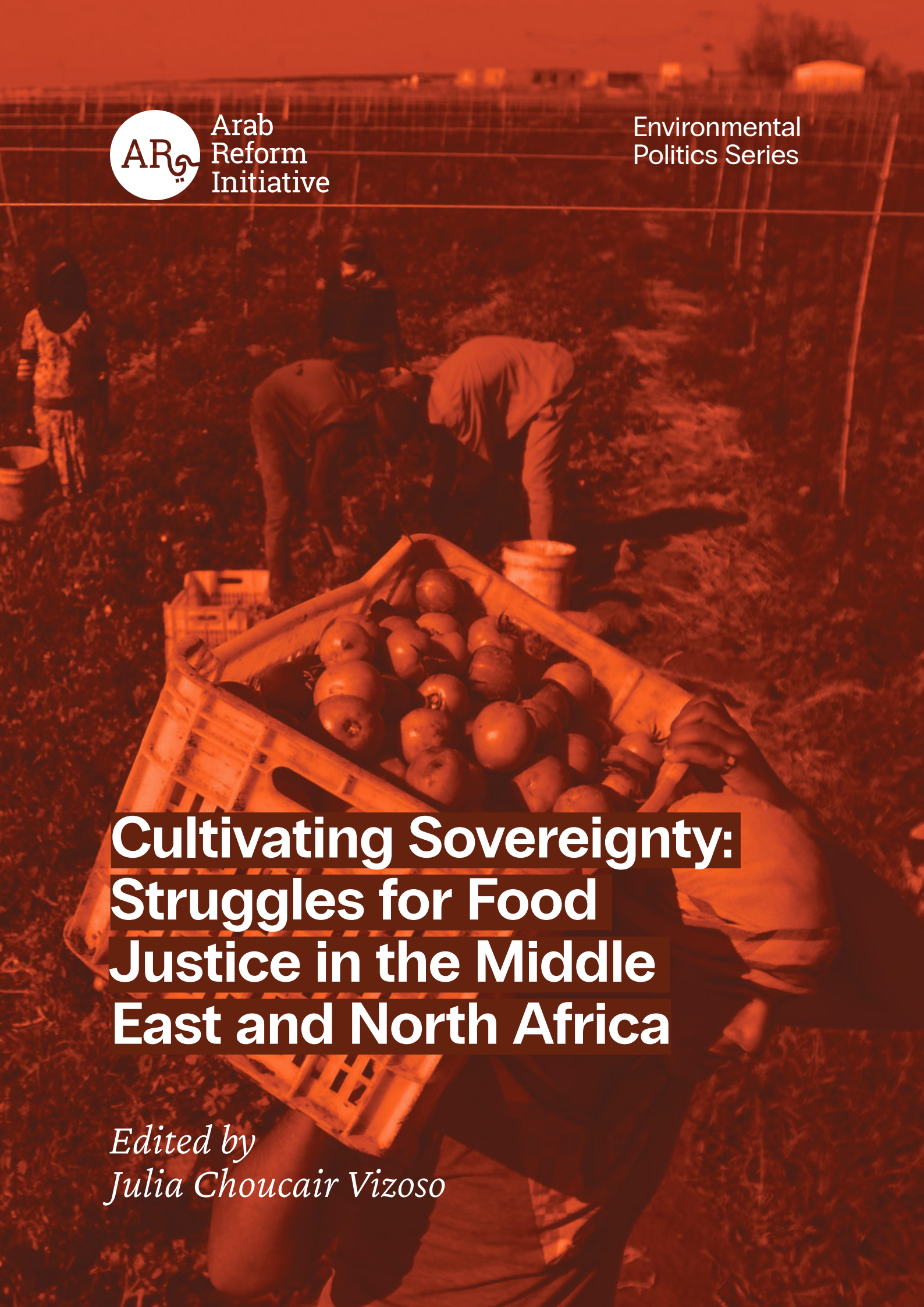


Arab Reform Initiative

Environmental Politics Series

Cultivating Sovereignty: Struggles for Food Justice in the Middle East and North Africa

Edited by
Julia Choucair Vizoso

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Table of Contents

Introduction

01 **The State of Food and Food Sovereignty Debates in the Middle East and North Africa**
Julia Choucair Vizoso *8*

Country Profiles

02 **Tunisia**
Imen Louati *34*

03 **Jordan**
Mariam Al Jaajaa, Lisa Shahin, Gabriella Neubert, Aya Bseiso *54*

04 **Palestine**
Abdalaziz Alsalehi *100*

05 **Lebanon**
Zeead Yaghi *132*

In the Spotlight

06 **Donor-Driven Agricultural Policies in Lebanon: Putting Farmers Last?**
Kanj Hamade *150*

07 **Beyond Technocratic Solutions: Iraqi Farmers and Local Climate Adaptation**
Taif Alkhudary *166*

08 **Syria's Seeds and the Politics of Care: A Materialist Feminist Perspective**
Interview with Ansar Jasim by Rula Asad *184*

09 **Seeds Beyond Submission: Quiet Resistance in Rural Tunisia**
Yasser Souilmi *196*

10 **The Political Geography of Seed Sovereignty: A Regional Perspective**
Julia Choucair Vizoso *204*



Chtaura, Lebanon: A laborer hangs a grape vine in a vineyard in Chtaura, in 2022. © Hisham Maatouk – ARI Image Allies (AIA).

Introduction

The State of Food and Food Sovereignty Debates in the Middle East and North Africa

Julia Choucair Vizoso

Introduction

In response to the deepening crisis of food systems as well as the invigorated debate and action on food sovereignty in the Middle East and North Africa (MENA), in 2023 the Arab Reform Initiative (ARI) launched a research agenda with the dual aim of documenting and diagnosing the challenges facing food provision in different countries of the region, and of analyzing the significance and potential of food sovereignty as a mobilizing frame, policy objective, and plan of action. To date, this agenda has produced the following outputs:

- Six national-level studies on food sovereignty in Egypt, Jordan, Lebanon, Morocco, Palestine, and Tunisia.[1] These in-depth reports document the state of food production in each country and the demands of food sovereignty advocates, analyzing the impediments to achieving them in the current political economies of the region, and identifying priorities and opportunities for change.

- A regional thematic study on the question of seed sovereignty across the region.

- Three case studies conducted in Lebanon on the history and politics of land tenure and its impact on agricultural labor and food production; the influence of Western donors on national agricultural policy; and the effects of Israel's ongoing ecocide on agricultural production and the lives and livelihoods of farmers, especially in the South.

- Three case studies conducted in Tunisia on the effects of EU trade agreements on national agricultural policy; the resistance of small-scale farmers to legislation that undermines local seed proliferation; and the economic viability of local seeds.

- Regular convenings of food sovereignty researchers and advocates, farmer union representatives, and civil society organizations to identify organizational and advocacy priorities, collaborate around setbacks and windows of opportunity, and grapple with difficult questions and tension points inside the movement itself.

As a regional-level framing and analytical synthesis of these outputs, this paper seeks to answer four sets of questions:

- Why has food sovereignty gained popularity in MENA in recent years? What are the political, economic, and geopolitical factors that have elevated food sovereignty as a mobilizing frame in the region? (see "Why Food Sovereignty? Why Now?")

- What does food sovereignty, as it is being used in the region, mean exactly? What are the salient elements and points of productive tension of this concept in regional discussions? (see "Can We Agree on What Food Sovereignty Means?")

- How can we make sure that food sovereignty speaks to the geopolitical realities of our region? How do we adapt or transform a concept that originated in Latin America, and whose global use has historically excluded voices from MENA, to the needs and aspirations of people in the region? (see "How Do We Take Seriously the Non-Sovereign Present?")

- Where do we go from here? What can researcher-activists do to push food sovereignty now and in the future in the diverse contexts of MENA? (see "(Some Brief) Ways Forward on Food Sovereignty")

To answer these questions, the analysis relies on a close reading and comparison of the research outputs listed above, a review of the literature on food sovereignty in the region, and the author's participant observation of food sovereignty discussions at 13 regional conferences, workshops, and working group meetings organized by ARI and other research organizations, activists, and agroecology networks in the region between 2022 and 2025. Group discussions and individual interviews with members of the ARI Food Sovereignty Working Group in 2024-2025 were particularly elucidating.

Given that sources and interlocutors have been selected for their involvement in food sovereignty efforts, the knowledge production, projects, and discussions represented here are not intended to reflect the full breadth of food- and agriculture-related discussions and efforts in the region. The aim was to gain insight into how those working toward food sovereignty are perceiving and navigating the challenges and tensions.

"Given that the world produces enough food to feed 1.5 times the current global population, food experts agree that the prevalence of hunger, malnutrition, and famine is not caused by insufficient supply but by political decisions and geopolitical machinations."

Why Food Sovereignty? Why Now?

More than a quarter of all human beings – 2.22 billion people – are food insecure,[2] 735 million are hungry, and 3.1 billion (more than 40% of the global population) cannot afford a healthy diet.[3] Food crises are also recurrent, and by some descriptions have come to define the first quarter of the 21st century.[4] The current food system is also a major driver of climate change: from farm to fork (including production, processing, transport, packaging, retail, and waste), the food system is responsible for around 26 to 34% of global greenhouse gas emissions.[5]

The problems and crises of the global food system are faced acutely by the people of MENA, the most food-dependent region in the world. According to the Food and Agriculture Organization of the United Nations (FAO), in 2022, hunger in Arab countries was 76% higher than in the year 2000. Almost 13% of the region's population (59.8 million people) is undernourished – well above the world average of 9.2%. Moderate or severe food insecurity affected 170.1 million people, 36.6% of the population.[6]

Given that the world produces enough food to feed 1.5 times the current global population, food experts agree that the prevalence of hunger, malnutrition, and famine is not caused by insufficient supply but by political decisions and geopolitical machinations.[7] The weaponization of food for geopolitical gain is expressed most catastrophically in how "starvation has unfortunately become a common tactic, as it has been widely used by competing major Powers and their allies as a weapon of warfare", as

phrased by UN Special Rapporteur on the Right to Food Michael Fakhri.[8] Describing Israel's starvation campaign in Gaza, Fakhri declared in July 2024: "Never in post-war history had a population been made to go hungry so quickly and so completely as was the case for the 2.3 million Palestinians living in Gaza".[9] In recent years, starvation has also been systematically deployed as a tool of control in the conflicts in Sudan, Syria, and Yemen.[10]

The 2007-2008 price spike in food staples and the disruptions in food systems brought about by the COVID-19 pandemic and the war in Ukraine – whereby global food prices rose by nearly 20% in 12 months[11] – have raised concern about the region's acute dependence on food imports. Four of the top 15 wheat-importing states in the world are in MENA: Egypt, Morocco, Tunisia, and Algeria (in order of rank in global imports).[12] If we expand the indicator to include wheat flour, Iraq, Yemen, and Syria are among the top six largest importers. The four-year blockade of Qatar by its neighbors in the Arabian Peninsula (2017-2021) also revived fears about food dependence, breathing new life into Arab Gulf states' long-standing securitized imaginaries about national sovereignty and national vulnerability.[13] Such fears were further stoked by the US-Israeli war on Iran that started on 28 February 2026, and specifically by the closure of the Strait of Hormuz through which as much as 70% of the Gulf's food imports pass.[14]

Amid the pitfalls and persistent structural and geopolitical crises of hunger, and the role of the current food regime in accelerating climate change, the concept of food sovereignty has come to occupy a principal place in the global discourse of social movements and social justice advocates. In Latin America, where the concept originated, the adoption of food sovereignty into state policy by a wave of progressive governments is one of the trends associated with the region's "left turn" in the 21st century.[15] Food sovereignty is also now recognized as a right in the national legislation of at least 15 countries and enshrined in the operative text of the United Nations Declaration on the Rights of Peasants and Other People Working in Rural Areas (UNDROP, Art. 15.4).[16]

Popularized by La Via Campesina, an international confederation of peasants that formed in 1993 – but used as early as the 1980s by Mexico's government and by peasant groups in Central America[17] – food sovereignty is most often framed as a departure from food security. The latter gained traction in the 1970s when scarce grain supplies on the world market sent prices soaring and led to famine in parts of Asia and Africa. At a 12-day UN World Food Conference in Rome in 1974, the term food security emerged to prioritize the issue of malnutrition, hunger, and famine on the international political agenda. According to the 1996 Rome Declaration, food security exists when "all people, at all times, have physical and economic access to sufficient, safe and nutritious food".[18] This definition of food security emphasizes four elements: availability of food; access to food; quality and safety of food; and stability of food supply.[19]

Food sovereignty advocates acknowledge that the origins of the term food security had critical political dimensions – Amartya Sen's work on the 1974 famine in Bangladesh showed that hunger is a political and institutional failure[20] – but argue that it was diluted over time and "became a technical term that just meant access to calories".[21] For the food sovereignty movement that organized around La Via Campesina, food security's focus on making sure people have enough to eat ignores the critical issues of who controls the food system and how food is produced. Food sovereignty advocates argue that although the Rome Declaration included a commitment to combat poverty and inequality as part of achieving food security,[22] it did not mention global trade policies or the commodification of food that contribute to poverty and inequality – thus separating food production from the relations of power that undergird the food system itself.[23] They also argue that the commodification of agriculture, which is not challenged by a food security framework, is self-destructive, "over-exploiting ecosystems, eroding soil fertility, contaminating water and spewing greenhouse gases into the atmosphere".[24]

As developed initially by La Via Campesina and furthered in the 2007 Nyéléni Global Forum for Food Sovereignty held in Mali, the most commonly cited definition of food sovereignty sees it as "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".[25] Two central themes dominate food sovereignty approaches: centering peasant and small-farmer autonomy and decision-making over food production and consumption; and emphasizing the territoriality of food and its connection to land and culture.

Until recently, food sovereignty discussions in

MENA were marginalized. Large peasant movements emerged in Latin America, Asia, and sub-Saharan Africa; not so in MENA.[26] Independent small peasants' associations have also not proliferated at the regional level. Moreover, unlike in other regions, urban activists and intellectuals have been mostly disconnected from rural constituencies and causes.[27] Though there was some resistance to the Green Revolution model of agrarian development among Arab intellectuals between the 1950s and 1980s, these narratives of dissent and their visions of alternative pathways have been invisibilized.[28] In academia, the Arab region has long remained absent from debates on the agrarian question and from Western academic journals.[29] The exception to the marginalization of food struggles in the region was Palestine, where control over food production has long been seen as essential to liberation from settler colonialism.[30]

Yet since the Arab uprisings of 2010-2011, food sovereignty has gained traction in public debates on development models across the region. For one, agrarian political economy has received renewed attention in the Arab region.[31] Scholars have investigated how smallholders, peasants, and herders have been central to anti-systemic political and economic struggles, especially in Egypt and Tunisia, though they were later squeezed from political and economic settlements.[32] This line of work emphasizes that the Tunisian uprising "began with an informal street vendor and a peasant [Mohamed Bouazizi] deprived of the (agricultural) means of production, who refused to give in to the rules of the market that forced him into employment and into the reserve army of capital".[33] After all, as researchers recognize, one of the first slogans of the Tunisian 2010-2011 uprisings was الأراضي تباعت والأهالي جاعت (The land has been sold, and the people are hungry).[34] Researchers also point to the fact that while "the use of the term [food sovereignty, FS] may still be unfamiliar, the struggles waged by farmers have centered on key elements of FS", documenting how farmers in Egypt and Tunisia fought for sustainable and guaranteed access to land and water, and struggled to access seeds that are not chemically modified.[35]

Egypt's 2014 constitution refers explicitly to the concept of food sovereignty[36] – the only Arab constitution to do so – after pressure from small farmers' unions, civil society organizations, and academics during the drafting process.[37] Egyptian activists count this inclusion as one of the wins of the 25 January revolution,[38] though, like other progressive stipulations in the constitution, it has remained "ink on paper".[39] The drafters of Tunisia's 2014 constitution also pushed to include a provision binding the government to implement a strategy of food sovereignty but ultimately failed to secure the necessary votes.[40]

More recently, the economic and financial crises in Egypt, Lebanon, and Tunisia and the resulting liquidity pressures on farmers to reduce imported and capital-intensive production inputs have also revived interest in practices associated with food sovereignty.[41] To circumvent the high prices of chemical fertilizers, pesticides, and seeds, farmers are more inclined to switch to the use of animal waste and organic fertilizers and engage in seed saving and sharing.[42]

Finally, discussions about food sovereignty are also gaining steam amid the global turn away from the hegemonic neoliberal ideas and institutions that have organized economic development since the 1980s, and toward industrial policy – the state-led development and transformation of specific strategic economic sectors.[43] This shift is being propelled by two interrelated, defining traits of the current global landscape: China's rising economic competitiveness despite (or because of) its deviation from the neoliberal prescriptions that Global North economies imposed on developing nations; and the decline of the multilateral economic architecture that governed global trade for decades.[44] Although the Global South remains bound by the deep asymmetries of a multilateral trade and investment architecture, the changing terrain is inspiring new calls in the South for "reimagining industrial development as both a sovereign right and a global necessity".[45] In this turn to industrial development, the inherent links that food sovereignty makes between sovereignty and sustainable development find a natural home.

One of the signs of the rising popularity of food sovereignty in the region is the increased participation of farmer unions and food activists from the region in global fora. Until 2013, La Via Campesina had only one Arab member, Palestine's Union of Agricultural Work Committees (UAWC). By 2024, five more organizations had joined, from Egypt, Mauritania, Morocco, Tunisia, and Sudan. Moreover, on 3 December 2023, La Via Campesina added "the Arab and North Africa region" as the tenth and newest region in its organizational structure.[46] Similarly, whereas only one participant from the region joined

the 2007 and 2015 editions of the Nyéléni Global Forum (a large international gathering of grassroots social movements to advance food sovereignty), the 2025 edition held in Sri Lanka included 45 participants (of 700) from Algeria, Egypt, Lebanon, Mauritania, Morocco, Palestine, Sudan, Tunisia, and Yemen.[47]

As another sign, at the regional and national levels, an array of food and agrarian movements and networks have mushroomed in recent years. These include the Arab Network for Food Sovereignty, the Siyada Network for Food Sovereignty, and dozens of agroecological networks, permaculture associations, seed libraries, seed sharing festivals, and civil society organizations devoted to food sovereignty.

Can We Agree on What Food Sovereignty Means?

Both food sovereignty and food security have evolved as "protean concepts, frequently imprecise, always contested and in ongoing processes of semantic and political evolution".[48] La Via Campesina's original articulation of food sovereignty intentionally sought breadth so as to be flexible enough to encompass different geographical and national contexts.[49] Moreover, as mentioned in the previous section, food sovereignty was originally defined to a certain extent by negation – not food security – an approach that inherently introduces definitional laxity.

