

# Food Security and Sustainable Nutrition in Israel: Challenges, Frameworks, and Policy Directions

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*Food systems stand at the nexus of human health and environmental sustainability, yet Israel's current food model poses significant challenges to both. This paper examines the specific obstacles to achieving food security and sustainable nutrition in Israel, analyzing these challenges through multiple theoretical frameworks including food sovereignty, sustainable nutrition, and circular economy approaches. We begin by outlining Israel's unique food security vulnerabilities: its growing population, limited arable land, water scarcity, and dependence on imports, all exacerbated by regional geopolitical instability. The paper contextualizes these challenges within relevant theoretical frameworks, examining how concepts such as food security, food sovereignty, and sustainable nutrition can inform policy development. We then analyze Israel's historical lack of comprehensive food policy and its consequences for vulnerable populations. The paper concludes by proposing policy directions grounded in Clapp's integrated, non-binary approach to food security and sovereignty, demonstrating how Israel might develop a more resilient, equitable, and sustainable food system. By examining these interconnected issues, we contribute to the broader discourse on reimagining food systems that can both nourish populations and regenerate environmental resources in contexts characterized by resource constraints and geopolitical complexity.*

**Keywords:** Food Security, Food Sovereignty, Sustainable Nutrition, Circular Economy, Israel, Food Policy.

## INTRODUCTION

Food stands as the most potent catalyst for optimizing both human health and environmental sustainability on our planet (Poore and Nemecek, 2018). Yet, paradoxically, our current food systems pose significant threats to both humanity and the Earth's ecosystems. The prevailing linear model of food production and

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consumption is fundamentally unhealthy and unsustainable (Rockström et al., 2009; Borrello et al., 2017). Valuable natural resources are exploited intensively to produce and distribute food products. Yet scant efforts are made to optimize the food supply chain or repurpose the residual by-products generated along its various stages (Markard et al., 2012). Consequently, this inefficient and wasteful approach undermines food security by limiting resource availability, heightening vulnerability to environmental fluctuations, and exacerbating the instability of food supply chains (Cutter, 2016; Wheeler and Braun, 2013).

Despite the evident shortcomings of this paradigm, meaningful steps to transition towards a more circular, waste-minimizing approach remain elusive (Holt-Giménez, 2017). A profound restructuring is imperative to harmonize our food systems with ecological principles. This transformation requires harnessing innovative solutions to mitigate the depletion of finite resources that underpin agriculture and to reduce food waste. A staggering one-third of all food produced globally for human consumption is wasted each year (FAO et al., 2024). This unconscionable reality unfolds while over a billion people worldwide face chronic hunger and food insecurity, a number that continues to rise (FAO et al., 2024). Israel ranks high in this unflattering global list of unsustainable and unethical economies, with an estimated 2.6 million tons of food wasted annually, amounting to 37% of food produced and costing as much as 23 billion NIS (Leket, 2023; Elimelech et al., 2019). This waste isn't merely an ethical failing; it's a multifaceted crisis with far-reaching environmental, social, political, and economic consequences (Devin and Richards, 2018). Until recently, food waste was considered an unavoidable byproduct of the prevailing logic of the food chain. However, a growing understanding emerges that this waste signifies a fundamental flaw in our current economic, social, and food chain models.

In ongoing efforts to mitigate the pernicious shortcomings of our food system and attain an equitable and sustainable paradigm for food production and distribution, a common thread emerges as a clarion call. This is the imperative to address the existing power structures that undergird our food system. Those working towards these diverse yet intertwined goals, ultimately seeking to ensure both local and global access to wholesome and nutritious food, must acknowledge and confront the capitalist forces that have shaped and exacerbated these formidable challenges (Carolan, 2011; Luz, 2023).

To create a more sustainable food system equipped to feed the world's population according to acceptable healthy nutrition standards, we must address two key imperatives. First, we need to restructure our economic system to prioritize sustainability and equity over profit maximization (Jakobsen and Capra, 2023; Raworth, 2018). Second, we must embrace the principles of a circular economy to reduce waste, enhance resource efficiency (Garusinge et al., 2023; Rodias et al., 2020), and redistribute value (Solomon et al., 2024) across the food chain. However, implementing a new economy paradigm in the food system is complex and requires systemic transformation to ensure coherence with the original concept

and alignment with sustainable development goals (Fassio and Tecco, 2019). As suggested by the EAT-Lancet Commission—a collaborative effort of 37 leading scientists to address the challenge of providing a healthy diet to a growing global population while maintaining environmental sustainability:

*The imperative is clear: we must reimagine and rebuild our food systems to nourish humanity while regenerating our planet. This transformation requires a holistic approach, integrating innovative agricultural practices, equitable distribution systems, and sustainable consumption patterns. By doing so, we can harness food's potential as a powerful lever for positive change, ensuring a healthier, more sustainable future for both people and planet (Willett et al., 2019).*

In this paper, we aim to unpack these complexities and ultimately suggest feasible guiding principles for policymakers to ensure food security in Israel. To achieve this goal, we must first acknowledge and understand the current predicaments and shortcomings of the food system and the challenges and obstacles to creating a more sustainable, equitable, and affordable food supply for all. Our overarching argument is that for a successful food security policy to be implemented in Israel, we must transform the current predominantly linear economic logic in food systems and move toward more equitable, resilient and sustainable food paradigms through various complementary approaches. This transformation must be grounded in an understanding of Israel's specific historical, geographical, and social context, while drawing on global innovations and frameworks that have proven effective in addressing similar challenges elsewhere.

The paper proceeds as follows: First, we contextualize key concepts and theoretical frameworks relevant to food system transformation, examining their relevance to Israel's specific challenges. Second, we provide a detailed analysis of Israel's food security challenges and historical approaches, tracing the development of policy responses from the early state period to the present. Third, we examine ongoing initiatives and emerging opportunities in Israel's food landscape, highlighting promising developments that could inform broader policy. Finally, we propose policy directions that integrate multiple theoretical perspectives to address Israel's specific food security challenges, offering a pathway toward a more coherent, equitable, and sustainable food system.

