Food Security: A Challenge in Times of Routine and Emergency

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The war in Gaza has sharpened the understanding in Israel that national resilience depends, inter alia, on the ability to produce and provide food in routine times and in states of emergency. A primary challenge apparent in the food production and distribution system in Israel as a result of the war is the severe shortage of human resources along the supply chain, particularly in agriculture. The dependence of the Israeli food system on imports might undermine its stability in the face of two principal challenges: climate changes, which may reduce the volume of grain produced in countries exporting to Israel; and geopolitical risks, which may harm import routes. Therefore, any national food security strategy should consider all goals of the local food system, from reducing carbon emissions to ensuring the entire population's access to healthy, nutritious food, while balancing the various risks and the ways that local production and imports can address them.

The war in Gaza has sharpened the understanding in Israel that national resilience depends, inter alia, on the ability to produce and provide food routinely and in states of emergency. A primary challenge apparent in the food production and distribution system in Israel as a result of the war is the severe shortage of human resources along the supply chain, particularly in agriculture. Israeli agriculture, which relied mainly on Palestinian and foreign labor, lost an estimated 30,000 workers due to the war. According to the Ministry of Agriculture, this, together with the lack of access to areas near combat zones, has led to an estimated shortage of some 30 percent in the local supply of tomatoes, as well as shortages of other vegetables. The shortage of workers is also felt in the poultry industry, leading to a 12 percent increase in prices of various poultry products. The war likewise heightened the need for access to up-to-date, dynamic, and transparent information about inventory, volume of consumption, and local production forecasts. Access to information may help maintain reasonable prices of raw materials, followed by the final products, thereby preventing irrational responses among the various relevant actors. Leniency on imports, for example, could help

address shortages in local production, but in practice no accurate data exists vis-à-vis the shortage or local production capacity, unlike the data recently collected about the dairy industry.

At present, the degree of the country's dependence on food imports in certain industries may endanger supply when anticipated and unexpected risks materialize, from attacks on ships and ports to climate extremes. According to data from 2021 from Israel's Central Bureau of Statsitcis (CBS), for example, some 96 percent of Israel's grain is imported, as are 93 percent of the fish supply, 73 percent of the legumes, oil seeds, peanuts, and nuts supply, and 43 percent of the beef supply. In contrast, vegetables, fruit, dairy, and poultry items derive predominantly from Israeli production. However, Israeli milk and chicken products still depend primarily on imported grains, such that Israel's dependence on imports is actually greater than it initially seems. Importing will occasionally enable products to be sold at discounted prices to the consumer, and allow purchasing from a larger worldwide manufacturing market, yet there are no small number of risks to domestic production. The issue, then, is not whether Israel should produce food locally and exclusively, or import it exclusively, but how to balance appropriately between imported and local production to limit the risks arising from each sector. Examining the experience of other countries in this context is valuable.

In recent years, more and more countries have focused on the importance of food security and taken action to shape expansive national programs on the subject. Two particularly interesting cases are those of Singapore and the United Kingdom, countries managing an "island economy" similar to Israel's.

Singapore is one of the most densely populated countries in the world, with 0.14 square kilometers per 1,000 inhabitants (compared to 2.8 square kilometers in Israel). Consequently, only about one percent of the country is designated for agriculture, resulting in some 90 percent of the country's food consumption based on imports. In 2019, Singapore announced a "30 by 30" plan designed to strengthen the resilience of the country's food system and increase domestic food production from 10 to 30 percent of total consumption by 2030. The initiative was a response to global forecasts of increasing challenges in supply chains and global food production resulting from climate change. The plan includes three main parts:

- Increasing domestic production: Singapore has decided to overcome the shortage of agricultural land by allocating generous resources to support

and develop food and agricultural technologies that enable growing more food on less land.

- Diversifying sources of import: Aiming to ensure the food import system's robustness, Singapore has increased its sources of import to over 170 countries.
- Growing in areas outside the country: This strategy has two main advantages from Singapore's national perspective. First, it allows local agricultural companies to expand and grow overseas, increasing the amount of produce available to Singapore itself (assuming the companies export the food back to the country). Second, it allows companies to export food solutions developed in Singapore and build strategic relationships with local partners.