Given its capaciousness, food sovereignty can pull in different directions. As even sympathetic critical perspectives note, there are unresolved, tough questions about extant food sovereignty frameworks, and their different components can find themselves in tension.[50] For example, in specific local contexts, aspirations for sustainability, proximity, sufficiency, and democracy can be at odds.[51]

As food sovereignty remains "a moving target",[52] one of the aims of ARI's work in this field is to identify the most salient elements of this concept in regional discussions as well as the points of productive tension. The following analysis unpacks four questions that emerged from collective discussions and knowledge production outputs.

Sovereignty for Whom?

Who is the sovereign of food sovereignty? As in other parts of the world, in MENA, competing sovereignties are shaping the political construction of food sovereignty (see Table 1 for a comparison of different conceptions of the sovereign in food sovereignty).

First, framing itself in opposition to the trade liberalization and structural adjustment policies that weakened state control over domestic food systems across the Global South, food sovereignty often emphasizes state sovereignty over food policy. According to Philip McMichael, La Via Campesina initially invoked sovereignty as a form of "strategic essentialism": a discursive move to reclaim state-centered, national sovereignty from the World Trade Organization – invoking collective rights already recognized by the UN (such as the right to self-determination, the right to development, and the right to permanent sovereignty over natural resources).[53]

State sovereignty approaches dominate the food sovereignty discourse in MENA, given the acute food import dependence of Arab states and their entanglement in imperial and neocolonial relations of dependency that determine their food policies and constrain sovereignty on all fronts. Unfavorable terms and consequences of trade agreements, especially with the European Union, are a popular focus – as are the deep shifts that have taken place in the cultivation of staple goods. For example, Egypt, one of history's great agricultural societies, now imports more wheat than any other country in the world.[54]

Citing the deep imbalance in the geographic distribution of food production between a small number of agro-exporting countries and many import-dependent ones (five countries account for at least 72% of the production of wheat, maize, rice, and soy crops),[55] researcher-activists call on their governments to organize agriculture toward greater self-sufficiency: to feed their societies by producing staple goods rather than importing them. The aspiration is to grow more grains for local consumption and fewer Jordanian nectarines, Egyptian strawberries, or Moroccan avocados for the export market. Under this general call, however, there is no consensus regarding the extent of change needed and the role of markets in achieving it.[56] Discussions also often reference the power of transnational corporate food conglomerates backed by the United States, although there is less research on this front than on

the effects of trade agreements. In Lebanon, as the contributions by Kanj Hamade and Zeead Yaghi in this series show, researcher-activists also emphasize the dominance of foreign donors, arguing that they dictate agricultural policy to the Ministry of Agriculture, often without any transparency.[57]

Yet many visions of food sovereignty do not cling to the nation-state. Inspired and informed by radical agrarian populism, food sovereignty also situates sovereignty in political projects independent of the state, anchored instead in the autonomy of cultivators. Calling for small food producers to reclaim more power in the food system, the central question becomes: How can small-scale producers exercise agency over what they produce, how they produce it, pricing, how they market their products, and how their products get distributed? Here, the focus is on resisting models of industrial agriculture based on large-scale farms owned by the few, particularly in Morocco, Egypt, and Jordan.

Moreover, and in opposition to narratives that pit cultivators against consumers who would seemingly prize cost considerations above all else, some argue that consumer sovereignty is also a casualty of this system; current food systems severely restrict people's ability to choose what to eat and to access nutritious food.[58] As in other regions, the dominance of a globalized diet with a high level of cheap carbohydrates has increased the incidence of food-related diseases, obesity, and malnutrition.[59] In Morocco, in 2022, it was estimated that more than 60% of the population was overweight and as much as 21% was obese, whereas obesity was almost non-existent in the 1970s.[60]

State and populist conceptions of food sovereignty are unsettled by a materialist feminist reading of sovereignty that foregrounds the gendered dynamics of food production, unpaid care, and reproductive labor. Speaking about food sovereignty in Syria in the interview included in this series, Ansar Jasim says that the feminist perspective "challenges the invisibilization of those who grow, cook, and care and instead centers them as political actors in the struggle for autonomy and justice".[61] A feminist read values reproductive and care labor as central to food systems, not peripheral, recognizing that food systems depend on "everyday acts of care, planting, watering, feeding, preserving, sharing, that are often feminized and unpaid".[62]

Another challenge to statist food sovereignty frameworks is the conceptualization of sovereignty beyond manmade borders through a "landscape approach", where sovereignty is advocated for in the context of an ecological territory or planting biome.[63] Such approaches complicate national projects by highlighting cross-border ecologies. They also expand populist frameworks that focus on farms or agricultural plots to recognize that a farm depends on the health of the surrounding forest (for pollinators), the upstream watershed (for clean water), and local biodiversity (for natural pest control).

These different conceptualizations of the sovereign leave much room for interpreting what it means in practice. They can also be hard to reconcile. For one, the desire for states to assert their sovereignty can clash with the desire for cultivators to assert their own sovereignty over local food systems. For example, in the battle over how seeds should be regulated, national governments are pushing for legislation and enforcement that restricts cultivator autonomy (among other negative effects) on the basis that it strengthens national sovereignty. In Lebanon, in defense of a proposed law to regulate seeds and plant breeders' rights – opposed by most food sovereignty advocates – officials argued that by protecting the intellectual property of Lebanese seed companies, the law would strengthen the economic competitiveness of Lebanese agriculture on the global market. Moreover, nationalist and statist ideas about food sovereignty tend to ignore the non-citizens – in the case of Lebanon, Syrian cultivators – who do most of the labor.

As in other regions, the question of the state's role is also a fault line inside the food sovereignty movement.[64] While some advocate versions of state-led food sovereignty, others resist the state-centric model and envision decentralized, locally embedded transformation, where bottom-up learning and networked experimentation lead the way.

These various positions pull against a generalized or idealized notion of food sovereignty, acknowledging the challenge of translating progressive principles and ambitions into context-specific, concrete political programs and strategies. As work toward food sovereignty continues to develop, the challenge is to work out specificities while retaining the sufficiently broad conception that has been its strength: its ability to unite a diverse range of social movements – including farmers, fishers, pastoralists, Indigenous peoples, environmentalists, agroecologists, social justice advocates, and consumer groups – who share an aspiration for a more just and sustainable food system, even if their specific struggles and contexts differ.

Table 1: A Comparison of Conceptions of "the Sovereign" in Food Sovereignty

Conception	Primary Sovereign	Goals
Statist	The State	• Achieve national policy autonomy • Reduce food import dependence • Increase self-sufficiency
Populist	Peasants/Cultivators, Workers, Consumers	• Achieve democratic control of food systems • Increase agency of small-scale producers • Shorten food system supply chains
Indigenous	The Community and Ancestry	• Ensure cultural survival and restoration • Protect seed saving and traditional harvesting practices • Restore ancestral diets
Materialist Feminist	Care workers and caregivers who maintain the cycle of life	• Ensure women have direct legal land titles and decision-making power in agricultural cooperatives • Value reproductive and care labor as central to food systems • Attain reproductive justice
Ecological/ Landscape	The Ecosystem (non-human actors that make food possible: pollinators, soil microbes, water cycles, and climate)	• Restore biodiversity • Restore soil quality • Preserve watersheds

How Can Food Sovereignty Actually Center Farmers?

"Are there any farmers present in the room?" This question has been raised by different participants at every event on food sovereignty in the region the author has attended, with the intention to emphasize the assumed, and often real, exclusivity of the convening and to call for the inclusion of farmer voices.

Centering cultivator sovereignty in MENA has not been immediately apparent. Unlike in Latin America, where food sovereignty grew organically out of peasant and small-farmer struggles (e.g., La Via Campesina), discussions in MENA have been introduced more recently in a more top-down way by civil society, scholars, and NGOs (as discussed in "Why Food Sovereignty? Why Now?"). This difference raises questions about whether current food sovereignty agendas are grounded in the concrete needs and priorities of peasants and small producers, and it cautions against treating "peasants/small farmers" as a homogeneous group.

In her research on Tunisia for this series, Imen Louati highlights the disconnect that can occur between macro-level food sovereignty discussions – among

urban intellectuals focused on dismantling the food security framework – and the realities of small-scale farmers and impoverished rural citizens. Similarly, in his work on Lebanon for this series, Zeead Yaghi documents the concern that certain approaches to food sovereignty risk remaining niche and catering only to the "ethical urban class".[65]

To bridge the semantic distance between academic discussions of food sovereignty and the everyday conditions for small farmers and agricultural workers, we need to first "demystify" and also nuance the figure of "the farmer" (as the contribution by the Arab Group for the Protection of Nature (APN) on Jordan puts it).[66] As elsewhere in the world, farmers and rural communities are heterogeneous; they include various "classes of labor"[67] and interests, and have differential access to land, agricultural inputs, capital, and decision-making capacities.[68] The interests of landless laborers may conflict with those of small-scale farmers, seasonally hired farm laborers, subsistence farmers, poor pastoralists, and so on – though they are all impoverished working people.[69]

As the studies on Jordan and Tunisia demonstrate, a necessary first step is documenting in each specific context the heterogeneity of farmers and their interests. Such analysis is necessary to reveal different, and even conflicting, social positions. Yet far from reifying categories, it can also serve to "identify opportunities for alliance-building between farmers contending with the same root causes, albeit from varied social positions", as the Jordan study does.[70] In the case of Lebanon, it is imperative to recognize that most agricultural labor is done by Syrian migrants and seasonal farm workers who remain structurally excluded from the food sovereignty conversation.[71]

Louati also calls on food sovereignty advocates to directly engage small-scale farmers in all food sovereignty discussions; address farmers' immediate challenges, such as access to resources, fair prices, and their ability to feed their families; and prioritize issues of land ownership, rural development, and agricultural modernization.[72] Her own study is partly based on a roundtable conducted with small-scale farmers, local unions, and mutual agricultural service societies in Kairouan, a critical agricultural region of Tunisia.[73] Similarly, APN's study relies on focus group discussions, interviews, and consultations with around 100 small-scale farmers across the Jordan Valley.[74] Beyond these contributions, social scientists and ethnographers are increasingly turning to agrarian research and fieldwork in rural areas of the region.[75] And, to return to the question at the beginning of this section, anecdotally the number of farmers who attend convenings on food sovereignty, though still minoritarian, is on the rise.

Ethnographic research is also key to avoiding the facile dichotomous conceptualizations that can seep into food sovereignty discussions: traditional vs modern, subsistence vs commercial, or local vs global. For example, in her research on the recent history of peasant farming in a Moroccan oasis, Karen Rignall complicates the assumed link between small farming, tradition, and agrodiversity, finding that "the agricultural landscape in some parts of the oasis was in many respects more, not less, diverse in 2010 (the date of field research) than it was 50 years before". This raises the possibility that "the agrodiversity of many smallholder systems may in fact be 'new', a product of recent agrarian transformations that adapt and in some cases reject agricultural traditions that peasants do not always want to protect".[76] Rignall beckons us to see peasant farming not as "a refuge or a site for nurturing food sovereignty so much as a site of struggle over labor, where the 'day-to-day accumulation, re-investment and production relationships in capitalism and the farmers' role in shaping them' are contested".[77]

Beyond their marginalization from knowledge production, small-scale farmers are marginalized from the political landscape itself. A point of consensus in all food sovereignty discussions is that the mobilization of producers is critical but the hurdles are daunting. In Tunisia, small farmers are the least represented in farmers' unions and lack bargaining power inside the large unions.[78] In Lebanon, there are no institutions for strategic political organization among small farmers and cooperatives are ineffective and donor-driven.[79] Yet across the region, as the studies in this series document, food sovereignty activists have started to form alliances with farmer groups to encourage collective advocacy and foster robust civic space.

Should We Speak of Food Security?

There is no quicker way to create a fault line in a discussion with food sovereignty advocates than to reference "food security" as the operating framework. Yet while food sovereignty opposes the narrow and depoliticized uses of food security, it is

not in opposition to the goal of food security per se: that all people, at all times, have physical and economic access to sufficient, safe, and nutritious food. As APN's Mariam Al Jaajaa puts it, "You cannot achieve the goals of the classical concept of food security – the four main pillars [food availability, access, quality, and stability] – without food sovereignty … food sovereignty enables food security".[80] From this perspective, food sovereignty is a pathway to achieving the desirable goals of food security – while recognizing that the goals are also not sufficient; the question is not only whether people have access to affordable and nutritious food, but whether food systems are environmentally sustainable and respect the rights, culture, livelihoods, and self-determination of the people who work the land and depend on it.

However, for other food sovereignty proponents, "the term food security is now so entangled with policy that it is almost impossible to use the term without conceding to the imperatives of the market and asymmetries of power that this entails".[81] In her paper, Louati distinguishes between the goals of food security and the "liberal interpretations" that reduce it to balance-of-trade considerations ("market-dependent food security").[82]

How Does Food Sovereignty Relate to "the Right to Food" and "Food Justice"?

Finally, another way to delineate the parameters of the food sovereignty framework is to explicitly juxtapose it against the three other dominant food frameworks: food security, the right to food, and food justice (the latter of which has the greatest overlap and symbiosis with food sovereignty). As a contribution to that effort, Table 2 lays out the defining characteristics of the four food frameworks.

Table 2: A Comparison of Food System Frameworks

	Food Security	Right to Food	Food Sovereignty	Food Justice
Primary Focus	Availability and Access: Ensuring sufficient food is available, and people have the means to obtain it.	Human Rights and State Obligation: Recognizing access to adequate food as a fundamental human right and the duty of states to ensure it.	Control and Autonomy: Emphasizing the ability of people to control their food systems and how food is produced.	Equity and Fairness: Addressing systemic inequalities and injustices within the food system, particularly for marginalized communities.
Key Question	Is there enough food, and can people afford it?	Does everyone have access to adequate food? What are the state's obligations to ensure this?	Who controls the food system? How is food produced? For whose benefit?	Who has access to healthy food? Why are there disparities? What are the root causes of injustice?
Scope of Action	Often focuses on national and global food supply, market stability, and safety nets.	Focuses on establishing legal and policy frameworks at national and international levels to guarantee the right to food for all individuals.	Advocates for transforming the entire food system through local control, sustainable practices, and empowering food producers and communities.	Works to address social, economic, and racial disparities within the food system through advocacy, community organizing, and policy change.
Agency/ **Actors**	Often involves governments, international organizations, and the private sector.	Places the primary responsibility on the state, while also recognizing the roles of individuals and other actors.	Centers the rights and knowledge of food producers (cultivators, fishers, etc.), communities, and consumers.	Emphasizes the agency of marginalized communities and the need for their participation in shaping food systems.
Sustainability	Can be achieved through various means, not necessarily sustainable.	Increasingly recognized as a crucial aspect of the long-term realization of the right to food.	Strongly emphasizes ecologically sound and sustainable production methods.	Recognizes the interconnectedness of social and environmental justice and often advocates for sustainable practices.

	Food Security	Right to Food	Food Sovereignty	Food Justice
Power Dynamics	Does not inherently challenge existing power structures in the food system.	Focuses on the power relationship between the state and its citizens regarding the provision and access to food.	Directly challenges corporate control and advocates for more democratic food systems.	Explicitly addresses power imbalances and aims to dismantle systemic oppression within the food system.
Relation to Land	Land as a resource for production: Views land as a crucial natural resource for agricultural production aimed at maximizing yields to ensure a sufficient food supply.	Acknowledges the importance of culturally appropriate food, which for many Indigenous communities is deeply connected to their ancestral lands and territories.	Land as a foundation for rights and autonomy: Considers land as intrinsically linked to the rights, culture, livelihoods, and self-determination of the people who work it and depend on it.	Food justice advocates argue for the right of communities to access and control the land and resources necessary to grow, gather, and produce their own food.
Theory of Change	Food security is achieved by implementing interventions and policies that **strengthen four pillars**: availability, access, utilization, and stability.	Change occurs through the **recognition and realization of food as a fundamental human right**, placing an obligation on states to ensure access to adequate, nutritious, and culturally appropriate food for all.	Change happens by **empowering people and communities** to regain control over their food systems from the hands of corporations and global markets.	Change happens by **dismantling systemic inequalities and addressing historical injustices** that create disparities in access to healthy and sustainable food. This involves:

	Food Security	Right to Food	Food Sovereignty	Food Justice
Mechanisms of Change	**Increasing Food Production and Supply:** through improved farming techniques, access to inputs, irrigation, and sustainable land management. **Improving Market Functioning and Trade:** creating efficient and fair markets, reducing trade barriers, and enhancing infrastructure. **Enhancing Household Income and Purchasing Power:** Programs aimed at poverty reduction, employment creation, and social safety nets increase people's ability to buy food. **Strengthening Social Safety Nets:** Providing direct food assistance, cash transfers, or food vouchers to vulnerable populations. **Improving Nutrition and Health:** promoting diverse and nutritious diets, improving sanitation and hygiene practices. **Building Resilience to Shocks:** help individuals, communities, and nations withstand and recover from events like climate change, economic downturns, and conflicts that can disrupt food systems.	**Legal and policy frameworks:** Establishing laws, policies, and institutions that guarantee the right to food. **State accountability:** Holding governments responsible for fulfilling their obligations through monitoring, legal recourse, and social accountability mechanisms. **Social protection programs:** Implementing safety nets and assistance programs to ensure access for vulnerable populations. **Promoting sustainable resource management:** Ensuring access to resources like land and water for food production. **Education and awareness:** Raising awareness about the right to food among rights-holders and duty-bearers.	**Building grassroots movements:** Organizing cultivators, consumers, and other stakeholders to collectively demand policy changes and create alternative food networks. **Promoting agroecology:** Shifting toward sustainable and ecologically sound farming practices that are less reliant on external inputs. **Localizing food systems:** Strengthening local production, distribution, and consumption to reduce dependence on global supply chains. **Advocating for policy changes:** Pushing for agrarian reform, fair trade policies, and constitutional recognition of the right to food sovereignty. **Valuing traditional knowledge:** Recognizing and promoting Indigenous and local food knowledge and practices.	**Centering marginalized communities:** Prioritizing the needs and experiences of those most affected by food insecurity and environmental burdens. **Addressing root causes:** Tackling issues like racism, colonialism, economic exploitation, and discriminatory policies. **Building community power:** Empowering marginalized communities to organize and advocate for their rights and self-determination in food systems. **Promoting equitable access to resources:** Working for fair distribution of land, water, and economic opportunities. **Transforming institutions:** Challenging and changing policies and practices within government, corporations, and other institutions that perpetuate food injustice.

How Do We Take Seriously the Non-Sovereign Present?