By bringing together diverse theoretical perspectives, historical analysis, and contemporary case studies, this paper aims to contribute to the development of a more comprehensive and effective approach to food security in Israel. In doing so, it addresses the urgent need for policies that can ensure access to nutritious food for all Israelis while preserving the ecological resources upon which future food production depends.

## CONTEXTUALIZING ISRAEL'S FOOD SYSTEM CHALLENGES: THEORETICAL FRAMEWORKS AND APPROACHES

Throughout history, maintaining a steady food supply has been one of the primary struggles of ancient societies (Garnsey, 1988; Ó Gráda, 2009). Food has always been humanity's Achilles' heel, a constant challenge and major source of existential fears. Despite the constant rise in agricultural yields, we see increasing numbers of people experiencing various stages of food insecurity (FAO et al., 2024). Moreover, it is abundantly clear that the current structure and prevailing logic of our food chain are flawed and contribute significantly to the escalating environmental crisis (Campbell et al., 2017). Marx's observation on the inherent flaws of capitalist production and logic remains a relevant critique for understanding current ailments:

*Capitalist production, therefore, only develops the techniques and the degree of combination of the social process of production by simultaneously undermining the original sources of all wealth—the soil and the worker* (Marx, 1990, 637-638).

This analysis and framing provide an appropriate vantage point to explain why we connect the four concepts discussed herein. Firstly, we hold them to be interconnected and codependent; secondly, we argue that it is impossible to achieve sustainable, equitable, and sufficient food for all without abandoning the capitalistic linear logic that currently prevails in modern agriculture and the entire food chain. The focus has shifted from a narrow emphasis on food security to broader concepts of food sovereignty, sustainable nutrition, and a circular economy. This evolution reflects a growing recognition of the complex interplay between food production, distribution, consumption, and their impacts on human health, social justice, and environmental sustainability (Jurgilevich et al., 2016). Grasping the current state of the field requires an examination of the historical development and complex interplay among these concepts.

To develop effective strategies for addressing Israel's food security challenges, it is essential to understand the broader theoretical frameworks that inform food system analysis and transformation. Therefore, this section examines key concepts and approaches, contextualizing them within Israel's specific circumstances. Rather than viewing these frameworks as mutually exclusive, we adopt Clapp's (2014) perspective that moving beyond binary thinking can facilitate more comprehensive and effective policy development.

### ***Food Security: Evolving Concepts and Relevance to Israel***

The concept of food security emerged in the mid-1970s amidst global food insecurity concerns (Gibson, 2012). Initially focused on ensuring sufficient production, the concept evolved to incorporate access, as highlighted by Amartya Sen's work demonstrating that hunger persists even amid abundance due to distribution issues (Sen, 1981; Drèze and Sen, 1989). This insight led to a broader

understanding of food security that incorporates the concept of access. In 1986, a World Bank report redefined food security as: “Access of all people at all times to enough food for an active, healthy life” (World Bank, 1986, 1). By 2001, the FAO had adopted a comprehensive definition:

*Food security exists when all people, at all times, have physical, social and economic access to sufficient, safe and nutritious food that meets their dietary needs and food preferences for an active and healthy life* (FAO, 2001).

This definition addresses availability, accessibility, adequacy, acceptability, and agency with important social dimensions (FAO, 2008). To date, multiple definitions of food security exist indicating no single definition has gained universal acceptance (Malaysia, 2010; Smith et al., 1993). Pinstrup-Andersen adds a critical aspect:

*Food security means that enough food is available, whether at the global, national, community, or household level. But that begs a clarification of what is meant by ‘enough’* (2009, 5).

He highlights definitional inconsistencies and introduces scale as a critical factor—from nutrition security (individual/household level) to food security (national/global markets). Thus, the concept has expanded beyond physical availability to include economic, social, and political factors, though critics argue it focuses too much on outcomes rather than processes and fails to address root causes of hunger leading to the emergence of food sovereignty (Agarwal, 2014),

For Israel, this multidimensional understanding is particularly relevant given the country’s socioeconomic disparities. While Israel produces significant quantities of food, access varies considerably across population groups, with Arab and ultra-Orthodox communities experiencing higher rates of food insecurity (CBS, 2024). Additionally, Israel’s scale considerations affect food security differently at household, community, and national levels, requiring tailored interventions. With this in mind we expand in what follows on food sovereignty.

### ***Food Sovereignty: Alternative or Complementary Framework for Israel***

Food sovereignty emerged as a counterpoint to food security, emphasizing people’s right to control their food systems (Wittman, 2011). Originating in the 1990s through grassroots movements like La Via Campesina, food sovereignty challenges corporate-dominated food systems and promotes locally controlled agriculture (Carlile et al., 2021; Patel, 2009). It challenges the corporate-dominated, industrialized food system and promotes sustainable, locally controlled agriculture. The Nyéléni Declaration of 2007 provides a comprehensive definition: Food sovereignty is the right of peoples to healthy and culturally appropriate food produced through ecologically sound and sustainable methods, and their right to define their own food and agriculture systems (Sélingué, 2007).

Schanbacher is a notable case in promoting this concept as he argues:

*Ultimately, the food security model is founded on, and reinforces, a model of globalization that reduces human relationships to their economic value. Alternatively, the food sovereignty model considers human relations in terms of mutual dependence, cultural diversity, and respect for the environment”* (Schanbacher, 2010, ix).

Food security, therefore, promotes a model that prioritizes economic value, while food sovereignty prioritizes social values and environmental sustainability. The food sovereignty movement has gained substantial traction, especially in the Global South, influencing national and international policies. It extends beyond agriculture to encompass ethical consumption, fair trade, and climate action (Fairbairn, 2010; 2012). However, it also faces criticism for potential contradictions between its goals, such as national self-sufficiency and local autonomy (Agarwal, 2014).