The UK has also addressed its serious concern regarding the country's food systems resilience. Compared to Singapore, the UK enjoys a developed agricultural industry and broad swathes of agricultural land, which in 2020 constituted some 71 percent of its total area, allowing it to grow most of the food it requires (some 54 percent of the consumption). Nonetheless, the UK recognized the challenges facing the global food system and has developed plans to boost the national food system's resilience. In 2022, the UK Ministry of the Environment, also responsible for food and rural space, presented a report outlining the national strategy regarding the security of the country's food system. The plan emphasizes the importance of increasing local food production in sectors with high growth potential. As part of the plan, investments are planned in local agricultural innovation programs in the amount of some £270 million, along with some £120 million in innovation research aimed at improving one of the links in the national food system's value chain.

Parallel to its concern for the resilience of its food system, the UK views nurturing local agriculture as a tool for promoting environmental values while maintaining the quality of food products. The framework includes several environmental goals, among them halting the deterioration of the UK's biodiversity and protecting approximately 30 percent of the country's land and marine areas by 2030. In addition, the UK considers the promotion of the food and agriculture sector, which employs more than four million workers, an opportunity to drive an economic growth engine and serve as a source of new jobs. Several industries with significant growth potential were mapped, including the alternative protein industry, aquaculture, and growing tomatoes and cucumbers. These industries receive support from government research bodies such as UK Research and

Innovation (UKRI). Britain also provides direct support of R&D for the food sector. In 2021, for example, it invested some £100 million in a dedicated fund for the development of aquaculture in the country.

Singapore and the UK are not alone in their efforts. Recent years have seen numerous countries, including the United States, Australia, and Turkey, working in various ways to strengthen their local food system's resilience. Evidence was provided by the Climate Conference (COP-28) held in November in Dubai. For the first time, one day was dedicated to discussions on the global food and agriculture system. The conference's focus on topics related to food is important not only regarding the elimination of hunger, a challenge the UN has undertaken to resolve by 2030, but also because agriculture and food production are responsible for approximately one third of global greenhouse gas emissions. Changes to food production frameworks are necessary for meeting the Paris Agreement goals. Participating countries agreed on a variety of mechanisms to strengthen the resilience of food systems both globally and nationally. At the opening of the conference, the UAE issued a statement on the resilience of the global food and agriculture systems, signed by over 150 countries, including the United States, China, the European Union, and Israel, which committed to address the challenges to food systems in their climate programs by 2025. The document's signatory countries undertook to commence operations in the following areas:

- Strengthening the resilience of farmers and food producers in the face of climate hazards by providing financial support and promoting the development of technological solutions;
- Concern for the nutritional security of underprivileged populations through the establishment of governmental mechanisms and the promotion of policy tools dedicated to the field;
- Supporting workers in the various agricultural and food production industries;
- Smart management of water resources in the agriculture and food production industries;
- Transitioning to sustainable farming methods, which will reduce, inter alia, damage to ecosystems and open spaces.

In addition, as part of the effort to ensure global food security while simultaneously reducing the volume of food system emissions, the United Nations Food and Agriculture Organization (FAO) issued ten central areas of action

relating, inter alia, to animal emissions, access to water sources, and food waste. The organization has set targets for each area of focus for 2030 and 2050. Government elements, together with some 200 entities from the private sector and the third sector (giant corporations, philanthropy organizations, and agricultural unions) signed a joint statement calling for defining measurable goals when implementing significant transformations in the global food and agriculture systems by COP-29, the next climate conference.

Countries in the Middle East have also begun to act at the national level to address the challenge posed by the climate crisis for the region's food systems, expected to be one of the most impacted regions in the world. In that regard, Egypt announced recently that it would launch a new partnership with the World Bank aimed at improving the country's agricultural resilience.

The need to formulate strategies that strengthen food system resilience is not unique to Israel, although it indeed faces singular geopolitical challenges, compounded by the fact that Israel's global warming rate is twice the global average. Moreover, the degree to which the Israeli food system is dependent on imports may undermine its stability in the face of the dual challenge: climate changes, which may affect the volume of grain produced in countries exporting to Israel, and geopolitical risks, which may detrimentally affect import routes (such as Houthi attacks on marine import routes). Any national food security strategy should therefore consider the multiple goals that the local food system should meet, from reducing greenhouse gas emissions to ensuring that the entire population can access healthy, nutritious food, while simultaneously finding the optimal balance between the various risks on the one hand, and how local production and imports can resolve them, on the other.

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