Global discussions on food sovereignty tend to assume that national and popular sovereignty are secured in the first place, albeit to varying degrees. Yet the MENA context directly confronts this assumption. As Max Ajl puts it, "Food sovereignty has emerged against an assumption that sovereignty is possible. But in MENA, anti-systemic struggle is often at the stage of securing sovereignty, not imbuing it with social meaning".[83] As such, food sovereignty discussions in the region must center the geopolitical and structural conditions that undermine sovereignty or even preclude it altogether.

Centering War, Genocide, and Ecocide

Over two-thirds of the undernourished people in MENA are in countries at war,[84] with Palestine, Sudan, Yemen, and Syria topping the UN Hunger Hotspots reports in 2025.[85] War is a direct assault on food sovereignty as it dismantles the very foundations upon which local, sustainable, and autonomous food systems are built. The effects include:

- the destruction of agricultural land and infrastructure (destroying irrigation systems and storage facilities as well as transportation networks for the movement of food from production areas to markets);
- displacement of farmers and agricultural workers leading to labor shortages and the abandonment of crops;
- disruptions of supply chains;
- loss of seeds and livestock crucial for future production;
- disruption of knowledge transfer related to local food production;
- destruction or weakening of local governance structures and community organizations that are essential for enacting food sovereignty;
- increasing reliance on external humanitarian food aid, which can undermine local production and create dependency on external actors;
- contamination of land and water sources, affecting long-term agricultural productivity;
- and pressures and incentives on farmers and pastoralists to become militants, as we have seen in Iraq (such as the Marshes region) and Sudan.[86]

Food systems have also been a direct target of imperial and colonial violence in the region. For example:

- In 2003, in what was "probably the most dramatic act in a string of attempts by the US-occupation to transform Iraq's economy, and food and agriculture system, into a model of neoliberalism", a bombing raid by the US military destroyed Iraq's National Seed Bank, located in Abu Ghraib, which led to the loss of the country's thousand-year-old seed varieties.[87]
- In July 2025, the UN declared 98.5% of cropland in the Gaza Strip no longer fit for cultivation. Israel's ongoing genocide and ecocide had left 2.3 million people with a mere 232 hectares for cultivation.[88] That same month, Israeli forces bulldozed the seed multiplication unit of the seed bank run by the UAWC in al-Khalil (Hebron), the only seed bank in the West Bank, which safeguarded over 70 varieties of indigenous heirloom seeds, many of which no longer exist elsewhere in Palestine.[89]
- Well before the Gaza genocide and the escalation of oppression in the West Bank, Palestinians had experienced Israel's weaponization of food to control and punish: from preventing olive harvests in the West Bank, to routinely leveling and bulldozing Palestinian agricultural land, to calorie counting during its siege on Gaza before 7 October 2023 – as the report in this series by Abdalaziz Alsalehi and the Palestinian Environmental NGOs Network (PENGON) documents.[90]
- In the first three months of Israel's war on Lebanon in 2023, agricultural lands topped the list of the most heavily bombarded targets, suffering severe damage to crops, soil, and livestock, including through the use of white phosphorus, a substance banned under international law (but previously deployed by Israel in Lebanon in 1982, 1993, 1996, and 2006).[91] As Public Works Studio's comprehensive mapping of Israeli attacks on Lebanon reveals, ecocide is a deliberate strategy rather than collateral damage.[92]

Amid these catastrophes that have devastated not only human lives but also the ecological and social fabric of the region, regional agendas for food sovereignty cannot but attend to the geopolitical context and specifically to war. Such an imperative becomes even more urgent as the US-Israeli war on Iran engulfs the whole region, and as Israeli leaders reveal that waging wars across the region is no longer a means to an end, but the end itself.[93]

The practical challenges of centering war are multiple: safety

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considerations in conflict settings impede fieldwork and displace local researchers and activists; war disrupts and can decimate existing knowledge about local food production; and rapidly changing conditions and unforeseeable events on the ground impede planning and render research quickly outmoded.[94] Moreover, cycles of destruction and displacement can foreclose any activity or thought process beyond the immediate demands of survival.[95]

Yet centering war in food sovereignty work also faces a different type of challenge: war continues to be treated as a residual category or state of exception in both knowledge production and many advocacy fora – well beyond the topic of food sovereignty. For example, environmental justice or just transition discussions rarely begin with the settings and peoples subjected to war, occupation, and ecocide. But as APN's Hassan Jaajaa puts it: "How can we speak of a just or green transition when nature itself has become a military target?"[96]

Despite these challenges, war, occupation, ecology, and food sovereignty are increasingly intertwined in academic and interdisciplinary work from the region.[97] At the Arab Reform Initiative, the need to understand ecology together with war and occupation has constituted one of the founding pillars of the Environmental Politics Program.[98] Researcher-activists from the region are also centering these connections in global fora – although their participation is often itself impeded by war,[99] or by visa restrictions from the Global North and many Arab governments.

In centering war and occupation, Palestine's experience with food sovereignty is particularly critical. First, Palestine is a case study of "the continuous role that (settler) colonialism, imperial wars and de-development play in shaping agrarian landscapes and rural livelihoods" and proof that colonialism and war are neither exceptional events nor a residue of the past.[100] Second, there is much to learn from how Palestinian activists see food sovereignty as liberation from settler colonialism and have continued to operate while being denied sovereignty, control over their territory and resources, and political freedom.[101] Third, we can also learn from the many ways that different Palestinian rural communities have used their lands and produced their food under colonial regimes of law, settler capital, and global markets.[102]

As ecological devastation becomes a more common experience for the rest of the region and the world, the conditions of survival and life in Palestine, Lebanon, Iraq, or Yemen must be in the foreground.

Addressing New Core-Periphery Relations

Food insecurity is not distributed evenly across the region. Although they import around 90% of their food, the states of the Gulf Cooperation Council (GCC) rank among the world's highest in terms of food security and affordability, and their citizens spend a low share of their income on food.[103] In the past decade, food insecurity in the GCC has declined, from 11.3 to 10.3 million people.[104] GCC food systems prove that geography does not determine food

systems, and that access to food is predicated on the political and economic power of states.

Food sectors in the Gulf have undergone a fundamental transformation in the last few decades.[105] Once reliant on subsistence agriculture combined with some trade – which resulted in the depletion of groundwater aquifers – GCC states are now at the center of global food commodity chains, heavily dependent on imported food managed through a network of agribusiness conglomerates.[106] Oil revenue has granted Gulf states the financial means to manage a stable and affordable food supply through imports of food commodities, and increasingly, through acquisitions of agricultural land abroad, particularly in Egypt and Sudan. According to the Land Matrix database, Gulf states acquired more than 2 million hectares of agricultural land abroad between 2000 and 2022.[107] They have also used their purchasing power to buy raw goods from other countries for production and export. The United Arab Emirates (UAE) is also relying on its ever-growing logistical capacity to acquire land and food commodities, including a steady vertical integration of transport companies into food conglomerates.[108]

Aside from highlighting the need to acknowledge geographic variation across the region, these recent changes in Gulf food systems compel us to understand how changes in Gulf agribusiness – within the broader context of the "internationalization of Gulf capital" – are reworking food systems and agricultural development across the wider MENA region by positioning "Gulf agribusiness firms at the core of the entire agricultural value chain".[109] The effect of the Gulf is naturally not homogeneous: Morocco and Tunisia continue to be more tightly linked to European markets. Yet like other rising economic powers, GCC states – particularly Saudi Arabia and the UAE – have created new geographies that defy a linear North-South configuration. The expansion of agribusiness in the GCC is a sign of how in an increasingly multipolar world, food systems are evolving as emerging economies in the Global South pursue ambitious national food security strategies to meet their rising import demands. Although historically characterized by a linear pattern of North-South exchange, the current global food system is "more polycentric and features new arrangements of core-periphery relations".[110]

Beyond their implications for research, these shifts pose a challenge for a regional food sovereignty advocacy agenda, which is more comfortable rallying around a critical and antagonistic position vis-à-vis the interests of the Global North, International Financial Institutions, or Zionist settler colonialism, than those of other Arab states. This is especially the case for food sovereignty advocates whose vision is one of Arab economic integration (التكامل العربي) or for those who seek to conduct research in the Gulf or engage its research institutions, environmentalists, or residents. In practice, advocates of Arab integration are currently navigating this space with a measure of diplomacy; they insist on an aspirational vision of regional integration in food production and trade but one that is anchored in the principles of national sovereignty and equal exchange.[111]

Recognizing Climate Change as a Central Structuring Force

Climate change is reshaping food sovereignty struggles in MENA. Prolonged droughts and changing rainfall patterns are reorganizing food systems, deepening class inequalities, and reconfiguring the politics of water, land, and seeds. Across the region, small-scale farmers, fishers, and pastoralists find themselves on the front lines of climate change despite contributing the least to it.

In Morocco, for example, extended cycles of drought have transformed agriculture and rural livelihoods. As Fayrouz Yousfi explains:

Over roughly seven years of recurrent drought, irrigated farming has become increasingly dependent on purchased water (pumped groundwater, private wells, or costly collective schemes), which only medium and large farmers or agribusinesses can afford at scale. Meanwhile, smallholders and poorer households with limited capital struggle to secure water for irrigation, are pushed out of higher-value crops, or exit farming altogether, reinforcing dependence on wage labor and cheap, often imported food. This kind of climate-driven differentiation, between those who can buy or capture water and those who cannot, directly shapes who can exercise any real "sovereignty" over production choices, cropping patterns, and livelihoods.[112]

Taif Alkhudary's study on Iraqi farmers in this series provides a critical case study of why food sovereignty and climate change analyses must be integrated.[113] As Alkhudary argues, climate adaptation programs by the Iraqi government and international

organizations have adopted a technocratic approach that fails to address the socioeconomic inequalities and political hierarchies that farmers must navigate to practice agriculture, and which render some of them more vulnerable to climate change than others. In response, to try to navigate extreme weather conditions and water scarcity, Iraqi farmers have adopted unstructured, spontaneous local adaptation strategies – such as well-digging, growing new types of drought-resistant crops, or planting more than one type of produce.

These examples illustrate that if climate change analyses and responses ignore a food sovereignty framework, they risk reinforcing the very power structures that make people vulnerable in the first place. Conversely, if food sovereignty does not center climate change, we miss the climate-driven conditions and differentiation in who can exercise sovereignty in food production.

Moreover, this recognition beckons us to integrate the food sovereignty and water justice agendas, which currently operate mostly in silos. Research questions can include: how recurrent droughts, heat extremes, and water scarcity are altering class relations in the countryside; how they intersect with seeds, credit, and land tenure; how climate adaptation policies and water governance (public subsidies, privatized irrigation, large dams, groundwater regulation) are either enabling or undermining food sovereignty; how water has been increasingly diverted to agribusiness farms for irrigation of export-oriented crops; and how states and international organizations have legitimized agribusiness control over water resources. In this series, APN's study on Jordan provides an example of how to integrate water governance and food sovereignty analyses.

Finally, linking back to the discussion around centering war, a regional focus on climate change must also acknowledge and highlight how wars, militarization, and the military-industrial complex fuel the climate crisis in the first place.

(Some Brief) Ways Forward on Food Sovereignty

The reports on food sovereignty produced for this series formulate extensive recommendations directed at a multitude of stakeholders, from civil society to municipalities to governments to donor agencies – and ranging from structural transformation to immediate reforms. Rather than repeat them all here or attempt a synthesis that would understate the specific situation of each country, the following points – in keeping with the focus of this report – are addressed to food sovereignty researcher-activists. They emerge from the written outputs and the different convenings organized over three years.

- Bridge the semantic distance between how farmers describe their everyday conditions of insecurity and academic discourses on food sovereignty.
- Take seriously the heterogeneity of food producers and identify with greater nuance their different challenges, interests, and possibilities for mobilization.
- Focus attention on the diversity of ways in which food producers and rural communities are surviving in settings of ecocide and ecological devastation.
- Make visible the connections between militarization and food sovereignty in international fora.
- Employ intellectual and organizational efforts to demonstrate that what are perceived to be the mutually incompatible demands of workers, farmers, and consumers operating in different food system activities are, in fact, shared interests.
- Advocate for the establishment of national legal frameworks that ensure the socioeconomic rights of food producers and agricultural workers.
- Advocate for national-level legal restrictions on the enclosure of land, which many smallholders rely upon to construct a viable livelihood.
- Resist the privatization of public lands whose use has been protected for agriculture (for example, plans to privatize Amiriyya lands in Lebanon, which periodically come up in parliament).
- Resist governmental restrictions on saving and sharing local seeds.

- Advocate for broadening laws on cooperatives to facilitate the creation and sustainability of cooperatives.
- Identify models from other regions on community-led registration methods and models of Participatory Guarantee Systems that could be adapted to MENA contexts.
- Integrate the water justice and food sovereignty agendas.

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GABES, TUNISIA - Tunisian farmer Nafti Nabli cultivates corchorus olitorius, a plant which leaves are used to cook mulukh-iyah, a traditional soupy dish in Tunisia, August 2017. © Sebastian Castelier – Shutterstock.

Tunisia

Food Sovereignty and the Just Transition in Tunisia

Imen Louati

Introduction

The Tunisian revolution of 2011 was the result of decades of economic inequality and social injustice. The unequal distribution of wealth – combined with the neoliberal policies and austerity regimes enforced by international financial institutions – created an increasingly unstable situation and led to social unrest. The impoverishment of the peasantry and the working class, together with misguided agricultural reforms that increased the price of several foodstuffs and the marginalization of the country's interior, were the main reasons for much of society's dissatisfaction with the regime of Zine el-Abidine Ben Ali.[1] Underlying this crisis was the regime's farm policy, which favored large-scale agriculture over small-scale farming and engaged in land-grabbing practices. In fact, it was the frustration of Tunisia's rural poor that sparked the uprisings, which first began in the regionally dominant farming governorate of Sidi Bouzid, progressing through rural governorates before finally breaking into cities and ultimately the capital. This trajectory highlights that while demands for political freedoms were a factor, social and economic issues, and in particular rural ones, lay at the source of the unrest.[2]

In the post-revolution period, however, political and identity-based concerns have saturated discourse and policy, overshadowing the agricultural and rural dimensions that drove the initial rebellion. Neither government policy nor any political party platforms have addressed agricultural and rural issues comprehensively, as evidenced by the continued application of imported paradigms of agricultural development.[3] In contrast, civil society organizations (CSOs), progressive researchers, and unionists are increasingly recognizing the centrality of agriculture in the implementation of development policies; they are increasingly inclined toward the international movement around the rights of people in rural areas, as well as toward climate issues and the green transition.

This chapter intervenes in this space by deepening the discussion around how food sovereignty could be realized in the Tunisian context. The chapter asks: How can Tunisia meet the interconnected challenges of climate change, globalization, and national governance to transform its agrifood system into a more sustainable and just one? It offers an original examination of Tunisian food systems and comprehensive analyses of existing governance and policy frameworks. It also broadly highlights the crucial contributions of unions, activists, and civil society, which have not been explored to date. This approach uncovers unique opportunities and challenges to implementing food sovereignty in Tunisia and highlights innovative areas for policy change that can contribute to a sustainable and inclusive agrifood system for Tunisia, particularly considering the escalating climate crisis.

Concepts and Methodology

Applied to the agrifood system, the concept of just transition refers to a shift to a more sustainable, equitable, participatory, and resilient food system. First conceptualized in reference to energy transitions in the context of the global climate crisis, just transition in the context of food indicates the move to practices that contribute to lower greenhouse gas emissions, preserve natural resources and biodiversity, ensure apportionment of benefits among marginalized groups, and guarantee social equity and economic justice. Through a just transition lens, the agrifood system must embrace: sustainable forms of agriculture that minimize the environmental footprint of food production; a model of governance that guarantees participation through inclusive spaces and decision-making mechanisms; and the establishment of sustainable and fair trade.

Transnational social movements like La Via Campesina (LVC) advocate for this kind of deep shift, demanding that food systems prioritize social, cultural, and political concerns – including power relations and democratic governance – over purely technical adjustments like high-yield agriculture reliant on genetically modified organisms (GMOs), large-scale irrigation, advanced machinery, and chemical inputs. As defined by LVC, food sovereignty is a comprehensive framework that goes beyond simply producing food by involving social, cultural, political, economic, and ecological dimensions to reach a fundamental transformation of food systems that prioritize the rights and needs of people and communities over the interests of transnational corporations and markets. Food sovereignty, as articulated by LVC, is an appropriate analytical framework for understanding current struggles while proposing a new vision for the just transformation of food systems, particularly in the Arab region.

The findings of this chapter emerge from a mixed approach that combines: a thorough review of the primary and secondary literature on the agrifood system in Tunisia; an in-depth analysis of the governance system and agricultural policies; and qualitative data collected through formal and informal stakeholder interviews as well as roundtables. Seven formal interviews were conducted during April and May 2025, both online and in person, aiming to capture perspectives on Tunisian agricultural policies and their impacts, especially on small-scale farmers. The goal was to document different viewpoints, narratives, and interactions among key players, informing a more inclusive dialogue about creating a sustainable agrifood system.

To complement the interviews, the author, along with other researchers and staff of the Arab Reform Initiative, held two validation roundtable discussions. The first roundtable ("Farmers Group") took place on 8 April 2025 in Kairouan, a critical agricultural region. This session specifically targeted small-scale farmers, local unions, mutual agricultural service societies (SMSAs), agricultural development groups (GDAs), local civil society actors, and local media. The second roundtable ("Civil Society Group") was held on 18 April 2025 in Tunis, engaging national-level civil society, researchers, media, and unions. Approximately 20 people attended each roundtable. In both events, preliminary findings were shared, and critical discussions with a diverse group of stakeholders were facilitated. A snowball sampling technique was used to select participants, leveraging the author's network to include diverse voices from civil society, academia, trade unions, government, and media. The observations, recommendations, and key themes from both roundtables and interviews are fully integrated into this chapter.

Unpacking Tunisia's Agrifood System

Tunisia's Farms and Farmworkers: Basic Facts

Tunisian agriculture is characterized by a diversity of production models that fall into four major farm types:

- Subsistence farms produce a minimum income, either in money or in kind, to meet basic household requirements, often supplemented by insecure sources of outside income.
- Family-run business farms provide employment and regular incomes for some portion of the family labor force; they tie farm operations to familial structure and aspirations, including interdependent production and consumption patterns.

- Employer farms are rooted in the family farm model but distinguished by their greater reliance on non-family workers and increased capital inputs, primarily of family origin.

- Capitalist or entrepreneurial farms are profit-making farm enterprises that include state-owned enterprises and large private farms; they are widespread in the livestock, fruit farming, and aquaculture sectors.[4]

- Tunisian farmers are also conventionally divided into three categories based on their land holdings:

- Small-scale farmers, who own less than 5 hectares, represent 54% of farmers.