In Israel, food sovereignty principles could address several pressing challenges. For instance, supporting small-scale Israeli farmers could reduce import dependence and enhance resilience against global market fluctuations. Additionally, respecting the diverse food cultures within Israel’s multicultural society—including Jewish, Arab, and various immigrant communities—could improve nutrition outcomes and food system participation. A pertinent case in point is the October 2023 crisis and its aftermath, which drove away from the fields most foreign workers, and limited Palestinian workers access to Israeli farms. It highlighted the vulnerability of Israel’s agricultural labor system and the potential benefits of developing more locally controlled and resilient agricultural practices. However, as we argued previously such noble goals cannot be accomplished in the absence of significant changes in the prevailing economic logic.

### ***The Interconnectedness of Sustainable Nutrition and Circular Economy***

Earlier, we referenced Marx’s critique of the societal and environmental risks inherent in capitalist logic when applied to our food systems. His 19th-century analysis anticipated the problematic relationship between food security and sustainability that we face today. Capitalism not only transformed global food systems but also disrupted the natural and metabolic processes essential for a sustainable environment and a steady supply of nutritious food (Marsden, 2016). As Marx and others have noted, achieving sustainability in food production and consumption requires maintaining a degree of autonomy from pure market forces (Mann and Dickenson, 1978). This tension between capitalist imperatives and the fundamental nature of food continues to shape agricultural practices, dietary habits, and food politics in complex and often harmful ways. This dynamic underpins linear economy—a model that follows a pattern, where products move in a straight line from creation to disposal (Sariatli, 2017). For over two centuries,

this linear approach has driven economic growth, leading to resource depletion and environmental degradation (Jackson, 2009; Andrews, 2015).

In response to these challenges, the concept of a circular economy began to emerge in the late 1960s as an alternative model. This approach aims to achieve environmental goals without compromising economic growth, and potentially even enhancing economic performance (Merli et al., 2018). The circular economy emerged in the late 1960s as an alternative to the linear 'take, make, dispose' model that has driven economic growth for over two centuries (Jackson, 2009; Andrews, 2015). This approach aims to create cyclical systems where waste becomes a resource, minimizing material consumption and pollution while potentially enhancing economic performance (Merli et al., 2018). While no unified definition exists, there is broad agreement on key principles: repair, reuse, upgrading, remanufacturing, recycling, and downcycling (Geissdoerfer et al., 2017). Recent expansions of this framework incorporate up to 60R principles categorized into four main groups: reduce, reuse, recycle, and reverse logistics (Uvarova et al., 2023), addressing earlier criticisms that the model neglected consumption reduction (Georgantzis Garcia et al., 2021). The Ellen Macarthur Foundation's research demonstrates how these principles applied to food systems can regenerate nature, safeguard biodiversity, and enhance human wellbeing (Macarthur, 2013). However, while the circular economy model addresses issues like resource efficiency and waste minimization, it often neglects a critical component for true sustainability---reducing overall consumption (Georgantzis Garcia et al., 2021). Without a concerted effort to lower consumption levels, the model may inadvertently reinforce the capitalist growth paradigm, undermining its potential to fully break free from environmental degradation (WRI, 2023). The concept of sustainable nutrition illuminates the complex interplay between sustainability and circular economy principles. It interconnects with circular economy principles through their shared emphasis on resource efficiency and waste reduction.

Sustainable nutrition is a multifaceted concept that seeks to provide balanced diets with low environmental impacts while contributing to food security and health (Guillaumie et al., 2020). It encompasses various aspects, including environmental sustainability, economic affordability, and nutritional adequacy for current and future generations (Clark et al., 2020). Central to sustainable nutrition is the need to balance nutritional requirements within the limits of environmental carrying capacity (Smetana et al., 2019). Over time, the concept has evolved to encompass multiple dimensions beyond health, including environmental, economic, social, and cultural aspects (von Koerber et al., 2017; Espinoza-Orias et al., 2014). It aims to ensure the provision of sufficient, safe, and nutritious food while preserving resources for future generations. Various sustainable dietary models have been proposed, such as the Mediterranean diet, the Double Pyramid model, and more recently, plant-based diets (Peker and Günal, 2023). As we demonstrate hereinafter, the idea of sustainable nutrition has gained global recognition and relevance.

### ***Sustainable Nutrition and Multiple Approaches to Food System Transformation***

Sustainable nutrition seeks to provide balanced diets with low environmental impacts while contributing to food security and health (Guillaumie et al., 2020). It encompasses environmental sustainability, economic affordability, and nutritional adequacy (Clark et al., 2020). The EAT-Lancet Commission's "Planetary Health Diet" exemplifies this approach, emphasizing reduced consumption of red and processed meat, increased plant-based foods, and transformed production systems to reduce environmental impacts (Willett et al., 2019).

For Israel, with its limited agricultural land and water resources, adopting sustainable nutrition principles is not merely environmental but existential. Various complementary approaches could support this transition:

1. **Circular Economy Approaches:** The circular economy aims to transition from the linear "take, make, dispose" model to a cyclical system minimizing waste (Sariatli, 2017). In Israel's food system, this could involve reducing the 37% of food currently wasted (Leket, 2023) through improved supply chains, food rescue initiatives, and organic waste recycling. The Ellen MacArthur Foundation's research demonstrates how applying circular principles to food systems can regenerate nature and enhance wellbeing (MacArthur, 2013).
2. **Conservation Agriculture:** Techniques that minimize soil disturbance, maintain permanent soil cover, and practice crop rotation could help preserve Israel's limited arable land while reducing water requirements (Shelef et al., 2017).
3. **Precision Agriculture:** Israel's technological strengths could be leveraged to expand precision agriculture techniques that optimize resource use through sensor technologies, data analytics, and targeted interventions (Fedler, 2009).
4. **Urban and Vertical Farming:** With 92% of Israel's population living in urban areas, expanding urban agriculture could increase local production while reducing transportation needs (Al-Kodmany, 2018).
5. **Cooperative Models:** Strengthening agricultural cooperatives could enhance farmers' resilience and negotiating power while facilitating knowledge sharing and resource pooling (Katz and Ben-David, 1975).
6. **Indigenous and Traditional Practices:** Incorporating traditional farming methods, particularly those adapted to arid environments, could enhance sustainability while preserving cultural knowledge (Shelef et al., 2017).

