strategy has been the transition of wheat purchasing responsibilities from the **General Authority for Supply Commodities (GASC)** to the military-run entity, **Mostakbal Misr**. This change has led to a **10% increase in domestic wheat prices**, as Mostakbal Misr's purchasing model relies heavily on local importers rather than direct international tenders. Despite these challenges, Mostakbal Misr has managed to **secure contracts for 2.7 million metric tons of wheat**, with approximately **850,000 tons delivered so far**. However, the agency continues to depend on GASC for managing financing arrangements, complicating the purchasing process and raising concerns among traders about the transparency and efficiency of financial operations.

In parallel, Egypt has been actively working to bolster its food security through international partnerships and financial agreements. One example is the **\$93.9 million soft funding agreement with the European Commission**, aimed at enhancing Egypt's grain storage and logistics infrastructure. This funding is part of the broader ***Food Resilience Project***, which includes additional grants and financing from the **European Union** and the **World Bank**. The initiative seeks to improve wheat import and storage efficiency, with GASC utilizing the funds to **expand wheat silo storage capacities** across the country. ***The National Project of Silos*** aims to construct **50 silos with a total capacity of 1.5 million tons**, distributed across 17 governorates, ensuring long-term, high-quality grain storage.

The first quarter of 2025 also saw **Egypt's food exports reach 230,000 tonnes in one week**, marking **an increase of 33,000 tonnes** compared to the previous week. This surge in exports, which included **63,000 tonnes of vegetables**, underscores Egypt's efforts to leverage its agricultural sector to reduce the trade deficit and support economic growth. The country's top importing partners during this period were **Saudi Arabia, Russia, the Netherlands, and Turkey**.

Egypt's collaboration with **Japan** and the **International Center for Agricultural Research in the Dry Areas (ICARDA)** has been important in addressing water security challenges. The project, titled *"Reversing Egypt's Diminishing Food Security,"* focuses on improving agricultural resilience, optimizing resource use, and strengthening rural livelihoods in key governorates such as **Qena, Menya, and Kafr El Sheikh**. By introducing green energy-powered irrigation systems and promoting modern cultivation techniques, the initiative aims to enhance agricultural productivity and sustainability.

SOMA believes changes and reorganization in Egypt reflect the country's proactive approach to **managing risks in an increasingly volatile region**. With ongoing regional tensions, water security challenges from the **Grand Ethiopian Renaissance Dam (GERD) crisis**, and growing refugee pressures, the decision is strategically sound. By centralizing strategic commodity imports, Egypt has been prioritizing creating a buffer against potential social unrest—a lesson learned from past incidents where bread shortages sparked significant protests.