- Small- and medium-scale farmers, who own between 5 and 10 hectares, comprise 75% of farmers and collectively own approximately 25% of the agricultural land.[5]

- Large-scale farmers are those who own more than 10 hectares. It should be noted that farmers who own more than 50 hectares represent only 3% of farmers, but own 34% of the agricultural land.

Thus, the Tunisian agriculture sector is characterized by a sizable percentage of small- and medium-sized farms and an unbalanced distribution of land ownership between differently sized farms.

Female farmworkers are invisible, with scarce data available. As of 2017, only 44,000 farmers were women, compared to 438,000 male farmers, or 8% of the farming population. Female farmworkers constitute 70% of the workforce of small farms, where they deal mainly with livestock rearing and food preparation, crafts, managing house responsibilities, and childcare. Even though they contribute approximately 80% of agricultural production, women manage only 6.7% of farms and own only 5.6% of the land due to patriarchal inheritance laws and traditions. Female farmworkers also earn less than their male counterparts: only 33% have social security, and only 10% of rural women have access to free healthcare. Furthermore, female farmworkers and rural women have limited access to training and are extremely underrepresented in agricultural organizations.[6]

Mapping the National Agricultural Governance Structure

Tunisia's agricultural sector is centrally governed by the Ministry of Agriculture, Water Resources, and Fisheries (MARHP, its French acronym), which oversees all aspects from policy formulation and legislation to resource management and institutional support. The MARHP manages water resources, agricultural infrastructure, and natural resource preservation, while also strengthening agricultural institutions, guiding land reforms, supporting professional associations, and managing regional agricultural development. Beyond its administrative role, the MARHP controls strategic commercial operations through entities like the Cereals Office (Office des Céréales) for grain collection and import and the National Oil Office (Office National de l'Huile) for olive oil export and other oil imports. It also coordinates closely with the Ministry of Trade and Export Development for monopolies on imports like rice and sugar.

Locally, the MARHP operates via regional commissariats for agricultural development, which focus on resource preservation, agricultural technique dissemination, and production promotion. Agricultural extension and professional training for workers are managed overall by the Agency for Agricultural Extension and Training under the MARHP's supervision and in collaboration with the Ministry of Employment and Vocational Training.

Agricultural research is advanced through collaborative efforts between research institutions, higher education, and producers, facilitated by bodies like the Institution of Agricultural Research and Higher Education. The National Observatory of Agriculture, an independent information institution operating under the MARHP, provides crucial data and analysis to inform decision-making and strategic planning for stakeholders.

Finally, the MARHP directly supports the agricultural private sector through its supervision of the state's Agricultural Investment Promotion Agency, which promotes private investment in agriculture, fishing, and related services by facilitating international partnerships and offering incentives, project development assistance, and entrepreneurial training.

Thus, the Tunisian agricultural governance structure and the decision-making process are top-down and centralized around the MARHP. Initiatives, directives, and decisions are drawn up by the MARHP and its institutional instruments described above. Even though local commissions are consulted, questions about the level of engagement of local authorities and civil society remain.

Professional agricultural organizations, such as the SMSAs and GDAs, take part in the agricultural governance structure. The SMSAs are private cooperatives formed to provide essential farmer services, while the GDAs are key bodies in the collective management of resources and rural water access. While the SMSAs have a cooperative structure that does not exclude a commercial role, the law prevents the GDAs from carrying out commercial activities. However, the SMSAs are plagued by bureaucracy, sectoral over-dependence, and regional concentration, while also lacking members, being financially troubled, and having management deficiencies. The GDAs are also undermined by administrative limitations, lack of government support, indebtedness, and historical political manipulation, which are further worsened by corruption and technical expertise shortages.[7]

Within this centralized governance structure, farmers are mainly represented by a central and dominant union, the Tunisian Union of Agriculture and Fisheries (UTAP), which receives significant state funding and has the largest membership of any agriculture union. Rather than reflecting genuine member engagement, however, the UTAP's influence is partly attributed to its gatekeeping role in granting farmers access to state subsidies and loans.[8] In fact, to gain such access, Tunisian farmers must hold the professional title of "farmer", which is granted exclusively by the UTAP. According to the UTAP, its status as the sole representative body for the agricultural profession allows it to organize farmers and to leverage its strong bargaining power in decision-making circles to obtain benefits for farmers.[9] The UTAP strives to ensure farmers' rights, including access to inputs and land, fair sale prices, stable income, and improved profitability, especially for small-scale farmers.[10]

Yet the strength of this Tunisian farmers' union lies not only in its standard-setting role, but also in its leading role in policymaking. First, the UTAP provides an almost unique link between Tunisian farmers and key ministries, notably the ministries of agriculture, trade, and industry, all of which regularly consult it during policy formulation to ensure smoother implementation and farmer buy-in. In addition, the UTAP plays a monitoring role, relying on its regional branches for rapid and representative monitoring, and then relaying farmers' challenges to the MARHP and proposing solutions. Although the MARHP sometimes makes unilateral decisions that have a negative impact on farmers, the UTAP claims that it systematically strives, through communications and official interventions, to influence these impacts, ensuring that farmers' voices and needs are integrated into the political process and mitigating the negative effects of centralized decisions. Through its access to all decision-making circles, and regardless of its ability to propose policies, the UTAP faces no challenge to its monopoly. The emergence of the Tunisian Farmers' Union in 2012 was a move toward greater union pluralism, but failed to end the UTAP's monopoly.[11]

Despite the UTAP's strength, farmers' union action in Tunisia is hampered by the fragmentation of farmer groups, limited resources, and pluralistic – even divergent – interests.[12] In fact, according to the UTAP, the extent to which its proposals are integrated into state policy is directly correlated with the strength of its negotiating and persuasive efforts and the robustness of its supporting studies and arguments. However, its capacity to conduct such comprehensive efforts across all issues is limited by resource constraints.[13]

Tunisian activists and NGOs have also played an important role in the national agricultural governance structure since the revolution of 2011.[14] While an official count of organizations working on food sovereignty in Tunisia is unavailable, civil society engagement in this area can be broadly categorized. A core group of approximately five organizations explicitly defines food sovereignty as a central part of their mission; the Observatoire de la Souveraineté Alimentaire et de l'Environnement (Observatory of Food Sovereignty and the Environment, OSAE) is one notable example. Another group of 20 to 40 organizations operates with missions that significantly overlap with the principles of food sovereignty, focusing on areas such as sustainable agriculture, rural development, environmental protection, farmers' rights, and local food systems. Their contributions span from advocacy and awareness campaigns for sustainable practices, food sovereignty, and food security to grassroots community development interventions that empower marginalized farmers,

such as female farmworkers. They are also playing a vital role in advocating for sustainable agricultural approaches and conservation methods, and even supplementing state action by offering key services and information, particularly where state capital is limited. They are also becoming extremely influential in shaping agricultural policies, hence contributing to the social and solidarity economy as well as to community resilience.[15]

The Costs and Vulnerabilities of Tunisia's Agricultural Policies

From Fields to Foreign Markets: Liberalization's Broken Promise

Tunisian agricultural governance and policies are the result of an incremental political and historical trajectory that can be categorized into five stages.[16]

The first stage was characterized by nationalization policies and the resurgence of a national landed aristocracy in the early years of Tunisian independence (1956-1961). Focused on the "Tunisification" of agriculture, the newly formed post-independence government transferred land previously owned by colonizers to Tunisian farmers, creating a new landowning class. Land tenure systems like habous were reformed in favor of privatization, and Tunisia saw the rise of a landowning bourgeoisie alongside traditional agriculture.[17]

This period was followed by a state capitalism phase (1961-1969) that inaugurated the agricultural sector's role in national development. The state assumed its central role, and agriculture was used to generate surplus for state investment in economic development, aiming to industrialize and modernize. The government seized land from small-scale farmers to establish state-run cooperatives. By 1969, 700 cooperatives covered approximately 600,000 hectares. Small farmers, owning less than 5 hectares, contributed about one-third of this land, while the rest came from state-owned land. Large landowners were largely uninvolved. By converting small farmers into salaried workers and enforcing low prices for agricultural products at the production level, the state marginalized the cooperative farmers. This "forced cooperation" model led to rebellion and sabotage among producers, while the administrative class gained power and privileges; the model was eventually abandoned.[18]

A difficult decade followed for the agricultural sector (1970-1982) as Tunisia shifted toward a liberal economy. The focus on integrating into the international labor market through low wages was done at the agricultural sector's expense. Agriculture's primary role was to provide low-cost food for the new cheap labor force serving the global market. The "Green Revolution" model of industrialized agriculture was adopted to boost cereal production. Exploitation of land was heightened by the cultivation of commercial crops, like grapes (for wine) and citrus fruits, driven by market demand mainly in Europe. Monoculture became dominant, disregarding local ecological systems and cultural practices. Agriculture transitioned from a subsistence model to one for trade balance adjustment, with olive oil being at the forefront of exports, followed later by dates and citrus.

Immediately afterwards, the agricultural sector experienced a boom phase, albeit not for long (1982-1990). The state made significant investments in agriculture and rural areas, and agricultural product prices increased while input subsidies were maintained. Local development agencies were created, and integrated rural development programs were funded.

In late 1983, the Tunisian government, facing pressure from the International Monetary Fund (IMF), implemented the Structural Adjustment Program. A core part of this plan was to end government subsidies on basic foods. This policy was put into action on 29 December 1983, when the government stopped subsidizing wheat and semolina. As a direct result, the price of bread and other staples more than doubled, severely impacting poor Tunisians who relied on these items for a significant portion of their diet. Eventually, underinvestment and price policies led to farmer dissatisfaction and social unrest in the "bread riots" of 1984.

In the 1980s and 1990s, the World Trade Organization (from 1995), international financial institutions, and the Structural Adjustment Program advanced trade liberalization policies that negatively impacted the Tunisian agrifood system.[19]

Although liberal policies have sometimes alleviated shortages and boosted local production, significant limitations exist.[20] Evaluations of the Structural Adjustment Program's implementation show that the growth rate of agricultural production was slower than that of Tunisia's overall economy, indicating that the reforms did not necessarily improve agricultural performance.[21] Price policy reforms and subsidy reductions resulted in unfavorable pricing for most agricultural products. Even though nominal prices rose, real prices fell, reducing the farmers' income. Increased input costs because of the subsidy removal created deflationary price pressures, marginalizing small family farmers by limiting their access to resources, increasing their vulnerability to economic shocks, and reducing their overall competitiveness. These effects have reinforced unequal competition with developed countries and increased reliance on food importation.[22]

Tunisia's agricultural policies have also been shaped by corruption and favoritism. Under the rule of President Ben Ali, agricultural export monopolies and access to the most fertile lands were granted to regime loyalists. Intermediaries, large-scale farming enterprises, and corporations within the food system were strengthened at the expense of small-scale farms.[23] Water resources were overexploited, with deep wells drilled to supply large loyalist farms and the tourism and industry sectors.[24] The ongoing underrepresentation of farmers due to their limited political power and the UTAP's inability to influence the political sphere has meant that government price controls and subsidies (such as in the cereals sector) benefit consumers and millers disproportionately, while farmers get the lowest share of profits.[25]

The Food Security Trap

The concept of food security, as defined by the Food and Agriculture Organization of the United Nations (FAO) in 1996, emphasizes universal access to sufficient, healthy, and nutritious food. However, liberal interpretations reduce food security to a balance between supply and demand and a logic of comparative advantage that favors trade over self-sufficiency policies. International institutions promote import policies as more cost-effective and able to mitigate the risk of climate-induced shortages while criticizing self-sufficiency as economically inefficient.

Tunisia has implemented the trade-driven approach to food security. Policies have concentrated on boosting the economic well-being of larger landholders and allocating resources to new land development on the assumption that improvements in agricultural exports would provide sufficient income to import basic foodstuffs like wheat without causing a trade deficit. Hence, olive groves on the east coast became increasingly dense and concentrated in the hands of an increasingly small number of owners; vegetable and fruit gardens covered the inland regions and central steppes; and large-scale facilities dominated olive processing. The state has invested little in small farmers and almost nothing in sustainable or labor-intensive techniques.[26]

For countries like Tunisia, food security hinges on having sufficient foreign currency reserves to finance food imports. Yet Tunisia struggles to secure adequate foreign exchange given the volatility of global prices, the long-term deterioration of commodity terms of trade, and the state's limited access to financial markets due to political tensions. As a result, the government manages the population's diet solely from a balance-of-trade point of view, with the aim of reducing the food trade deficit. While this deficit did decrease in 2023, it was not a sign of a healthier economy or a natural recovery in the market, but rather a direct result of a government policy to significantly cut import volumes (–4.4% in 2022-2023 compared to +31.7% in 2021-2022).[27] This strategy of cutting imports of various essential food products to shrink the trade deficit and limit foreign-currency outflows has led to systemic shortages and price hikes for basic commodities in Tunisia. Shortages of basic food products – sugar, coffee, milk, and cereals – are becoming commonplace, with endless queues in front of stores and bakeries.

Another limitation of a food security framework is that the global food supply may not align with national dietary preferences and cultural identity. In Tunisia, the Mediterranean diet is being undermined, as the basic food products considered essential based on caloric density – such as bread, flour, pasta, sugar, milk, and seed oil – are subsidized at the expense of healthier alternatives, such as olive oil. Consumer habits have changed significantly, increasing chronic diseases associated with diet, which currently cause 60% of deaths. Obesity now affects half the population, cardiovascular diseases affect 28.7%, and diabetes 18%.[28]

Moreover, over-reliance on global markets has exposed the country to price and quantity volatility

and demonstrated that a food security framework is not resilient to adverse shocks. The 2007-2008 world food crisis revealed most clearly the cyclical vulnerabilities of the Tunisian agrifood system and its inability to guarantee strategic sectors such as cereals and dairy.[29] The situation continued to worsen, culminating in the 2010-2011 protests. Yet while the Tunisian revolution was sparked by social and economic protests in rural areas, the post-revolution debates from 2011 to 2019 focused on political and identity issues, neglecting agriculture and rural development. The agricultural world has been mostly forgotten during the transitional period; agricultural policy has maintained pre-revolution approaches and a focus on consumer protection.

Tunisia's agricultural system has continued to face severe challenges, especially with the COVID-19 pandemic and the Russia-Ukraine war.[30] The pandemic primarily affected food access – first through supply chain disturbances in 2020 and later through decreased purchasing power – while the war has affected both food availability and access since 2023. Heavily reliant on cereal imports from Russia and Ukraine, Tunisia had to ration its imports while facing inflation, particularly for food items, and managing the significant food trade deficit. The price of agricultural inputs greatly increased, with small farmers and fishers being most affected by rising production costs and declining incomes. These crises have underscored the vulnerabilities of being highly reliant on imports and of pursuing food security through volatile global trade.[31]

Given these complexities, the right to food for all citizens cannot be solely entrusted to market forces. Food security as a simple global supply-demand equilibrium is not a comprehensive approach that can tackle poverty and vulnerability.

Climate Stress on Agriculture

Climate change is a major threat to Tunisia's agricultural system. Tunisia is already experiencing a drier climate, with the average annual precipitation rate reduced by 3% over the last 30 years, exacerbating water scarcity. A reduction in crop yields is undermining access to food.[32] This trend of declining rainfall will continue, with climate models forecasting a further reduction of 10% to 20% this decade alone.[33]

Climate projections for different Tunisian regions demonstrate diverse trends. Areas such as Bizerte, Tabarka, Jendouba, and Kelibia are trending toward wetter climate conditions, while Thala is becoming drier. A fluctuating climate pattern is predicted in southern Tunisia, which is generally arid and now experiencing years of extreme drought, with the exceptions of Sfax and Tozeur. Studies show clear effects of drought on agricultural production, with significant statistical correlation between drought indices and the production of cereals such as wheat and barley, olive oil, and citrus fruits. Correlations were particularly strong during periods of moderate or intense drought and humidity, highlighting the high sensitivity of these crops to extreme climatic events.[34]

Projections paint a concerning picture of the future, with water scarcity anticipated to cause a further reduction in overall agricultural yields by 10% to 30% by 2050. Predictions also suggest that the increasing frequency and intensity of droughts will cause decreases of 40% in cereal production and 32% in olive production by 2050.[35] Tunisia has already felt the acute impact of water scarcity on agriculture in the drought of 2023, when the wheat harvest represented only a fraction of the typical annual yield, forcing the country to import 95% of its wheat needs.[36]

Climate emergencies occur in already complex situations. The agricultural sector, particularly in the semiarid and arid parts of the country, is shaped by the complex interaction between water and land management policies. Tunisian policies initially attempted to prioritize large-scale mobilization of water resources through infrastructure and collective land management. But economic liberalization and the imperative to address water scarcity have driven a shift to individualization, privatization, and decentralized resource control, leading to overexploitation and regulatory weaknesses in water management. Tunisia has already mobilized virtually all of its renewable and nonrenewable water resources, particularly groundwater. By prioritizing industrial crops for export for decades, agricultural policies have led to the intensification of crops requiring significant irrigation, thus placing a heavy burden on the country's limited water resources. In reality, by exporting these water-intensive products, Tunisia is exporting its increasingly scarce water resources at a time when it is struggling to meet its own needs for both consumption and food production.[37] This highlights the inherent contradiction between an agricultural strategy focused on exports and the

growing challenges presented by the climate crisis and water scarcity.