### ***Moving Beyond Binary Thinking: Clapp's Framework Applied to Israel***

Jennifer Clapp (2014) cautions against perpetuating a binary between food security and food sovereignty, arguing this hinders meaningful discussions on ending hunger and creating equitable food systems. For Israel, adopting this

integrated perspective is particularly valuable given the complex challenges the country faces.

Clapp's framework suggests six key principles for integration that are directly applicable to Israel's context:

1. Integrating local and global perspectives: While enhancing local production, Israel must maintain strategic international partnerships given its resource limitations.
2. Balancing state and community roles: Effective food policy in Israel requires both government leadership and community involvement, particularly given the country's diverse population groups.
3. Combining technological innovation and traditional knowledge: Israel's technological strengths should complement rather than replace traditional agricultural practices adapted to local conditions.
4. Addressing both quantity and quality: Israel's food policy must ensure both sufficient calories and nutritional adequacy across all population groups.
5. Linking environmental and social sustainability: Environmental constraints and social equity concerns in Israel are deeply interconnected and must be addressed together.
6. Developing flexible policy approaches: Israel needs adaptive policies that respond to both immediate food access needs and long-term sustainability goals.

In the following sections, we examine Israel's historical approach to food security, current initiatives, and emerging opportunities, analyzing these through the integrated framework outlined above. This analysis will inform our policy recommendations for developing a more coherent, equitable, and sustainable food system in Israel.

## ISRAEL'S HISTORY OF FOOD POLICY: FROM AUSTERITY TO MODERN CHALLENGES

Throughout Israel's history, the approach to food security has been marked by varying degrees of state intervention, ideological influences, and practical constraints, all occurring in the absence of a cohesive and comprehensive national food policy. Understanding this historical context is essential for developing effective contemporary approaches to Israel's food security challenges.

### *The Formative Years: Food, Nation-Building, and Austerity*

Food distribution and consumption played a crucial role in nation-building and shaping social relations during Israel's formative years (Rozin, 2006). The

new state confronted the dual challenge of absorbing massive waves of immigrants while establishing agricultural self-sufficiency in a land with limited resources. This period saw the development of distinctly Israeli food practices and policies, shaped by both practical necessities and ideological commitments to collective agricultural production.

Israel tackled these challenges through strategic investments in agriculture, establishing research institutes that combined hands-on farming with advanced R&D from the nation's earliest days (Katz and Ben David, 1975). The kibbutz and moshav movements, with their emphasis on collective agricultural production, played central roles in establishing Israel's early agricultural capacity. These communal settlements not only produced food but embodied ideological commitments to labor, land cultivation, and collective self-sufficiency that profoundly influenced early Israeli agricultural policy.

One of the most challenging periods in terms of achieving food security in Israel's history was the Austerity (Tzena in Hebrew) period, which lasted from 1949 to 1959. The newly established State of Israel was not only confronting the consequences of the 1948 War of Independence but also had to accommodate a massive influx of immigrants, all while facing severe resource shortages (Neuman, 1999). With thousands of new immigrants arriving each month, Israel's economy teetered on the brink of collapse. To address this dire situation, the government introduced a system of rationing, which included strict controls on the distribution of food, clothing, and other essential goods.

In 1949, Dov Yossef, the appointed Minister of Rationing and Supplies, was entrusted with the task of putting the entire nation on a rationing program. His main objective was to ensure the equitable distribution of scarce resources and support the national goal of absorbing hundreds of thousands of immigrants. In a speech delivered in 1952, Dov Yosef explained the difficult decisions behind rationing and the measures taken to ensure the equitable distribution of scarce resources during the Austerity period:

*The first (Israeli) government had the foresight to limit consumption and to use our limited foreign currency (reserve) for bringing only essential goods, leaving out non-essential items from overseas and then distributing them equally among the public as a whole[...]. It is no secret that the current status of our foreign currency reserve and the shortage in foreign currency has compelled us to struggle with some challenging hardships... However, I believe that should we be able to prevail during this difficult time of a few months, it is possible to organize our affairs in such a way that will enable the public to receive the minimal requisition for maintaining its health and work capacity in an orderly manner. One of the most demanding tasks of the housewife is standing in line for food... and I intend to attempt to develop the supervision for this collaboration. First and foremost, the collaboration on the part of the women. We will establish regional committees that will deliberate on issues of distribution and will submit to me proposals for*

*improvements in distribution arrangements. I will share with you, from time to time, details about our progress in solving the food problems. I shall always be candid and open and explain to you what has been done and why. We ask for the public's patience. We are determined to do all that we possibly can to reach the best solutions and distribution arrangements for the benefit of the public as a whole who aspires for a life that is fair, just, and egalitarian. I strongly hope that we will be able to reach our goal (Gross, 2013).*

The rationing program during the Tzema period was based on calculations of nutritional needs, with the government aiming to ensure that basic caloric and nutrient requirements were met (Rozin, 2006). Special considerations were given to groups such as children, pregnant women, and laborers. However, the rigid implementation of these standardized rations often failed to meet the diverse dietary needs of the population, leading to widespread dissatisfaction and issues with malnutrition, particularly among women and immigrant communities (Taharlev Ben-Shachar, 2024).

The cultural dimensions of food insecurity during this period deserve particular attention. The standardized rations, based primarily on European dietary patterns, often failed to accommodate the diverse culinary traditions of immigrant communities from the Middle East, North Africa, and elsewhere. This cultural insensitivity compounded the material hardships of food scarcity, creating multiple layers of food insecurity—not just insufficient calories but culturally inappropriate food that many immigrants struggled to prepare or consume (Rozin, 2006).

In 1952, an American expert visited Israel to examine the nutritional status of children and found alarming levels of malnutrition, particularly among immigrant populations. The nutritional status of children in Israel was worse than in any other country he had previously studied, highlighting the severe shortcomings of the austerity measures in meeting the basic needs of the most vulnerable segments of the population (Haaretz, 1952). This period highlighted the need for a national food policy that integrates economic, social, agricultural, and cultural factors to achieve true food security.

### ***From State Intervention to Market Liberalization***

The transition from the austerity period to subsequent decades saw significant transformations in Israel's approach to food and agriculture. The 1960s and 1970s witnessed considerable agricultural development, with Israel becoming known for innovations in irrigation, crop varieties, and farming techniques. Despite these technological advances, the country's approach to food security remained fragmented, with different aspects managed across various ministries without comprehensive coordination.

The 1980s and 1990s brought economic liberalization policies that significantly impacted Israel's food system. Agricultural subsidies were reduced, protected markets

opened to international competition, and communal agricultural settlements underwent substantial economic restructuring. These changes, part of broader neoliberal economic reforms, altered the relationship between the state, agricultural producers, and food markets. The consequences included reduced domestic production of certain crops, increased food imports, and a shifting agricultural sector that increasingly focused on high-value exports rather than domestic food security (Shavit and Brender, 2022).

This period also saw demographic and cultural shifts that transformed Israeli food consumption patterns. Rising incomes, urbanization, and increasing exposure to global food trends led to more diverse diets, higher consumption of processed foods, and growing disparities in food access across socioeconomic groups. These changes, however, occurred without the guidance of a coherent national food policy, leading to contradictions between agricultural, health, economic, and social welfare policies related to food.

### ***Contemporary Challenges and Policy Gaps***

Israel's food system today confronts mounting challenges that threaten its long-term food security. By 2050, Israel's population is projected to reach 15 million, straining food production and resource capacity (CBS, 2017). Land scarcity is another critical challenge, as limited arable land and urban expansion reduce space for agriculture, necessitating more efficient land use and innovative farming techniques (Tal, 2007). Water scarcity remains a significant concern, despite advancements in water management and the increasing reliance on desalinated water (Fedler, 2009; Feitelson, 2013).

Advanced agricultural technologies, including urban sustainable farming methods, offer potential solutions to food security challenges. However, ensuring equitable access across the sector and including smallholder farmers in these technological advancements requires substantial investment and infrastructure development. This should be accompanied by preserving and promoting biodiversity, as well as the integration of native plants, to enhance agricultural resilience and sustainability (Shelef et al., 2017).

Israel's heavy dependence on international trade for its food supply creates a dual challenge. While trade remains vital for meeting domestic food needs, it also leaves the country vulnerable to global disruptions—underscoring the urgent need to establish both resilient trade policies and strategic food reserves (Soh et al., 2024; Kimhi, 2024). Last but surely not least, the ongoing armed conflict and the deterioration of Israel's geopolitical situation may further exacerbate the challenges to the country's food security (Cohen and Ashkenazy, 2023).

The absence of a well-defined food policy is already affecting a significant portion of the population, particularly during times of economic downturn or crisis. Ad hoc measures such as the provision of hot meals in schools or temporary support for food aid organizations have failed to address the root causes of food insecurity.

According to the 2023 Social Survey of Israel's CBS, 7.4% of adults over 20 years of age (circa 457,000 people) experienced varied degrees of food shortage in the last year due to financial difficulties. This breaks to 13% of Arabs and 10% of the Jewish ultra-Orthodox population. Additionally, 4.9% (circa 306,000 people) of the general population skipped a hot meal at least once every two days due to financial constraints (CBS, 2024).

### ***Recent Policy Developments and their Limitations***

In 2011, the Israeli government initiated the bill of the National Council Food Security which stated:

*The purpose of this law is to promote food security for the residents of Israel, in the spirit of human dignity and the principles of equality, justice, and fairness, and to that end, to establish the National Council for Food Security that will advise the Minister on this matter* (National Food Security Council Law, 2011).

The role of the National Council for Food Security, in accordance with Section 5 of the said law, was to advise the Minister of Welfare on planning policy in the field of food security. It was also tasked with advising on enforcement actions, supervision and control taken by those responsible for food security, and on conducting research required for this subject. This government program included food card distribution, nutrition education, and efforts to improve access to healthy food in underserved areas.

And yet this crucial lifeline for families struggling with food insecurity was prone time and again to the whims of the alternating ministers of Welfare and Treasury. Both in May 2021 and again in June 2024, the project was hampered by lack of governmental funding (Melamed, 2021; Troen et al., 2024). In June 2024, the National Food Security Council issued a special report indicating that Israel has no policy for addressing and combating the issues of food insecurity and hunger created by the Iron Swords War (the Gaza War) (Strier, 2024). Israel's social policy ignores the urgent needs of hundreds of thousands of families suffering from food insecurity, based on unacceptable considerations (Strier, 2024).

Recently, there have been moves within the Israeli government to dismantle or drastically reduce the role of the National Food Security Council, effectively halting its operations. This may lead to a vacuum in national-level coordination of food security policies, leaving vulnerable populations without adequate government oversight or strategic planning for long-term food access. Additionally, the decentralization of responsibilities to other entities could result in fragmented efforts and further hinder the implementation of cohesive, large-scale programs aimed at combating food insecurity. This move signals a potential setback for those advocating for a more robust, integrated approach to national food security.