Similarly, in the management of land resources, land reform and privatization have transformed the diverse land property system – encompassing private, collective, state-owned, and religious endowment lands – in ways that further limit the state's capacity to effectively regulate water access, leading to informal practices and environmental degradation.[38]

Moreover, specific structural imbalances in Tunisia's governance framework impede effective climate action and the implementation of necessary adaptation efforts. These include the country's highly centralized governance structure, the lack of functional and properly resourced local government bodies, and inadequate involvement of stakeholders like municipalities and CSOs during policy cycles. Tunisia has formally adhered to international climate accords, included water rights in its constitution, established a sustainable development commission, and adopted an environmental legal framework, but without any practical application. National policymakers have not prioritized the development of a long-term plan to mitigate and adapt to the effects of climate change in recent years.[39]

The social discontent around this situation is already being expressed, as demonstrated by the number of protests over access to potable water – the most common type of protest in 2024 – and the rise of social movements specifically demanding a constitutional right to water.[40]

The Marginalization of Small-Scale Farmers

From a liberalization and food security perspective, large-scale farming is seen as more successful than small-scale farming. Large agricultural enterprises have the means to buy heavy machinery, pay for land and water, use new technologies, and develop capabilities for marketing. The privatization of state farms, cuts in farm subsidies, farm price liberalization, the reorganization of the farm credit system, and the gradual privatization of food marketing networks have empowered intermediaries and large-scale and corporate agricultural enterprises to the detriment of the family-farming sector and rain-fed agriculture.[41]

Millions of small-scale farmers struggle to survive amid unequal and fierce competition for agricultural resources with capitalist investors who have access to financing and markets.[42] Weak professional associations – like agricultural cooperatives that represent less than 7% of small-scale farmers[43] – further exacerbate this disparity. Moreover, small farmers have limited opportunities for additional off-farm income and restricted access to credit. Banks are reluctant to extend loans to small-scale farmers due to the absence of guarantees and the complexities of time-consuming banking procedures. Furthermore, the state withdrew its support for bank lending to small- and medium-scale farmers as part of structural adjustments. Microfinance institutions charge high interest rates, making them more of a problem than an alternative solution for small-scale farmers.[44] The transfer of government support, extension, and technical assistance programs to the private sector has left small-scale farmers without essential services, as they often cannot afford private agricultural advisers.[45]

Even when small farmers secure financial assistance or aid through collaborations between the Agricultural Investment Promotion Agency and donor organizations or international cooperation bodies, this support frequently falls short of addressing their actual needs. For instance, farmers might gain access to land and seeds but lack crucial water resources. Furthermore, significant administrative complexities consistently impede project implementation, often leaving small farmers burdened with debt and no tangible progress.[46] In addition, the direct investment grants and tax benefits managed by the Agricultural Investment Promotion Agency disproportionately favor large agricultural enterprises due to the intricate application processes and limitations on subsidy payments, effectively excluding many small- and medium-sized farms from accessing this support.[47] The implementation of value-added tax exemptions and suspensions on certain types of agricultural equipment also encounters practical difficulties and imposes high administrative costs on both farmers and the tax authorities.[48]

Furthermore, instead of lowering farmers' production costs, subsidizing agricultural inputs like fertilizers and machinery has primarily benefited distributors and importers. This has intensified since 2016, as subsidized inputs are often available only in limited quantities through official channels and subsequently sold at much higher prices on the

black market. Even critical inputs like animal feed are traded on the black market at nearly double the official prices.[49]

The shift in national policies from self-sufficiency to food security particularly affected small-scale farmers. Statistics on food crop prices between 2011 and 2023 indicate a generally rising trend, with some classes such as fruits and citrus reporting greater price fluctuations. In addition, the inflation-control strategy that prioritizes consumer prices over producer income has had detrimental effects on farmer livelihoods and agricultural development in recent years.[50] Stagnant agricultural prices and rising input costs have led to a decline in small farm profits. In addition, the increasing effects of climate change, such as more frequent and more intense droughts, disproportionately affect small farmers, who generally have fewer resources and less capacity to implement adaptation strategies.[51]

The Rise in Rural Poverty

National strategies have historically used the agricultural sector to boost other economic sectors and prioritized providing urban areas with essential food and resources like water and land, often to the detriment of rural communities.[52] Between 2015 and 2021, poverty increased significantly in rural-agrarian regions, such as in the northwest (a 22.5% increase) and the central west (a 37% increase). The overall rural poverty rate decreased slightly from 26% in 2015 to 24.8% in 2021, but was still significantly higher than the 12.7% poverty rate in urban areas.[53] These figures are also influenced by internal migration: poverty in rural areas can be transferred to urban areas when rural inhabitants migrate in search of employment.

Farmers and agricultural workers specifically have high poverty rates: 22.8% and 31.9%, respectively. Farmers comprised only 6% of the total population in 2021, but over 9% of impoverished Tunisians; agricultural workers constituted 2.4% of the population but about 5% of impoverished Tunisians.[54]

Competition from both large-scale domestic farms – which often benefit from economies of scale and potentially preferential access to resources – and imported agricultural products that may be cheaper due to different production costs or subsidies in other countries has weakened rural communities over the years. At the household level, processes of restructuring have brought about important shifts in farm production patterns, as well as in the work strategies of family members. The social reproduction of small-scale farmers has been challenged by having to produce export crops instead of planting cereals or raising traditional livestock. In addition, the liberalization and privatization of the agricultural sector have cost small-scale farmers their land: men are forced to migrate to find work in large urban areas while women and children remain to work as seasonal laborers, mostly in the olive sector on large-scale farms.[55]

In addition, climate change particularly impacts rural areas. Agricultural systems in semiarid Tunisia face significant threats as a vast majority (80%) of the farms surveyed in a recent study showed very low resilience to climate impacts.[56] The decline in agricultural productivity, as a consequence of climate change and the resulting water scarcity, increases unemployment in rural areas, where many depend on agriculture as their main source of income.[57] The reduction in farm income erodes the purchasing power of rural households, which in turn negatively affects local businesses and services, resulting in a downward economic spiral and increasing rural poverty in regions that are often already economically vulnerable. The climate crisis will also act as a multiplier of existing socioeconomic vulnerabilities, particularly in rural zones where access to diversified economic sources of revenue and essential services such as healthcare and education is often limited.

Recommendations

Defining Food Sovereignty for the Tunisian Context

Food sovereignty is in direct opposition to market-dependent food security. It defends people's right to define their own food and agricultural systems. LVC's definition of food sovereignty places producers and consumers at the heart of food systems, prioritizing healthy and culturally appropriate food produced in sustainable and environmentally sound ways, free from the dictates of global markets and transnational corporations. This framework is essentially a resistance strategy aimed at dismantling the current corporate trade regime and shifting farming systems toward local determination.

For some researchers and activists, food sovereignty means radical democracy in how we produce and

consume food: the producers and consumers should collectively decide the goals of food production.[58] This requires ensuring that decision-makers possess practical knowledge and expertise and that power structures are balanced to protect everyone's interests. Through this framework, achieving food sovereignty in Tunisia means addressing the fundamental issue of who controls the means of production, and placing ownership and decision-making power directly in the hands of the producers.[59]

For other actors in the agrifood sector, however, food sovereignty is confused with notions of food self-sufficiency, obscuring its distinct principles.[60] Food self-sufficiency can be a component or a desirable outcome of food sovereignty, but it does not equate to it. In fact, a country might achieve self-sufficiency in a particular crop, but if that production relies on exploiting resources, marginalizing small-scale farmers, or is dictated by global market forces, it would not be considered sovereign. Food sovereignty offers a more comprehensive and holistic vision for food systems that are not only productive but also just, equitable, resilient, and environmentally sound.

The confusion in defining food sovereignty can be explained by the broadness of its LVC definition, which was intended to allow for national and contextual flexibility. In fact, the broad definition of food sovereignty has led to a spectrum of interpretations, especially among Tunisian activists and CSOs, potentially hindering coherence and even preventing collaboration among advocacy groups.[61] Some call for disengagement and a rupture from the global food trade; others focus on reforming existing food systems to be more equitable, rather than seeking a radical transformation. As a result, the specific policies and alternatives proposed for moving away from the current system are strongly influenced by the activists' views on whether or not it is necessary to cut ties with capitalism and neoliberalism.[62]

Moreover, discussions surrounding food sovereignty often remain concentrated within urban intellectual circles, with limited engagement from small-scale farmers and impoverished rural citizens who form its theoretical bedrock.[63] This disconnect arises because the activists' macro-level focus on dismantling the food security framework, while valid, often fails to address the immediate, pressing concerns of small-scale farmers on the ground.[64] Most discussions about food sovereignty have sidelined the crucial topic of rural and agricultural development and agricultural modernization, particularly the role of rural households as both producers and consumers of food. This oversight has led to the complete neglect of critical issues facing farmers with less than 5 hectares of land, many of whom struggle to feed themselves. Specifically, social differentiation and inequity, gendered labor divisions, the significant role of women as heads of households, and the unique challenges women face have been entirely ignored.[65]

Progressing toward a common definition and vision of food sovereignty in Tunisia will necessitate a more inclusive approach with efforts to better reach small-scale farmers and agricultural workers who are central to this concept.

Recommendations: To effectively advance food sovereignty, Tunisian NGOs, activists, researchers, and unions must focus on including small-scale farmers

“To effectively advance food sovereignty, Tunisian NGOs, activists, researchers, and unions must focus on including small-scale farmers and making the agrarian question a central part of their advocacy.”

and making the agrarian question a central part of their advocacy. This can be achieved through three key strategies:

- Directly engage small-scale farmers: All food sovereignty discussions and initiatives must actively involve farmers. By addressing farmers' immediate challenges – such as access to resources, fair prices, and their ability to feed their families – food sovereignty advocates can build trust and ensure that proposed policies are practical and relevant. This engagement creates a two-way learning process that benefits both farmers and the advocacy groups.
- Develop a shared vision: Instead of relying on a broad, abstract definition, food sovereignty advocates must work with farmers to create a common, locally grounded understanding of food sovereignty. To be as relevant and inclusive as possible, this shared vision should integrate social and gender inequities.
- Integrate the agrarian question: Advocacy efforts must place core issues of rural life at the forefront. This includes prioritizing discussions on land ownership, rural development, and agricultural modernization. By focusing on practical topics like improving infrastructure, modernizing farming techniques, and supporting farmers as both producers and consumers, advocates can create a more comprehensive and impactful strategy.

Defining Small-Scale Farmers

The divergence between different actors also includes who is going to achieve food sovereignty. The basic definition of food sovereignty involves the "small-scale farmer" as a fundamental player, yet none of the interviewed researchers and activists working on agricultural issues in Tunisia, nor the farmers' unions and farmers themselves, agree on who the small-scale farmers are.

For the farmers' unions, the analytical utility of "small-scale farmer" as a distinct category is limited. They consider that delineating this category with a land ownership threshold of less than 5 hectares is not useful for understanding many agricultural sectors, particularly cereal growing, where small farmers never own less than 5 hectares because such plots are economically unviable.[66] Unions also note that the minimum land needed also varies significantly across Tunisia's diverse agroclimatic zones. For instance, a small-scale farmer might operate on 2 to 3 hectares of irrigated land in regions like Gabès but would require a larger plot if farming in rain-fed areas such as Sidi Bouzid. Similarly, plot sizes can differ for fruit and vegetable production in places like El Kef or Siliana, especially if the land is not irrigated or only lightly irrigated.[67] In addition, farmers' unions are generally opposed to the division of farmers into small- and large-scale farmers; they argue for combating the negative perceptions of large-scale agricultural investors within the Tunisian agri-food system, as they consider these entities essential to the sector's economic sustainability.[68]

"Instead of relying on a broad, abstract definition, food sovereignty advocates must work with farmers to create a common, locally grounded understanding of food sovereignty."

Beyond the unions' role in unifying all farmers, there is unanimous agreement among them that small-scale farmers should be identified not according to land size but by their ability to access the market and means of production. Small-scale farmers, in this view, are those who produce either entirely for subsistence or mainly for local markets, with limited marketing capacity. This category includes subsistence farmers as well as those who manage relatively large market garden plots and who derive at least a significant part of their income (or its equivalent in production value) from their farms. This definition excludes larger-scale agricultural producers or investors.[69]

Recommendations:

- Establish a clear definition: Efforts must be made to establish a clear, shared understanding of who constitutes a "small-scale farmer". Arriving at a unified and contextually relevant definition is not just an academic exercise; it is a prerequisite for achieving food sovereignty because it ensures that advocacy efforts and policies are effectively targeted. The lack of a unified definition complicates efforts to understand the role of small-scale agriculture in the rural economy and hinders collaborative action. Without this clarity, advocacy efforts may fail to reach the communities most critical to achieving a truly sovereign and equitable food system.

- Consider market access instead of land size: Instead of being solely based on farm size, a more comprehensive definition should consider a farmer's access to land, markets, credit, and other essential resources. By focusing on these factors, advocates can identify and support the most vulnerable producers who are the backbone of food sovereignty.

Agroecology as a Practical Pillar for Food Sovereignty

Agroecological practices, such as no-till farming, crop rotation, organic fertilization, and biodiversity conservation, are not merely technical adjustments; they represent a profound break from the pursuit of short-term yields and reliance on chemical inputs – which have historically undermined soil fertility and biodiversity – and embody a holistic approach that redefines the relationship between individuals, the land, and food.[70] Agroecology empowers farmers, especially small-scale farmers, by restoring their control over land, seeds, and resources; reducing their economic dependence; minimizing external input needs; and strengthening direct producer-consumer ties.

The primary objective of agroecology is not capitalist accumulation through short-term, destructive, and extractive management of the land, but rather working with the ecosystem while respecting all living organisms. The aim is to feed consumers in the present, while also guaranteeing future production through preserving soil fertility and biodiversity. This transformation shifts farmers from mere raw material producers to purveyors of "food" with deep social, cultural, and health implications. Consumers also evolve into active citizens valuing shared heritage and well-being.[71] Hence, agroecology is inherently an act of resistance against industrial monocultures and profit-driven agriculture.

Small-scale farmers in North Africa are interested in agroecology as a set of farming practices, partly because they have proved effective as survival strategies to overcome difficult environmental and economic conditions.[72] To date, however, agroecology is still considered a marginal practice in Tunisia. Even though farmers increasingly recognize the need for ecological transition and possess the knowledge to achieve it, they often lack the necessary resources to transition from classical farming to agroecological farming. They also lack the political leverage to obtain support from the MARHP, which is currently only conceiving solutions at the national scale without considering the local level.[73] Hence, it is crucial that food sovereignty activists support agroecologists in developing farming solutions at the community level and advocate for agroecology as a pillar to reach food sovereignty at the national level.

Recommendations: Several key interventions are vital for fostering a successful and equitable agricultural transition:

Valorize the social and solidarity economy: Support and integrate the principles of the social and solidarity economy into agricultural policy. This involves promoting cooperative models and local initiatives that prioritize community well-being over profit.

- Shift state subsidies to promote agroecology: Advocate for a fundamental change in government subsidy programs. By reorienting government subsidies from conventional farming to agroecology, the state can incentivize

sustainable practices like using natural fertilizers and preserving local seeds. This approach would specifically benefit small-scale farmers who are often at the forefront of these methods but lack resources. It would also fund research and training to help farmers transition, ultimately promoting an ecological, equitable, and accessible food system for everyone.

- Support consumers: Instead of subsidizing large-scale production, subsidies should be redirected to support consumption, making healthy and sustainable food more accessible and affordable for all citizens.

Advocating for a Food Sovereignty Alliance

There is a growing conviction among activists and CSOs involved in the Tunisian agrifood system that change will not emerge from government directives, but from farmers collectively developing their own advocacy systems and organizational structures, thereby enhancing their political visibility and their presence in both local and broader markets.[74] Given the extensive marginalization of small-scale farmers, who are central to the concept of food sovereignty, the feasibility of this model in Tunisia becomes conditional on the mobilization of small-scale farmers and broader segments of society.[75]

A primary challenge lies with small-scale farmers themselves, who must self-organize effectively to establish a favorable power dynamic. Currently, farmer mobilization is rare and mainly targeted at specific issues like water or market access, without a broader vision to strengthen their visibility. Small-scale farmers are the least represented in the farmers' unions and the most disadvantaged by the heterogeneity of agricultural interests as they lack adequate representation. As a result, the power dynamic between agricultural actors appears increasingly inequitable.[76] Small-scale farmers lack bargaining power, are excluded from decision-making, and also do not benefit from UTAP-sponsored access to state subsidies and loans.[77] In fact, although the UTAP claims to defend the interests of small farmers as a key objective of its union-led efforts, no specific mechanism is implemented to guarantee the direct representation of small-scale farmers, while such mechanisms do exist for other groups, such as women.[78]

According to unionists from the UTAP and the Tunisian Farmers' Union, farmers, and especially small-scale farmers, do not "fully understand"[79] how a union works. They argue that for some farmers, union membership is only a way to gain access to government assistance, subsidies, and sometimes even social activities.[80] Other farmers criticize the UTAP's bargaining tools, which prioritize dialogue and phased negotiation and avoid immediate radical pressure tactics like street protests. Some farmers even prefer to advocate independently, weakening the UTAP's bargaining power.[81] In addition, the UTAP must contend with the MARHP's broader national vision, which may prioritize other sectors; this constrains the union from advocating for certain policies, which in turn creates farmer distrust in the UTAP if their demands are not met. From their perspective, some farmers, mainly small farmers, perceive both the UTAP and the Tunisian Farmers' Union as complicit in approving policies that favor large investors and a burgeoning agroindustrial sector and as biased toward wealthy investors. This explains their reluctance to become actively involved in the unions.

Cohesive, solidarity-based networks capable of defending rural interests against broader pressures – such as urbanization, free trade, and imposed policies – are notably absent.[82] CSOs working with small-scale farmers are making efforts to integrate them into CSO networks and foster a robust civic space, but these are still very sparse. Nevertheless, through collaborative knowledge production with rural workers, diverse media initiatives, and gatherings and events, CSOs strive to popularize complex concepts like food sovereignty and raise awareness about farmers' challenges.[83] To better amplify farmers' voices, CSOs are strategically forming broader collaborations with farmer groups. By encouraging farmers to organize into structured entities like unions or political parties, CSOs aim to strengthen the farmers' collective influence and political power.[84]

In addition, establishing alliances across the Arab region is essential. Many countries in the Arab world face similar issues, such as water scarcity, desertification, and the impacts of neoliberal trade policies. A regional alliance could develop shared solutions and advocate for policies that address these common problems. In addition, conflicts and political instability are devastating local food production and supply chains in Palestine, southern Lebanon, and Syria. By building strong alliances, Arab food sovereignty movements could create a system of

mutual support and solidarity, ensuring that farmers in crisis can rely on their neighbors for food and resources. Even in peacetime, strategic collaboration is essential to build a resilient regional food system.

Currently, national farmers' unions and farmers' movements in Tunisia are poorly represented in the international sphere, as are Arab groups generally. For example, in 2013 LVC had just one member in the entire Middle East and North Africa (MENA) region: Palestine's Union of Agricultural Work Committees; in 2017, Morocco's National Federation of the Agricultural Sector (FNSA) and Tunisia's One Million Rural Women joined.[85] This LVC MENA delegation consistently highlights the impact of imperialism and capitalism on land rights and national self-determination, arguing that agricultural development and sovereignty have to be pursued simultaneously and cannot be achieved in the face of perpetual external aggression and externally imposed economic arrangements that erode indigenous management and serve foreign interests above national imperatives.[86] This positioning emerges from a North African and Arab history marked by denied sovereignty, anchored in the overlap between agrarian and national interests.[87] However, this reality is not reflected in the current rural social movements in Tunisia. Despite their macro-level importance for securing agricultural workers' and farmers' rights, the movements are not making clear connections to the national rural context, and national organizations do not directly refer to the LVC MENA delegation.[88]

Food sovereignty activists should consider the numerous agroecological initiatives that highlight the transformative effort necessary for food sovereignty as vital strategic allies. Efforts like the preservation of indigenous seeds by the Tunisian Association of Permaculture and the National Gene Bank of Tunisia, the Our Seeds, Our Roots association in Lebanon, and the al-Barakeh Wheat initiative in Jordan demonstrate a collective reclaiming of traditional knowledge and local control over food systems. Other regional initiatives, including Tunisian and Lebanese networks of agroecology, the Siyada Network, and the Arab Network for Food Sovereignty, are vital for promoting food sovereignty and agroecology, facilitating knowledge exchange, and advocating for regional solidarity.