On a more positive note, in 2024, the Ministry of Agriculture was renamed the Ministry of Agriculture and Food Security, formally acknowledging food security as a critical national issue. This rebranding reflects a growing awareness within the

government of the need for more comprehensive strategies to address food insecurity. The ministry's name change was accompanied by a timely initiative: working towards the development of a comprehensive national food security policy. This new strategy prioritizes sustainable agricultural practices, enhanced local food production, and equitable access to nutritious food for all citizens. However, this process must be expedited and implemented effectively, rather than serving as a mere lip service to this pressing and crucial issue. Unless implemented with decisive action and clear timelines, this initiative risks becoming yet another symbolic gesture that fails to deliver meaningful change.

## **TOWARDS FOOD SECURITY IN ISRAEL: INITIATIVES, EMERGING OPPORTUNITIES, AND SOCIETAL SHIFTS**

Given the current geopolitical regional upheaval, the lingering state of war, Israel's deteriorating international status, and the already proven deficiencies and shortcomings of the Israeli food chain, the lack of a national food policy is even more inexcusable. However, recent years have seen a growing recognition of these challenges and the emergence of various initiatives, primarily within civil society and the third sector, aimed at promoting food security and sustainability in Israel. This section examines these initiatives and emerging opportunities, assessing their potential contributions to a more comprehensive approach to food security.

### ***Civil Society Initiatives Addressing Food Insecurity***

#### *Food Rescue Organizations: The Case of Leket Israel*

Leket Israel stands as a prominent example of civil society's response to both food insecurity and food waste in Israel. This food rescue organization plays a crucial role in reducing food waste and addressing food insecurity by collecting surplus food from numerous venues including Israeli army bases, farms, restaurants, and catering halls, redistributing it to those in need. In 2022 alone, Leket rescued over 20,000 tons of food, providing approximately 175,000 meals per week to vulnerable populations across Israel (Leket, 2023).

Leket's approach exemplifies several key principles relevant to developing a more sustainable food system. First, it applies circular economy concepts by redirecting surplus food that would otherwise be wasted back into the consumption cycle. Second, it addresses distributional equity by connecting food abundance in some sectors with scarcity in others. Third, it creates partnerships across public, private, and nonprofit sectors, demonstrating the potential for collaborative approaches to food security challenges.

The organization's work, however, also highlights systemic failures in Israel's food system. The very need for food rescue organizations points to inefficiencies in food distribution and market mechanisms that result in simultaneous waste and scarcity.

While Leket provides an essential service, a comprehensive national food policy would need to address the root causes of these inefficiencies rather than relying solely on third-sector interventions.

#### *Community-Based Food Initiatives*

Numerous grassroots organizations have emerged to address food insecurity at the community level, each employing different approaches tailored to specific local needs. For example, the “Nevet” program provides sandwiches to schoolchildren from low-income families, ensuring they have a nutritious meal during the school day (nevet.org). This targeted intervention addresses a specific vulnerability within the food system—children’s access to adequate nutrition during school hours—with implications for both immediate wellbeing and longer-term educational outcomes.

In 2022, an organization of active residents of the Shapira neighborhood in Tel Aviv established a NGO named Lira Shapira, with the goal of encouraging reduction of food waste and organic waste separation through the development of a local economic system and the promotion of community connections and resilience (lirashapira.org). The Lira Shapira initiative actively demonstrates the crucial importance of awareness and local steps towards food security and sustainable nutrition. This community-based approach embodies food sovereignty principles by placing control over local food systems in the hands of community members while creating economic incentives for sustainable practices.

#### *Digital Platforms for Food Sharing*

In recent years, digital platforms have emerged to reduce food waste by facilitating sharing among peers in different settings (Makov et al., 2020). One notable local case is an application called SpareEat, which enables users to join a platform and become part of a community that strives to “save food together” and share it among members (spareeat.com). These technological solutions demonstrate the potential for innovation to address food system challenges, creating new mechanisms for redistribution that operate outside traditional market or charitable frameworks.

The emergence of these digital platforms reflects broader global trends toward sharing economies and peer-to-peer exchange, adapted to Israel’s specific context. Their success suggests opportunities for policy approaches that facilitate and scale such innovations while ensuring they reach populations most affected by food insecurity, not just technologically connected urban dwellers.

#### *Urban Agriculture and Sustainable Farming Initiatives*

Within Israeli urban centers, projects implementing urban farming sustainable principles have appeared in recent years (urbanfarming.org.il). Cities like Tel Aviv and Haifa have begun promoting rooftop gardens and community allotments to increase local food production and community engagement with food systems. These initiatives address multiple dimensions of food security and sustainability simultaneously: they increase local production capacity, reduce transportation needs,

create educational opportunities about food systems, and strengthen community connections around food.

The urban farming movement in Israel faces particular challenges given the country's land constraints and water scarcity. However, it also benefits from Israel's strengths in agricultural and water technology, creating opportunities for innovative approaches to urban food production. For instance, vertical farming systems that minimize land and water use while maximizing productivity have been piloted in several Israeli cities (Levy and Goldsmith, 2023).

These urban agriculture initiatives often explicitly connect to broader sustainability goals, including reduced carbon emissions, enhanced biodiversity within urban environments, and improved community resilience. As such, they represent holistic approaches to food system transformation that integrate environmental, social, and economic dimensions—an integration that would be essential for any comprehensive national food policy.

### *Crisis Response and Volunteer Mobilization*

In response to the lingering workforce shortage following October 2023 events the number of volunteers stepping up has been remarkable. High-tech executives, freelancers, civil servants, and many others have dedicated significant time to physically demanding agricultural work (Authors' fieldnotes). This phenomenon has enabled mostly middle- and upper-class Israelis to abandon their typically capitalistic, linear logic and freely give their most precious assets: time, energy, and money.

Many similar initiatives of varying scales and aims have emerged across Israel. These include, among others, 'Adama Le'Adam' (From Land to Man), 'Achim LaNeshek' (Brothers in Arms), and numerous WhatsApp groups connecting volunteers with farmers in need or coordinating food preparation and redistribution efforts (Glazer, 2023).

What factors have contributed to this significant shift in people's willingness to participate in such labor-intensive farm work? Beyond various personal motivations ("I want to find meaning," "I feel I need to contribute during this dark hour"), something more profound has transpired. In times of major crises, such as war or pandemics, communities often display what some researchers call "catastrophe compassion", a shift toward cooperation, shared responsibility, and mutual aid, despite the prevailing logic of profit-driven societies (Zaki, 2020). This behavior has been observed globally; in times of crisis, individuals perceive a sense of shared fate and mutual interdependence, driving them to engage in cooperative efforts, even at personal risk. For instance, during the COVID-19 pandemic, many individuals willingly volunteered in hospitals, food distribution centers, and other critical services, often at personal risk and without financial incentives—simply to help keep essential operations running (Beltran et al., 2024; Davenport et al., 2020).

This approach demands a significant shift in mindset, encouraging individuals to invest their time and energy in unpaid labor on others' farms. The true challenge is

maintaining this cooperative mindset beyond crisis periods. This requires developing systems that incentivize collective behaviour and embedding circular economy principles into broader societal frameworks.

#### *Indigenous and Traditional Knowledge Integration*

An often overlooked but valuable resource for sustainable food systems in Israel is the indigenous and traditional agricultural knowledge present in various communities. The Bedouin communities of the Negev, for instance, possess sophisticated understanding of arid-land farming techniques developed over generations of adaptation to local environmental conditions. These knowledge systems include water harvesting methods, drought-resistant crop varieties, and seasonal planting cycles tuned to local microclimates (Meraiot et al., 2021).

Integrating these traditional knowledge systems with modern agricultural science and technology presents opportunities for developing more resilient and contextually appropriate food production methods. However, this integration requires overcoming historical marginalization of these knowledge systems and developing frameworks that recognize their value alongside scientific approaches. This challenge exemplifies Clapp's (2014) call to move beyond binary thinking, recognizing that effective food systems can draw on both traditional wisdom and modern innovation.

#### *Technological Innovation in the Food System*

Israel's renowned strengths in agricultural technology and water management represent significant assets for addressing food security challenges. Innovations in precision agriculture, including sensor technologies, data analytics, and automated systems, can enhance resource efficiency and productivity (Tal and Ben Gal, 2021). Similarly, innovations in food processing and preservation can reduce post-harvest losses and extend the shelf life of nutritious foods. Technologies for transforming agricultural byproducts into value-added products exemplify circular economy principles while creating economic opportunities and reducing waste.

The challenge lies in ensuring these technological innovations benefit all segments of society rather than exacerbating existing inequalities. Smallholder farmers often face barriers to adopting new technologies due to cost constraints, knowledge gaps, or technological incompatibility with their operations. Policies that facilitate technology transfer, provide appropriate financing mechanisms, and adapt innovations to diverse agricultural contexts are essential for realizing the potential benefits of Israel's technological capabilities.

#### *Emerging Policy Opportunities*

The renaming of the Ministry of Agriculture to the Ministry of Agriculture and Food Security in 2024 signals growing recognition of food security as a national priority. This institutional change creates potential openings for more comprehensive policy approaches that integrate production, distribution, access,

and nutrition dimensions of food security. However, realizing this potential requires moving beyond symbolic gestures to develop concrete policies, implementation mechanisms, and accountability frameworks.

## **POLICY RECOMMENDATIONS: AN INTEGRATED APPROACH TO FOOD SECURITY IN ISRAEL**

Building on our analysis of Israel's food security challenges and the various theoretical frameworks that can inform policy development, we now propose a set of integrated policy recommendations. These recommendations are organized according to Clapp's (2014) framework for moving beyond binary approaches to food security and sovereignty, adapted to Israel's specific context. For each recommendation, we examine current initiatives, identify gaps, and suggest specific implementation pathways.

### ***1. Integrating Local Production and Strategic Imports***

*Current Status:* Israel currently imports approximately 95% of grains, 80% of fish, and significant quantities of other staples (Kimhi, 2024). This import dependence creates vulnerability to global market disruptions and geopolitical tensions.

*Recommendation:* Develop a strategic balance between enhanced local production and diversified import relationships.

*Implementation Pathways:*

- Establish a national food reserve system for essential commodities, particularly grains and proteins
- Develop trade agreements with multiple regions to diversify import sources
- Incentivize local production of strategic crops through targeted subsidies and technical support
- Invest in research on drought-resistant and high-yield varieties adapted to Israel's climate

*Connection to theoretical frameworks:* This approach integrates food security concerns about stable supply with food sovereignty principles of local production control.

### ***2. Enhancing Resource Efficiency Through Multiple Approaches***

*Current Status:* Israel faces severe water scarcity and limited arable land, yet agricultural practices often remain resource-intensive, and food waste levels remain high at 37% (Leket, 2023).

*Recommendation:* Implement a comprehensive resource efficiency strategy combining multiple approaches.

*Implementation Pathways:*

- Precision Agriculture: Expand Israel's technological strengths through subsidized precision agriculture technologies for all farm sizes

- Conservation and regenerative Agriculture: Promote soil health through minimum tillage, cover cropping, and rotational practices
- Circular Economy Applications: Develop infrastructure for comprehensive food waste collection and processing into compost or energy
- Water Efficiency: Continue innovation in irrigation technology while implementing water pricing that incentivizes conservation

### ***3. Strengthening Community-Based Food Systems***

*Current Status:* Israel's food distribution is primarily market-based, with limited community involvement. Recent crises have sparked volunteer initiatives, but these remain fragmented.

*Recommendation:* Foster community-based food initiatives that enhance resilience and accessibility.