Recommendations: In order to build a robust and farmer-led food sovereignty alliance, actors must:

- Promote grassroots mobilization: CSOs and advocates should support small-scale farmers in moving beyond single-issue protests (e.g., water access) to form more structured, permanent organizations that can help develop a unified vision and enhance their visibility. This support can take the form of advocating for specific mechanisms within unions to guarantee the direct representation of small-scale farmers, thereby ensuring their interests are better represented and not overshadowed by those of large-scale producers.

- Build cohesive networks and regional alliances: Address the absence of cohesive, solidarity-based networks by actively integrating small-scale farmers into existing networks, and build and strengthen alliances across the Arab world to increase the international visibility and influence of farmer movements. By collaborating, regional groups can share solutions to common problems like water scarcity and neoliberal policies and provide mutual support during times of conflict. This will enable them to build a more resilient, collaborative regional food system.

- Connect local struggles to global narratives: Ensure that the macro-level political arguments of international movements like LVC are clearly connected to the daily struggles of Tunisian farmers. This will make complex concepts like food sovereignty relevant and tangible at the national and local levels.

- Recognize and integrate agroecological initiatives: Food sovereignty advocates should view local agroecological projects not as isolated efforts, but as vital strategic allies in the movement. By actively supporting initiatives such as the preservation of indigenous seeds and collaborating with agroecology and food sovereignty networks, advocates can promote a collective reclaiming of traditional knowledge and local control.

In conclusion, food sovereignty, supported by agroecology, offers a robust framework to address the dual crises of climate change and global market dependency. By empowering local communities, fostering sustainable practices, and prioritizing self-determination over market dictates, this approach provides a coherent and actionable path toward resilient, equitable, and environmentally sound food systems. Realizing this vision in contexts like Tunisia requires overcoming internal

divergences, fostering broader societal engagement, and strategically integrating regional and international advocacy with local small-scale farmers and grassroots agroecological implementation.

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* This study was first published on 9 October 2025, available at https://www.arab-reform.net/publication/food-sovereignty-and-the-just-transition-in-tunisia/

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APN's Green Caravan Programme in Jordan, planting efforts alongside Jordanian farmers in the Dhlail area of Zarqa Governorate, 2022. © APN.

Jordan

Food Sovereignty and Water Governance in Jordan

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Introduction

Purpose and Scope

With 53% of households vulnerable to food insecurity, Jordan's "National Food Security Strategy, 2021-2030" report lists as exacerbating factors the "influx of Syrian refugees, decreased remittances from Jordanians working abroad, diminishing support to [the UN Relief and Works Agency for Palestine Refugees in the Near East], and lately, the outbreak of COVID-19".[1] These externally mediated crises should be viewed not as isolated shocks but as revealing the structural vulnerabilities of a food system that urgently requires reorientation toward food sovereignty.

Such reorientation must begin with centering the caretakers of the land. Despite being the lifeline of Jordan's domestic food system, small farmers have only a few lifelines extended to them in terms of agricultural support, tenure rights, and social protections. At the same time, large-scale farms that could harness economies of scale for domestic food needs remain largely export driven. Jordan now imports over 95% of its food needs for wheat and barley and 100% of its needs for sugar[2] – staple crops that once constituted important domestic industries[3]. It is therefore imperative to analyze the historical and political processes that have dislocated Jordan's food system from the needs of its producers and consumers.

As of 2023, Jordan cultivated only 58% of classified arable land (2.09 million dunums – a unit of land measure equal to about 1,000m2) in a context where cultivated land has declined by a staggering 47% between 1983 and 2023.[4] This trend is particularly concerning given that only 4% of Jordan's land area is formally classified as arable.[5] However, there are questions about whether current land classifications and associated legislation reflect the country's true agricultural potential and whether they adequately address the urgent need to protect agricultural land. In northwestern Jordan alone, an estimated 123,000 dunums of rainfed agricultural land were lost to urban encroachment between 2000 and 2015.[6]

Jordan's agricultural potential is further undermined by the sweeping characterization of the country as "water poor" – a framing that overlooks agricultural traditions attuned to climatic stressors and the regional settler and extractive colonialism that exploits Jordan's water resources.

The expansionist vision of a "Greater Israel" does not spare the fertile lands and resources of the Jordan Valley, long a target of colonial agricultural enterprise.[7] Moreover, the advancing genocide, ecocide, and weaponization of food and environment in Gaza and historic Palestine as a whole has laid bare how famine can be engineered in contexts where entire populations are denied sovereignty over their food, land, and natural resources.

Building on the Arab Group for the Protection of Nature's (APN) research, advocacy, and on-the-ground interventions to support farmers in Jordan, this study traces the relationship between the aforementioned structural challenges and the emergent shocks that compound farmer vulnerability at different stages of the value chain. We focus on the lived realities of those who cultivate the land and the root causes that reproduce the conditions of their precarity and dispossession. We are particularly attentive to how fragmentation manifests across land systems, farmer-to-farmer relations, and accountability processes emanating from the commodification of land, production, and agricultural labor. In doing so, we avoid simplistic framings that homogenize farmers or romanticize smallholders or family farming without disentangling the capitalist

processes that fragment agricultural production and engineer class divisions away from collective organizing and production systems. To the best of our knowledge, this is the first study to systematically document the full cycle of agricultural production in Jordan, from inputs to markets, informed by a food sovereignty perspective.

In parallel, we map the policies, entities, and institutional arrangements that govern food and agriculture, interrogating how agricultural challenges are often addressed in ways that return farmers to a pre-crisis, survival state, absorbing the very shocks that structural injustices generate. Through consultations with diverse actors, often positioned in tension within the food system, we seek to establish areas of consensus on key challenges and recommendations presented in this study, creating a space and basis for dialogue that bridges fragmented perspectives.

Methodology

We devised a mixed-method participatory approach that centers local food producers, small-scale farmers, and agricultural workers across three workstreams:

Qualitative data collection

Qualitative data was gathered from 19 focus group discussions (FGDs) and 15 interviews with farmers and agricultural workers across Ghor al-Shamali, Ghor al-Wast, Ghor al-Jnoub (in the north, central, and southern Jordan Valley, respectively), Zarqaa, and Mafraq, along with key informants and experts in Amman. While the study primarily focuses on small producers, who are often overlooked in national consultations and strategy processes, we also conducted interviews with medium- and large-scale producers to contextualize recurring challenges and gaps impacting food producers irrespective of their scale. Feedback loops were introduced that engaged experts and key informants throughout the collection stage.

Iterative processes of synthesis and validation of field data through consultations

Two consultations were convened as part of an iterative process of validation and synthesis of key challenges, existing pathways, and responsible bodies within the food system. The first consultation engaged 73 small-scale farmers and agricultural workers across the Jordan Valley, combining open plenary discussions, working group discussions, and focused surveys. The second engaged over 100 actors, including key decision-makers and policymakers, public institutions and agencies, NGOs and civil society organizations (CSOs), unions and associations, institutions of knowledge production and dissemination, and the private sector. It also included 24 male and female small-scale farmers and workers, alongside large-scale farmers, brought together in a unique setting that allowed their perspectives to be heard in plenary and across all thematic working groups.

Parallel process of secondary research

The qualitative data and consultations were complemented by ongoing secondary research on conceptual and legal frameworks, structural drivers rooted in historical processes that materialize in contemporary policies and interventions, and strategies of food security and water governance.

The different workstreams were guided by eight key determinants of food sovereignty categorized in the three essential stages of agricultural production:

- Preparation: Access to and quality of land, water, and finance as a key prerequisite

for food production.

- Cultivation: Access to quality pesticides, fertilizers, and seeds as vital agricultural inputs; and examining the essential role of agricultural labor through a rights-based lens.

- Post-harvest: Equitable participation of small farmers in post-harvest processing, distribution, and market systems as a critical determinant of their ability to secure fair prices and sustain livelihoods.

To provide focused and manageable analysis within the fixed timeframe of the study, we selected the Jordan Valley for the farmer consultation. As Jordan's food basket, the region remains crucial to the realization of Jordanian food sovereignty, and its high concentration of farmers renders it a key site of analysis for understanding the structural challenges they face. The Jordan Valley has been the experimental grounds for agrarian reforms that have resulted in food system shifts. Its fertile alluvial soils and unique microclimate enabling year-round cultivation have been leveraged to increase production; however, its mineral wealth has increasingly brought agriculture into contention with resource extraction.[8]

To ensure our regional focus did not narrow analytical scope, the national-level consultation, additional targeted interviews, and secondary research helped address potential gaps.

Conceptual Foundations and Principles for Equitable Food and Water Governance

Food Sovereignty

The concept of food sovereignty must be situated within the highly politicized arena of food security governance, which defines food security as a state that "exists when all people, at all times, have physical and economic access to sufficient, safe and nutritious food that meets their dietary needs and food preferences for an active and healthy life."[9] This framing reduces food security to food availability and equates "access" to food with access to the market; food sovereignty, on the other hand, centers communities' access to and control over land, productive resources, inputs, and production decisions.[10]

The right to food – as recognized in the Universal Declaration of Human Rights and legally binding treaties that Jordan has signed and ratified, such as the International Covenant on Economic, Social, and Cultural Rights – suggests that food security should be approached systemically rather than as the right to a set caloric intake.[11] General Comment No. 12 on the right to food specifically links notions of "access" and "availability" with accessibility to land and natural resources, and outlines the entitlement to adequate reparation for those whose right has been violated.[12] In this way, the right to produce food must be operationalized within the framework of justice and self-determination not only as an aspiration, but also as a legally binding benchmark. By deploying a rights-based lens that treats food as a matter of sovereignty rather than as a commodity alone, systemic violations that undermine local agency, access to productive resources, and food cultures can be traced and redressed.

It is also important to address the Arab region's situated barriers to food sovereignty. As Ajl notes, the concept of food sovereignty, and the broader "agrarian question" as articulated in Latin American discourse around peasant and landless farmers, cannot be flatly extrapolated to the Arab region.[13] As such, this report teases out the condition of landlessness to reveal a "rootedness" and availability of land that have been systematically targeted through processes of colonial and military dispossession. Ajl rightly observes: "states have literally lost agricultural capacity and even populations" and that "war has been a central mechanism for such de-development".[14] This de-development sustains material dependency, thus pacifying grassroots resistance to conditions of dispossession.

Identifying the Farmer

The need to demystify the farmer was evident during our multi-actor consultation, where tensions surfaced around how the farmer is defined. Large landowning, industrial actors claimed to be the "real farmers", while small farmers raised their worn hands to affirm that they are the ones who steward the land. While we recognize the importance of varying scales of farming, our report avoids reducing farmers to a homogenous identity. Instead,

we need to understand how different farmer classes have emerged through negotiating a capitalist mode of production, thus manifesting differential access to land, agricultural inputs, capital, and decision-making capacities. We build on Lanzendorfer's farmer typology, adapted by Aydın, which broadly lays out the social relations of production manifest in Jordan's agricultural landscape.[15]

- Large farmers wield disproportionate capital and influence. While some large farmers produce for the local market and prioritize domestic food needs, many own large commercial farms that serve export production, treating agriculture chiefly as an investment and sustaining input-intensive production through a web of farm managers, middlemen, wage laborers, and tenants.

- Smallholders are mostly reliant on family labor to sustain production; they can differ in access to land and capital.

- Landless sharecroppers and tenants have emerged in the face of absentee landlordism. They navigate varying relationships with landlords concerning farm management, the division of harvest returns, production costs, and rent. As farm operators, they can both work for landowners and hire wage labor.

- Wage laborers are the most isolated from the means of production, forming a mobile labor force compelled to make high-stakes decisions to take on risky and underpaid work for household survival and advancement.[16] At the same time, this group is a key force in labor rights mobilization.

While this typology offers some conceptual precision to class relations among farmers, Zurayk and Dirar remind us not to treat such categories as fixed and deterministic, leading to misinformed interventions and the co-option of the farmer identity.[17] Rather, they point to the relations between categories, which we factor into this report to identify opportunities for alliances between farmers facing the same root causes, albeit from varied social positions.

Justice

The notion of just transition has recently entered food systems governance discourse to promote an inclusive shift to greener modes of food production. Yet ambiguity around what justice is being invoked and for whom raises questions about whose voices, interests, and needs are truly centered in this transition. Moreover, knowledge production around just transition policy frameworks has been concentrated in the global north, where the bulk of historical emissions have occurred, and countries resist substantial carbon mitigation, particularly in relation to their carbon-intensive military–industrial complex.

Despite the Paris Agreement stating that climate action must be pursued "in a manner that does not threaten food production" and "in the context of sustainable development and efforts to eradicate poverty", foreign-funded greening projects in the Arab region have prioritized nonproductive afforestation, leveraging trees and arable lands as carbon offset sites for the global north.[18] Similarly, climate change adaptation programs commonly center Western technologies, inputs, and expertise, subverting their intended purpose of building local efficiency and sustainability. Echoing De Bruin et al.'s call for conceptual precision in discussions of justice in food systems, this report engages with three interrelated dimensions of justice: distributive, procedural, and recognition.[19]

- Distributive justice concerns the fair allocation of the costs and benefits of transitioning food systems.[20]

- Procedural justice asks who is included or excluded from decision-making, how power is distributed, and how governance structures are made accountable.[21]

- Recognition justice interrogates who or what is conceived as a valid subject of justice, the temporality and spatiality of justice considerations, and the relations of accountability. This brings historical and intergenerational justice into the framework of food systems transformation.[22]

Flattening conceptions of justice in just transition frameworks can obscure the structural drivers of hunger, agricultural land loss, and ecological degradation, [23] often recast as emergent crises or isolated "shocks".

Additionally, often bundled within the just transition discourse is the language of resilience building. In this context, Soubry and Sherren caution against the simplistic invocation of "equilibrium resilience" as opposed to "evolutionary resilience" in food systems transitions.[24] They draw on Scott's typology in

which equilibrium resilience functions to maintain dominant systems of food production through honing their shock absorption capacities, whereas evolutionary resilience seeks systemic change.[25] In this context, APN has been working to decolonize resilience discourse in terms of redressing root causes, affirming that "building resilience must include policies and actions that not only assist communities in coping with or absorbing 'vulnerabilities' and 'crises', but act to resolve, resist, and prevent them and their manifestations from reoccurring".[26]

In sum, the depoliticized language of just transition tends to fixate on an abstract, sustainable future while bypassing historical, socio-economic, and ecological injustices that reverberate through food systems. Rather than centering justice on a simple caloric intake, we center it on the right to remain on the land, to return, to restore, and to resist.

Water as Foundational to Food Sovereignty

Access to safe water is the life-sustaining pillar of sovereign food systems, societies, ecologies, and futures. For this reason, it has long been politicized, commoditized, and weaponized as a geostrategic and economic lever. In the Arab region, water challenges have long been framed in terms of innate scarcity. For instance, a World Bank Group report describes Jordan as facing an "existential water crisis", being one of the "most water-scarce countries in the world".[27] Such language appears to locate the existential threat in the environment rather than in the mismanagement and transboundary weaponization of water resources. This deliberate misdiagnosis has equally been leveraged to restrict community agency and access.[28] Specifically, the colonial construct of Arab dryland and desert ecologies as barren and neglected has been functional to the disintegration of local food systems and dispossession of communities; it invalidates indigenous agricultural practices attuned to local hydrological cycles and diverts water toward ecologically destructive afforestation and monocultural production.[29] In Bilad al-Sham (the Levant), this brazenly converges in Zionist settler-colonialism that inherited British efforts to restructure and "rationalize" perceived under-utilized regional water flows.[30] From across historic Palestine to the Banias springs in the Golan Heights, and the Hasbani–Wazzani river and aquifer system in Lebanon, Jordan too contends with the occupation's hydro-hegemony, which undercuts, if not intentionally de-develops, its agricultural systems.[31]

To deflect from Israeli hydro-hegemony and preserve their market competitiveness, US and other external development actors have promoted import dependence.[32] Here, colonization and capital have found their ideological consolidation in the "virtual water" concept that emerged in the Arab region in the 1990s.[33] The concept holds that so-called "water-scarce" countries should import food rather than grow it, thereby importing the water embedded in those goods.[34] Paradoxically, the push toward trade-based food security in Jordan has promoted the overproduction of water-intensive cash crops, such as tomatoes. At the same time, structural adjustment programs (SAPs), under the counsel of Bretton Woods institutions, have entrenched the commodification of water through pricing mechanisms and water markets in the Arab region. The promotion of cost recovery models that heighten water tariffs effectively shift the cost of market restructuring to food producers and rural economies.[35] This was largely based on the ill-conceived external push to economize resource use for "profitable" export crops, alongside a broader agenda to re-allocate water away from perceived low-value agriculture toward so-called "higher value" non-agricultural uses.[36] Such models persist through differently packaged programs, such as integrated water resource management, that risk the same pattern of shifting responsibility to end-users, particularly farmers, rather than redressing infrastructural and central governance failures.[37] This shift has deepened hydro-social inequities and reshaped the valuation of water use and knowledge, increasingly framing water as a commodity and isolating farmers who resist or are unable to take part in export-oriented and cash crop production.

Participatory Governance

Since the first World Food Summit in 1996, grassroots and civil society participation has become a key thread of "good governance" in food security frameworks. Though touted as a platform for community ownership and accountability, critical scholarship highlights how uneven power relations determine the parameters of participation, or worse, leverage participation to absolve accountability.[38] While the shift from multilateralism to multistakeholderism in food-related forums has broadened the scope for civil society participation, it has also enabled corporate capture of food systems dialogue under the guise of broadening stakeholder participation.[39]

In response to the deepening corporate capture, CSO movements boycotted the 2021 World Food Summit and organized a counter-summit to challenge its legitimacy.[40] Within these international and intergovernmental spaces that influence global food systems governance, CSOs from the global south contend with entrenched asymmetries such as predetermined agendas that seek their tokenistic, end-stage engagement.[41] This dynamic is evident in the way some foreign-funded Arab CSOs adopted the slogan "Arabs Take the Lead" during COP18 in 2012, which ultimately serves global north interests in diverting attention from its responsibility to reduce emissions.[42]

To prevent participatory governance from becoming a tool for control, it must move from procedural and administrative engagement toward the coproduction of knowledge that would inform agricultural policy and programming.

Historical Context of Food and Water Governance in Jordan

Long before British cartographers carved out Transjordan's borders, the region was contoured by deeply layered and ecologically attuned forms of life and land relations. The world's oldest piece of bread, dating back 14,400 years, was found in the Black Desert of northeastern Jordan.[43] Some of the earliest evidence of cultivated wheat and barley (7,500-5,500 BCE) was found in Wadi Qalat of Tafilah.[44] Sugar was a flourishing industry that reached its peak during the Mamluk period (1250-1517 CE) with export markets that spanned as far as Florence, Italy.[45]

Jordan's complex food system was shaped and sustained by precolonial agrarian systems often organized around a communal ethic. This was seen in the musha' (collective landholding) tradition, whereby village lands were collectively managed to balance soil fertility, water access, and cultivation.[46] These agricultural arrangements also overlapped with customary pastoral systems governing access to and use of shared grazing lands. Indigenous water management innovations, from the Nabataean cisterns of Petra to the agricultural terraces of Jordan's highlands, have long attuned agricultural practices to their local climatic and geological conditions.[47]

The communality and diversity that marked Jordan's agricultural landscape were enclosed by successive powers. With the onset of Ottoman rule, the musha' tradition was brought into contact with a new land registration and codification scheme, including the classes of miri (state agricultural land), matruke (communal land), and mawat (dead state land) – primarily to facilitate administration and tax collection.[48] On the colonial premise that communal tenure was averse to agricultural modernization, the British mandate (1921-1946) dismantled musha' by enforcing the privatization, parcellation, and cadastral registration of land.[49] From 1927, the mandate sought to inscribe its conception of land ownership via large-scale cadastral surveys that charted precise boundaries between land claims and aimed to formalize individual ownership, while also forming the "Department of Lands".[50] With the Land Settlement Law in 1933, private title was imposed, yet Jordan's vast rangelands were often left in a legal vacuum or reclassified as mawat – a linguistic and legal marginalization of customary claims and agricultural potential that shapes contemporary land planning.[51]

To facilitate the shift from subsistence to capitalist production, the British mandate sought "improved" seed varieties, applied customs exemptions to machinery imports, and established agricultural experimentation stations.[52]

In the face of broader colonial reforms, resistance among local communities took diverse forms including through the rejection of land taxes, targeting colonial infrastructure, and the felling and use of trees in state forest land that had been barred from productive use by the British mandate.[53]

The 1948 Nakba, marked by the ethnic cleansing of over 750,000 Palestinians and the violent establishment of the Israeli settler-colonial state, reshaped Jordan's agrarian and demographic landscape. The inauguration of the National Water Carrier of Israel in 1964, which usurps vast amounts of water from the Sea of Galilee (Buhairat Tabariyyah in Arabic) and develops a hydro-hegemonic infrastructure that captures upstream flow, initiated the large-scale and ongoing monopolization of cross-border water resources.[54]

The construction of the East Ghor Canal which began in 1959 – primarily funded by USAID – catalyzed a shift in agriculture in the Jordan Valley. By expanding the irrigated area, the canal unlocked

new terrain for export-oriented and commercial-scale agriculture. As part of a series of related land reforms, external actors such as USAID and the International Bank for Reconstruction and Development pushed to reorganize large land plots into small plots, suited to the cultivation of vegetables as "a new cash crop". Cereal crop production diminished significantly as a result.[55] While one of the aims here was to encourage small-owner cash-crop cultivation, the state allowed landholders to register land under the names of family members. Together, this enabled the further dispersion of land ownership among family members – including members living outside the valley – rather than necessarily redistributing that land to smallholders for active cultivation.[56] Land fragmentation and absentee landlordism were cemented alongside wage labor, sharecropping, and tenancy-based production to maintain intensive cultivation.

The Jordan Valley development projects initiated in the 1950s further necessitated centrally managed water allocation, mechanized inputs, pesticides and fertilizers, and market integration mechanisms. Credit institutions were formed to meet the heightened need for liquidity. Yet prohibitive loan conditions meant large farmers were better positioned to capitalize on credit streams, forcing small farmers to turn to the private market to access informal credit.[57] Lenders thus deepened their foothold in Jordan's agrarian landscape.

Despite the unsustainable agricultural shift, Jordan's economic strategy nonetheless retained a focus on import substitution, strengthening local production, and shielding markets from foreign competition. As such, farming accounted for nearly 40% of Jordan's GDP in the 1950s compared with 6.9% today, a decrease largely caused by the sector's subsequent liberalization.[58]

From 1989 onward, World Bank and International Monetary Fund SAPs reshaped Jordan's agricultural landscape through destabilizing neoliberal policy reforms. Loan conditions pushed for the dismantling of Jordan's public agricultural supports and subsidies, lifting of pricing controls and import protections, privatization of agricultural inputs and credit support, and the enforcement of water tariffs to channel "efficient" water use toward export-oriented agriculture, alongside pressuring the reallocation of water resources to non-agriculture sectors.[59] Claiming market distortion, the World Bank further lobbied for the dissolution of a key state-led agricultural marketing body, initially established to support farmers including through improving producers' access to inputs and secure outlets for crop sales.[60] The reduction of state support coincided with the collapse of key export markets in Iraq and the Gulf following the 1991 Gulf War. Unable to leverage alternate trade networks, producers have borne the burden of surging input costs and exposure to global market volatility. Punishing cycles of debt and the confiscation of land upon default have forced many to abandon agriculture.[61]

Jordan's accession to the World Trade Organization in 2000 further consolidated and legally bound its commitments to trade liberalization, locking its food system into a profoundly asymmetric marketplace. Western and other major agricultural exporting states, often wielding heavily subsidized

"Farming accounted for nearly 40% of Jordan's GDP in the 1950s compared with 6.9% today, a decrease largely caused by the sector's subsequent liberalization."

agricultural sectors, inundated Jordan's market with cheap staple foods.[62] This accelerated the undermining of Jordan's wheat sector, as imported wheat could be sold at prices which undercut domestic production, including US wheat often under the diplomatic banner of "food aid".[63] Successive restructuring has slashed production from nearly 300,000 tons of wheat in 1964 to a mere 30,000 tons in 2022, supplying only around 3% of the Kingdom's wheat needs.[64] Such structural trade imbalances have ensnared Jordan in low-value and resource-intensive cash crop production, fixing its peripherality in the global food system.[65]

Moreover, structural adjustment lending deepened land commodification forged during British Mandate rule, advancing further marketisation. The 1994 Agricultural Sector Adjustment Loan conditioned finance on land-market deregulation in the Jordan Valley, specifically by extending private lease periods to up to 30 years, thereby loosening restrictions on land consolidation to facilitate larger-scale, export-oriented agricultural production.[66] Seeking to expand market-oriented development in urban areas, the 1996 Housing Finance and Urban Sector Reform Project pushed to increase the availability of smaller residential plots through zoning reforms, extend development rights to private developers, and streamline regulatory processes, although these reforms were contested by planning bodies in Jordan and only partially implemented.[67] Nonetheless, these measures represented external attempts to expand the role of private capital in the consolidation, division and allocation of land in Jordan.

At the same time, land has been increasingly subject to speculation and revalued as a commodity for its exchange value rather than its "agricultural productive potential".[68] The groundwork for the starkly uneven consolidation of land was thus laid. As of 2017, 77% of landowners held less than 9.7% of privately owned agricultural land, while just 0.5% – the largest landowners – owned 41.6%.[69] With urban encroachment shifting land values, farmland has been subdivided and sold for residential and commercial development, fragmenting productive units. Legislation has compounded fragmentation, including Temporary Law No. 79 (1966) allowing the subdivision of land to a minimum of ten dunums in regulated areas, and Land Use Bylaw No. 6 (2007) permitting construction on agricultural land.[70] These factors are collectively reflected in the loss of an estimated 1,690,000 dunums of agricultural land to urban centers, cities, and villages.[71]

The COVID-19 pandemic brought the food system's structural vulnerabilities to light, prompting the government's development of the National Food Security Strategy, which largely excluded relevant and active CSOs and small-scale producers from genuine participation. Several strategies have been released since, mediated by intergovernmental organizations, where engagement remains tokenistic, such as the National Plan for Sustainable Agriculture.[72] A constant across these strategies is the establishment of Jordan as a regional food hub, consolidating Jordan as a center for storage, logistics, processing, knowledge transfer, and investment. While export-oriented agribusiness continues to be prioritized, few avenues seek to redress the isolation of small producers and the stark reliance on imports.

In presenting our findings on the key determinants of food sovereignty and water governance, we reveal how these structural contradictions manifest in Jordan's food system.

Assessing Food Sovereignty in Jordan Through the Full Agricultural Cycle

Preparation Stage

Finance

Access to finance is the first component of a farmer's journey to productive land use. Adequate and affordable financing enables farmers to invest in agricultural inputs, infrastructure, and labor, ensuring production continuity. However, rising input costs and declining crop revenues have forced many farmers to seek loans through different mechanisms, exposing them to repeating cycles of debt that in turn make them ineligible for funding. For example, in 2023 over 13,000 farmers in the Jordan Valley were in debt and risked facing legal action due to possible defaults.[73]

Farmers can access finance through commercial banks, ministerial programs, the Agricultural Credit Corporation (ACC), input suppliers, and private financiers. Commercial banks provide loans at high and often variable interest rates, driven by neoliberal

policies tied to the World Bank and International Monetary Fund SAPs.[74] These loans carry a significant risk of default, which can result in the bank pursuing legal action to seize the farmer's land as allowed in Article 28 of the Jordanian Execution Law No. 25 of 2007 (amended in 2025).[75] This law sets a minimum level of protection by prohibiting the seizure of land necessary to secure the livelihood of the farmer and their family, but it does not clearly define the necessary elements for assessing such livelihood. Moreover, while the 2025 amendments to the law prohibit debtor imprisonment, farmers and traders observed that debtors' risks have increased; they have reduced credit opportunities, limiting farmers' access to financing from public and private creditors.[76]

Ministries and government programs offer interest-free loans, often in partnership with private banks, particularly for water and land-related projects under the National Food Security Strategy.[77] Farmers may also receive in-kind support such as pesticides or solar panel assistance through projects such as those implemented by the UN's Food and Agriculture Organization.[78] However, a crucial challenge lies in the lack of clarity surrounding eligibility and selection criteria; farmers report that they are uncertain whether they qualify and often assume that they do not. This reflects a clear gap in how grant opportunities are communicated and a lack of flexibility when deadlines are missed.

Importantly, land ownership is typically required as collateral for some substantial credit facilities, minimizing access to farmers who lease land and have informal tenure relations. The ACC, however, provides zero- or low-interest loans with flexible terms accessible to farmers who own or rent land that meet eligibility criteria.[79] For example, in 2019 the ACC disbursed a total of 27 million Jordanian dinars (about US$38 million) in loans to 3,300 farmers on the condition that they own or lease land.[80] In another case, through a project implemented by an international NGO, small-scale farmers who owned or rented land could access zero-interest loans from the ACC. To qualify, farmers were required to participate in the project's farmer field schools (FFS) focused on good agricultural practices, and the loans had to be used to purchase irrigation equipment and adopt new agricultural technologies.[81]

However, some loans provided by credit facilities, such as those for water infrastructure, are priced higher than what smallholder farmers typically need. This pricing disparity can lead to inefficient use of funds: farmers may redirect the loan toward other pressing expenses, increasing the likelihood of default. Budgets and criteria are set centrally in Amman, with limited room for regional adaptation and local feedback mechanisms.

In the absence of sufficient public financing or grants, farmers often resort to borrowing from private financiers – such as traders in the Amman Central Market, plant nurseries, and agricultural companies – and issuing postdated checks in exchange for capital. These arrangements leave farmers vulnerable to fluctuating prices and production losses caused by political and economic instability, inadequate infrastructure, and climate shocks. High transportation costs sometimes exceed profits, forcing farmers to abandon harvests rather than sell at a loss. Amman Central Market operators do not charge interest: they profit from reselling farmers' produce and bear no risk in the event of crop failure. Nonrepayment of these debts can lead to legal action that may force farmers to sell their land or even put their homes up as collateral, as they often have no other assets with which to secure loans.

These financing systems face structural challenges that limit their effectiveness:

- Rising input costs combined with low returns from selling crops contribute to debt accumulation and liquidity shortages, leaving farmers unable to cover production costs or cultivate their land.
- Agricultural loans and informal financing agreements transfer most of the risk onto the farmer.
- Farmers report a lack of diversity and awareness of financing options, in part due to the absence of a comprehensive, reliable database of available financiers and tools. As a result, many farmers are either unaware of their eligibility or do not know how to apply to interest-free loan programs. Weak institutional capacity within farmers' associations further limits their ability to prepare project proposals for funding.
- Coordination failures among government bodies, credit institutions, and CSOs exacerbate the structural challenges, resulting in duplication of support or loans for crops that cannot be irrigated due to water shortages.
- Power dynamics remain skewed toward private

financiers and centralized institutions, leaving small-scale producers with little bargaining power and minimal involvement in identifying financing priorities.

- Lack of follow-up and accountability after loans are disbursed, combined with the absence of transparency on default rates or their root causes, further undermine confidence in the system.

Limited risk mitigation tools further compound these challenges. Governmental steps are underway through the newly issued Agricultural Risk Mitigation Fund Law (2025), which restructures the former Agricultural Risk Management Fund (2009) to rebuild confidence among farmers and investors, yet challenges persist.[82] The current amendments revise the membership structure and eligibility criteria, but the scope remains largely focused on climate-related risks, excluding other hazards such as fires (whether arson-related or natural). To access compensation, farmers must submit a claim through the Ministry of Agriculture's local governorate office. However, most farmers interviewed could only speculate about how to access the fund or what it covers; they were unaware of how to submit a claim. Although the 2025 amendments introduce broader coverage beyond frost damage, specialized technical committees to oversee assessment and disbursement, and higher compensation rates, including partial coverage for unregistered small-scale producers, their effectiveness in addressing farmers' needs and awareness gaps is yet to be assessed.

Land

Access to land, a central pillar of food sovereignty, is shaped by a complex and often conflicting system in Jordan. Questions remain around how much land is currently cultivated, how much is arable but unused, and what areas could be reclaimed for production. While only 4% of the Kingdom's total area (fewer than 4 million dunums) is officially classified as arable, the former Minister of Agriculture reported in 2020 that 25 million dunums were suitable for production.[83] This stark discrepancy raises questions around whether official land classifications capture Jordan's agricultural potential, and what structural factors thwart cultivation. Accordingly, inadequate planning and cross-sectoral competition for land place producers in competition with capital, undercutting food sovereignty.

The protection of agricultural land as a national priority remains tenuous. The Law of Planning of Cities, Towns, Villages, and Buildings No. 79 of 1966 and Land Use Regulation No. 6 of 2007 largely centralize decision-making power among the Higher Planning Council. This body can recommend the reclassification of agricultural land, with the MOA limited to observer status despite the presence of other ministries with voting rights, and without representation from farmers and agricultural workers.[84] Fragmented governance among urban planning

"Access to land, a central pillar of food sovereignty, is shaped by a complex and often conflicting system in Jordan. Questions remain around how much land is currently cultivated, how much is arable but unused, and what areas could be reclaimed for production."

institutions – including the Higher Planning Council, regional councils, and the Jordan Valley Authority (JVA) – further undermines coordinated protection of arable land, leaving it vulnerable to conversion into nonagricultural uses.[85] This is reflected in the loss of around 47% of Jordan's arable agricultural land between 1997 and 2017, as well as 233,000 dunums lost to urbanization that are located in prime agricultural zones that receive over 350mm of rain annually.[86]

The pressure to intensify production on a shrinking land base exacerbates degradation: 41% of Jordan's land shows reduced productivity.[87] Responsibility for this is often shifted to farmers and Bedouin pastoralists, echoing historical colonial narratives that blamed "overgrazing" to justify land grabs.[88] This narrative bypasses the need to embed safeguards against the fragmentation of agricultural land and coordinate restoration efforts to accommodate the diverse land and tenure needs of Jordan's producers.

FGDs held in the Jordan Valley further revealed that inheritance-based subdivision and disputes over the dissolution of shared plots further compound fragmentation. These disputes intersect with gender relations, complicating tenure protections and highlighting the uneven distribution of risks and benefits within households and communities. While national strategies, including the Stakeholder Strategy for Land Governance, promote tenure security and participatory land governance among women and youth, mechanisms for implementation that are responsive to rural social relations and the root causes of rural dispossession are slow to be created.[89]

State lands, comprising around 70% of Jordan, constitute a significant site of tension.[90] Despite national strategies promoting agricultural land reclamation, actors continue to face barriers to accessing state land to enhance local food production. The Department of Lands and Survey oversees state lands under the Real Estate Ownership Law No. 13 of 2019; it manages leasing, allocation, and expropriation.[91] However, its mandate rarely accounts for complex social relations around production, leaving renters, herders, and wage laborers underrepresented in tenure considerations. Notably, many farmers have rehabilitated, lived on, and cultivated such land for decades yet face legal limbo and penalization for encroachment.[92]

These dynamics intersect with broader land expropriation legislation in Jordan. In addition to state land governance by the Department of Lands and Survey, both state and private land may be expropriated for projects deemed to serve "public utility" under the constitution. Moreover, the JVA is authorized by Article 21 of the Jordan Valley Development Law to expropriate and immediately acquire land shares within the Jordan Valley with the approval of the Council of Ministers.[93] However, the constitution stipulates that no property may be expropriated without "consideration of a just compensation".[94]

Yet, Real Estate Ownership Law No. 13 stands in contradiction to this: Article 192 authorizes expropriation of up to 25% of a lot without compensation for so-called "linear projects".[95] Moreover, Article 186 fails to explicitly recognize compensation for tribal stewardship, customary tenure, or "illegal" occupation, cementing the relationship between people and land in terms of commodity-based individual ownership.

Consolidating more than 13 legislations and 19 bylaws, the law facilitates the elimination of joint ownership, streamlining land transactions, transforming miri (state) lands into Mamluka (private) lands, and incentivizing investment.[96] Article 96 permits dissolution of property by holders of at least three-quarters of the shares without requiring the consent of remaining or dissenting parties, provided that the remaining shares cannot be divided independently or collectively. With dissenting parties limited to buyouts or having their shares purchased at possibly depressed rates that may not reflect livelihood losses, this precludes just compensation for socioeconomically disadvantaged groups, including rural communities.[97]

Recent amendments to the Real Estate Ownership Law facilitated foreign property ownership in specific areas for non-Jordanian Arab individuals, as well as non-Jordanian legal entities, companies, associations, political parties, charities, sports clubs, and religious associations.[98] This infusion of capital into Jordan's land market is reflected in reports from many smallholder farmers, claiming that foreign buyers offered three to four times the standard price for their farmland. While some saw this as an opportunity to gain capital and repay debts, others refused to sell, fearing broader patterns of dispossession.