*Implementation Pathways:*

- Support urban agriculture through municipal land allocation and technical assistance
- Develop community-supported agriculture (CSA) networks connecting urban consumers with local farmers
- Establish food policy councils at municipal levels with diverse stakeholder representation
- Create neighborhood food hubs in underserved communities combining education, production, and distribution

### ***4. Addressing Nutrition Security Through Cultural Appropriateness***

*Current Status:* Nutritional disparities exist across population groups, with higher rates of both food insecurity and diet-related diseases in Arab and Jewish ultra-Orthodox communities (CBS, 2024).

*Recommendation:* Develop culturally appropriate nutrition interventions that respect diverse food traditions, while counteracting targeted marketing of unhealthy ultra-processed foods in vulnerable communities.

*Implementation Pathways:*

- Create dietary guidelines that incorporate traditional foods from various Israeli communities
- Support small-scale producers of culturally significant foods through targeted programs
- Implement school meal programs featuring diverse, culturally appropriate healthy options
- Develop nutrition education materials in multiple languages adapted to different community contexts

### **5. Creating an Integrated Governance Structure**

*Current Status:* Israel lacks a comprehensive food policy and coordinating body, with responsibilities fragmented across ministries (Agriculture, Health, Environment, Social Welfare).

*Recommendation:* Establish a National Food Policy Council with binding authority and diverse representation.

*Implementation Pathways:*

- Formalize the recently renamed Ministry of Agriculture and Food Security's mandate to coordinate food policy
- Establish a Food Policy Council with representatives from all relevant ministries, academia, civil society, farming communities, and the private sector
- Develop a comprehensive National Food Strategy with clear targets, timelines, and accountability mechanisms
- Create a consistent monitoring system for food security, nutrition outcomes, and environmental impacts

### **6. Building Resilience Against Climate Change and Conflict**

*Current Status:* Israel's food system faces dual threats from climate change (increased temperatures, reduced precipitation) and regional conflicts that disrupt supply chains.

*Recommendation:* Develop redundant systems and adaptive capacity to maintain food security during crises.

*Implementation Pathways:*

- Establish regional food storage facilities and distribution mechanisms for emergency situations
- Develop contingency plans for agricultural labor shortages during conflicts
- Invest in climate-adaptive research and technology development
- Create training programs for farmers on climate adaptation techniques
- Establish mutual aid networks that can activate during crises, building on recent volunteer initiatives

### **7. Addressing Food Waste Through Holistic Approaches**

*Current Status:* Israel's food waste occurs at multiple points in the supply chain, from production to consumption, with limited coordination of reduction efforts.

*Recommendation:* Implement a comprehensive food waste reduction strategy spanning the entire food system.

*Implementation Pathways:*

- Establish a legal framework facilitating food donation by producers, retailers, and food service

- Develop infrastructure for processing agricultural surplus and imperfect produce
- Implement consumer education campaigns on food waste reduction
- Support expansion of food rescue organizations like Leket Israel with stable funding
- Create incentives for businesses adopting food waste reduction targets and transparency

## CONCLUSION: ISRAEL'S PATH TO FOOD SECURITY AND SUSTAINABLE NUTRITION

This paper has examined the complex challenges facing Israel's food system through multiple theoretical lenses, moving beyond binary oppositions between food security and food sovereignty to develop an integrated approach. Israel's unique circumstances—limited land and water resources, growing population, geopolitical vulnerabilities, and socioeconomic disparities—require tailored solutions that draw from various frameworks while addressing specific local contexts.

Our analysis reveals that Israel's historical lack of a comprehensive food policy has created vulnerabilities that recent crises have only magnified. The fragmented approach to food security has left significant portions of the population experiencing nutrition insecurity while environmental resources continue to degrade. However, recent developments, including the renaming of the Ministry of Agriculture to include Food Security and the emergence of grassroots initiatives during times of crisis, indicate growing recognition of these challenges and potential pathways forward.

The policy recommendations outlined in this paper demonstrate how an integrated approach can address Israel's food security challenges more effectively than adherence to any single theoretical framework. By strategically balancing local production with import relationships, implementing multiple approaches to resource efficiency, strengthening community-based food systems, ensuring cultural appropriateness, creating integrated governance structures, building resilience against multiple threats, and addressing food waste holistically, Israel can develop a food system that is simultaneously more secure, sovereign, sustainable, and equitable.

Implementing these recommendations requires moving beyond the current predominantly linear economic logic in food systems toward more circular, regenerative, and equitable approaches. While circular economy principles offer valuable insights for reducing waste and optimizing resource use, they represent just one component of a broader transformation that must include conservation and regenerative agriculture, precision techniques, urban farming, cooperative models, and indigenous knowledge integration.

The grassroots mobilization witnessed since October 2023 demonstrates the potential for shifting mindsets and practices under certain conditions. During this

period, Israelis from diverse backgrounds volunteered on farms affected by labor shortages. This phenomenon, which Zaki (2020) terms “catastrophe compassion,” represents a departure from purely market-driven approaches to food production. The challenge now is to sustain and institutionalize these shifts beyond immediate crisis responses.

Looking forward, Israel’s food security strategy must be embedded within a broader commitment to sustainable development. This includes addressing climate resilience, biodiversity conservation, and social equity as integral components of food system transformation. By adopting Clapp’s integrated perspective and implementing the multi-faceted recommendations outlined in this paper, Israel can develop a food system that not only feeds its population adequately but does so in ways that regenerate environmental resources and strengthen social cohesion.

The path forward requires sustained political commitment, cross-sector collaboration, and investments in both technological and social innovations. Most importantly, it requires recognizing food not merely as a commodity but as a fundamental right and a cultural cornerstone—one that connects human health with ecosystem health and social wellbeing. Through this integrated approach, Israel can transform its current food security challenges into opportunities for pioneering a more resilient, equitable, and sustainable food future.

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