Dispossession is further manifested through the conversion of agricultural land to extractive use. This was poignantly displayed during interviews in Ghor es-Safi in the Jordan Valley, where an impending land expropriation was being advanced without

information, due participation, or clear compensation from relevant bodies.

On 29-10-2025, the Council of Ministers ratified an expropriation request by the Department of Lands and Survey to acquire approximately 3,499 dunums of land in Ghor es-Safi and Ghor Fifa for a railway project that links the Arab Potash Mining Company's facilities in Ghor es-Safi to the industrial port in Aqaba, as well as other "projects and purposes" of the company. Around 62% of the expropriated land (2,179 dunums) belongs to 76 families. The remaining areas – owned by institutional entities including the JVA and the ACC – have been leased to and cultivated by farmers and relied upon by agricultural workers for decades.

The environmental and social impact assessment conducted for the project failed to consult relevant actors, including affected agricultural communities, CSOs, and relevant ministries, including the MOA, adequately assess socio-economic impacts, or present its findings to the relevant competent committee, as required by the Environmental Classification and Licensing Regulation No. 69 of 2020.[99] Moreover, it became apparent that the railway route had been later relocated from the expropriation site to a new location. Despite this, the original expropriation decision remained in force in favor of the Arab Potash Company, where approximately 60% of shareholders are non-Jordanian entities.

For a decision that could sacrifice some of Jordan's most strategic and irreplaceable national agricultural land, as well as the livelihoods of many communities dependent on it, such oversights raise grave concerns.

Moreover, the dispossession of agricultural land in the Jordan Valley cannot be decoupled from the geopolitical position the valley has along Jordan's longest border with the Israeli occupation, where cross-border fires set by settlers and Israeli occupation forces to expand the Jordan Valley "buffer zone" have further constrained farmers' ability to access and cultivate their lands.

Water Governance for Agriculture

Jordan is widely recognized as one of the most water-scarce countries in the world; framing this scarcity solely as an imminent climate change crisis overlooks its social and political construction that has been shaped by transboundary water appropriation, overexploitation of groundwater, rising urban and industrial demand, weak infrastructure, and poor management.[100] Indeed, the urgency of Jordan's water depletion and the accelerating impacts of climate change – seen in prolonged drought periods, intensified flash floods, and crop failure – cannot be ignored. Yet the struggle over water also cannot be reduced to assumptions of inevitable scarcity. Reclaiming the control, safety, use, and meaning of water requires confronting the colonial and neoliberal diversion of water from sovereign food production.

Groundwater remains the backbone of irrigation, supplying around 210 million m3 annually, followed by surface water and treated wastewater (increasingly relied upon), together accounting for the country's total irrigation supply. Although nearly half of the country's total water supply (48.6%) is used for irrigation, small producers bear the brunt of scarcity, facing unequal access to water and mounting pressure to abandon farming.[101] Dominant policy narratives, reinforced by multilateral and donor organizations, frame agriculture as an inefficient water user and promote the reallocation of water toward urban and industrial use and export-oriented production: "The only way to cut the overdraft is to reduce agricultural use and increase water-use efficiency".[102] This view overlooks food as a fundamental necessity. These narratives also persist despite systematic inefficiencies in Jordan's water infrastructure: in 2023, the Ministry of the Environment reported that only 70% of households were connected to the sewage system, indicating nonagricultural water losses.[103]

The governance and legislative framework for water in Jordan is extensive and centralized. The Ministry of Water and Irrigation is responsible for national water policy, planning, and water resource management. Under its umbrella, the Water Authority of Jordan (WAJ), established by Law No. 18 of 1988, manages all water supply and wastewater services, acting as the operational arm of the ministry.[104] This law designates all water resources as state property; prohibits any work involving water or sewage without WAJ's approval; and authorizes licenses for groundwater extraction, well drilling, distribution of irrigation water to users, and appointing members of the Water Councils in the regions. In parallel, the JVA, created under Temporary Jordan Valley Development Law No. 18 of 1977 (amended by Permanent Law No. 19 of 1988), holds a specialized mandate for the development and management of land and water resources including irrigation

infrastructure within the Jordan Valley.[105]

Underground Water Bylaw No. 85 of 2002 further affirms state control over groundwater, requiring licenses for extraction and defining the minimum land area and other conditions for licensing, as well as granting WAJ power to acquire public and private wells.[106] The Groundwater Sustainability Policy of 2016 sets priorities for the protection of groundwater recharge areas and includes restrictions on well licensing and conditions for government expropriation of water-use rights in the case of higher-priority purposes where compensation is provided.[107] More recently, a 2022 regulatory framework for drilling groundwater wells in the Jordan Valley established additional eligibility licensing requirements: it ties them to specific agricultural units and land ownership conditions, obligates farmers to provide financial guarantees, and allows JVA and WAJ staff to monitor usage.[108] Interviews with farmers indicate that well-drilling costs are prohibitive for small producers due to the high capital investment required. Many farmers who were driven by scarce water supply to assume this financial burden discovered that the well water had high salinity levels and required additional investment in desalination or treatment.

Private sector actors also hold significant influence: the Arab Potash Company secured preferential water allocations in exchange for financing dam construction, while fertile land remains "thirsty".[109] Donors and international agencies exert strong influence by funding major water programs, often promoting agricultural technologies like hydroponics as the "savior" solution to water scarcity. However, these projects frequently fail to consider the local context and the needs of small farmers.[110] The technologies are often expensive and difficult to maintain, leading to adoption failure when donor support ends. They require substantial freshwater to operate and are limited to certain crops in which Jordan is already self-sufficient, raising questions about how effectively such interventions contribute to achieving food sovereignty.

Water User Associations (WUAs) are becoming increasingly important as the JVA transfers distribution management to them.[111] However, they lack a dedicated legal framework specifically governing their operations and accountability mechanisms, increasing the risk of ineffectiveness or co-optation.[112] Each geographic area functions under different governing structures, and the local power dynamics are reflected within the associations, often reinforcing existing inequalities and further marginalizing small or impoverished farmers.

Where do small producers fit into this picture? Several factors complicate their water access. Strict legal requirements, such as the land ownership condition for well-drilling licenses, make it difficult for those cultivating state-owned or fragmented land to access groundwater. Water allocation often favors industrial users and large-scale projects, leaving small producers to compete for limited resources while facing stricter administrative and legal barriers, higher costs including electricity expenses to operate water pumps, and potential fines. The situation is further exacerbated by climate-induced increases in evaporation and deteriorating water infrastructure, with 50% of water lost to leaks and inefficiencies.[113] Consequently, water-related debts to national institutions place additional pressure on smallholder farmers, who may also rely on costly informal water sources.

In addition, the deterioration of surface water quality due to pollution – such as in the case of King Talal Dam – can negatively affect crop quality, often forcing farmers to adopt alternative treatment methods at additional cost.[114] Among the 70 farmers surveyed, 17% reported poor water quality and 61% said irrigated water was of medium quality. Small producers and farmers also reported that gaps in information and limited public transparency regarding distribution schedules and water availability hinder effective planning. Most respondents (76%) reported receiving insufficient water for irrigation; some attributed this to scarcity and climate change, while others pointed to reduced water allocations and inequitable distribution from the JVA.

These challenges cannot be understood in isolation from the broader geopolitical context. Around 40% of Jordan's water resources are transboundary, including surface and groundwater sources such as the Yarmouk River basin shared with Syria, the Disi aquifer shared with Saudi Arabia, and the Jordan River basin usurped by the Israeli occupation.[115] While bilateral agreements exist to govern these shared resources, violations undermine Jordan's rightful access. In the case of the Disi aquifer, a history of unequal extraction for export-oriented agricultural production coupled with Saudi Arabia's technological and capital advantage has accelerated the depletion of this nonrenewable groundwater source.[116]The Israeli occupation maintains a hydro-hegemony over Jordan's water resources

through a range of strategies. Reports and official confirmations remain ambiguous, but evidence indicates continuous violations of the 1994 Wadi Araba Treaty. One report asserted that the occupation usurps between 600 and 700 million m3 of water annually from the Jordan River and its tributaries, largely through the Israeli National Water Carrier's diversion of water to the Naqab desert to serve its colonial projects.[117] This control has also been reinforced through the building of dams on the lower Jordan River such as the Degania Dam and the Alumot Dam. The occupation has extracted groundwater from the al-Ghamr area unchecked, leading to numerous natural wells drying up. In addition, the occupation has on several occasions delivered polluted water to Jordan, with documented cases in 1998 and 2009.[118]

Moreover, wastewater and agricultural waste are discharged into the river, compounding its decline.[119] Against this backdrop, Jordan purchased additional water from the Israeli occupation, effectively buying back its stolen resource.[120] This theft is starkly visible in the occupation's literal drying of the Dead Sea.[121] In the face of this, the Israeli occupation continues to expand its settler-colonial project, growing its control over land and resources and leveraging water dependency to push for normalization projects. One such example was the 2022 "water-for-energy" deal, advanced by EcoPeace Middle East, which faced widespread opposition in Jordan, leading to the consequent cessation of the deal.[122]

Cultivation Stage

Seeds

While efforts are being made to improve access to and management of seeds in Jordan, farmers still struggle with access to quality seeds amid increasing prices, reduced awareness, and impacts of climate change.

Although the Department of Statistics provides an accessible database that tracks agricultural prices over time, the data does not distinguish between seed types, such as hybrid or heirloom, nor between imported and domestically produced varieties.[123] While farmers and market traders voice concern over rising seed costs, local seed producers maintain that prices remain affordable for smallholder farmers.

Legal and regulatory pathways do exist to monitor and place controls on seed prices. Competition Law No. 33 of 2004 indicates the government can, in theory, regulate seed prices under Article 4(B).[124] The Council of Ministers may temporarily impose price controls in exceptional situations, such as the approval of seed price controls for the 2025-2026 season to encourage barley and wheat cultivation.[125]

While providing critical support for farmers, such measures tend to be implemented without a systematic plan to strengthen local production of staple crops. Small farmers in particular claim that wheat and barley cultivation is challenging to maintain due to increasing economic vulnerability, diminishing access to water supplies, and foreign competition. During the multi-actor consultation, a wheat expert affirmed that not only is wheat heavily subsidized in the country of origin, such as the US and EU, but there are also critical concerns regarding the quality and nutritional value of imported wheat, which can sometimes be "older than five years or nearly expired".[126]

Over the past decade, Jordan's seed production industry has grown significantly, from six companies in 2011 to more than 36 in 2023.[127] In February 2025, when questioned on the rising price of imported tomato seeds, the former Minister of Agriculture acknowledged a gap in price control, but qualified this by highlighting Jordan's global market competitiveness in exporting 80% of its domestic seed production to 50 countries.[128] This reveals that seed production is largely oriented toward export markets while smallholder farmers struggle to access and adopt locally produced hybrid seeds.

In our field research survey of 46 smallholder farmers, 71% preferred hybrid seeds over heirloom varieties. In a follow-up question answered by only 14 farmers, 10 indicated a preference for imported hybrid seeds rather than locally produced hybrids. Domestically produced hybrid seeds could offer a more economically viable option to increasingly expensive imports. However, limited farmer awareness alongside strong competition from established international and regional companies has prevented national producers from becoming the default and most accessible option for smallholder farmers. Farmers also cite limited time and financial capacity to experiment with alternative varieties. Interviews and surveys highlight that labeled seed packets with clear usage information often cost more, motivating some smallholders to buy cheaper, unlabeled seeds from local markets. These seeds sometimes fail, yet economically vulnerable farmers report having no alternative amid limited capital, extension support,

and mechanisms of redress.

The issue of transparency of origin is further compounded by gaps in regulation and screening of cross-border seed imports. For instance, while Jordan is not formally listed among the Israeli occupation's major seed export markets, farmers in the Jordan Valley have reported the use of defective Israeli seeds and seedlings obtained through unofficial channels and called for stricter cross-border monitoring.[129] Not only does this fracture mechanisms of redress for defective seeds, but it also raises concerns around normalizing agricultural relations with the Israeli occupation, as expressed by Jordanian farmers and agricultural organizations.[130]

Farmers also reported the financial burden of being locked into the seasonal repurchase of hybrid seeds to avoid potential productivity losses if they are replanted. The lack of targeted research around the potential reuse of hybrid seeds creates an information gap that corporate actors leverage to ensure ongoing demand.

Amid increasing corporate control and the privatization of agricultural knowledge, an often-overlooked gap lies in public awareness of GMOs. Jordan's regulatory framework restricts the entry and use of GMO seeds into the market and mandates the registration of imported vegetable seed varieties to ensure compliance. For example, Article 10 of Instructions No. Z/13 of 2022 requires the seeds registration applicant to provide "a certificate confirming that the seedlings and seeds are non-genetically modified, including their trade name, and issued no more than one year prior to the date of receipt".[131] Furthermore, Organic Agriculture Bylaw No. 31 of 2024, issued under Agriculture Law No. 13 of 2015, prohibits the use of GMOs or materials derived from them.[132] In 2018, however, the Food and Drug Affairs Committee recommended easing the existing import ban on GMOs following lobbying efforts by American agricultural representatives. CSOs led by APN protested the decision and successfully maintained the restrictions.[133]

Despite this regulatory framework and civil society advocacy, studies reveal gaps in transgenic material screening and phytosanitary standard monitoring. A 2020 study detected GMO material in corn seed samples in Jordan that was derived from the cauliflower mosaic virus commonly used in genetic engineering technology.[134]

For imported potato seeds, instructions were revised to remove the requirement for laboratory testing in Jordan, though visual inspections and phytosanitary certificates from the country of origin are mandatory.[135] While intended to minimize delays, this revision leaves smallholders vulnerable to defective or diseased imports with limited recourse, as affirmed by farmers left to deal with defective potato tubers.

Finally, farmers have expressed growing concern over the impacts of climate change on seed quality and productivity. While national strategies acknowledge these challenges and include objectives to promote high-yield, drought-resistant, and salinity-resistant plant varieties, as outlined in the Green Growth National Action Plan, these goals have yet to be translated into concrete actions.[136]

National efforts are underway to enhance self-sufficiency in seed and sapling production while preserving local and indigenous plant varieties. The national seed storage unit established in 1993 at the National Agricultural Research Center aims to conserve "native plant heritage with a focus on plant genetic resources for food and agriculture".[137] In 2025, the national seed bank was inaugurated as an extension of this unit within the framework of the National Plan for Sustainable Agriculture, the National Food Security Strategy, and the Economic Modernization Vision.[138] The seed bank would strengthen food security by preserving crop diversity, combining local conservation efforts with foreign knowledge exchange. Complementing these initiatives, a government-supported initiative is establishing a local laboratory for potato seed production to reduce import dependency. However, as several interviewees and small producers emphasized, the extent to which such efforts will translate into tangible improvements for farmers on the ground remains unclear.

Fertilizers and Pesticides

For some farmers, the following interrelated structural drivers limit their capacity to reduce chemical fertilizer and pesticide use to adopt viable biobased and organic alternatives:

- the weakening of public agricultural support;
- the increasing prevalence of pesticide-resistant pests due to repeated pesticide use;
- the pressure to reduce risk of crop failure in an increasingly competitive and liberalized market system;

- inactive regulatory frameworks; and
- the lack of farmers' capacity to effectively diagnose diseases and transition toward sustainable pest management.

Field visits across the Jordan Valley revealed serious constraints that farmers face in accurately diagnosing pests or diseases affecting their crops. A striking example from the 2025 agricultural season was the farmers' varied understandings of an outbreak of a pest that disrupted watermelon growth. In the southern Jordan Valley, several farmers attributed the problem to corrupted saplings from the nursery itself, while others in the north believed it was a lack of water. Interviews with experts, including an organic farm owner and seed expert, stated that it was an aphid outbreak.

Ongoing deficiencies in public diagnostic processes and knowledge-sharing mechanisms reflect systemic gaps in technical extension services. Farmers cited inconsistent visits from extension agents; as a result, private actors would recommend expensive pesticides without proper diagnosis. One farmer cultivating bananas recounted losing his entire crop after a local company advised using costly and inappropriate chemical pesticides. Most farmers linked excessive pesticide use with soil degradation and decreased production.

The challenge of distinguishing corrupted saplings from pest infestation alongside unresolved debts with agricultural suppliers leaves farmers reluctant to pursue any form of redress. However, compensation mechanisms exist. One agricultural association head recounted that a farmer received compensation after documenting infested saplings, and a local governor noted that collective legal claims could be pursued.

Regarding the production of agrichemical inputs, while Jordan is a major fertilizer producer, supply is prioritized for export markets, with exports reaching US$1.38 billion in 2024.[139] As one farmer noted during the multi-actor consultation, they were unable to access local fertilizers for the season, highlighting the extent to which production is oriented toward export rather than domestic agricultural needs.

Jordan has a broad set of laws and regulations governing soil protection and pesticide and fertilizer use, but enforcement remains limited, with controls including random farm inspections for pesticide-use violations and residue testing of produce at the Amman Central Market.[140] The issue is usually framed as one of farmer behavior, with enforcement relying on inspections and fines; this fails to address the structural constraints that perpetuate dependency on chemicals that impact crops, animal products, and soil quality.[141] For example, Instruction No. G/4 of 2022 – regulating the registration, import, and trade of pesticides and biological control agents – prohibits the registration of microbial biopesticides containing more than one active ingredient, effectively restricting the trade of locally produced or organic alternatives.[142] Interviews with regulatory officials confirmed that lobbying by pesticide importers continues to influence these processes. This dynamic has also revealed the double standard in international regulation and enforcement; countries that have banned certain pesticides domestically, including in the EU, continue to export them abroad.[143]

While there are regulations that recognize the need for sustainable transitions, measures to support them remain inadequately implemented. Jordan's National Climate Change Policy identifies tax exemptions on organic fertilizers and biopesticides as an indicator of policy formulation for addressing soil erosion and land degradation, yet it is unclear whether such exemptions have been implemented.[144] Likewise, Article 5 in the instructions for registration, production, import, and sale of agricultural fertilizers and plant growth regulators permits production of organic fertilizers from poultry, cattle, and plant waste, but price disparities make domestic use costly.[145] While initiatives like the EU-funded "Decentralized Composting in Small Towns" project promote organic composting, they often function as tokenistic, small-scale pilots confined to urban settings, excluding rural smallholders who could benefit from localized input cycles.[146]

Recent policies, such as the Organic Agriculture Bylaw No. 31 of 2024, mark a growing institutional interest in organic farming and agroecological practices.[147] However, both experts and farmers confirmed that certification processes remain inaccessible and impose prohibitive standards. Moreover, the inability of small farmers to transition is compounded by their limited capital and capacity to experiment with and adopt alternative practices. Capacity here refers not only to knowledge but also to access to time, land, and the security necessary for trial and error. Interviews with organic producers highlighted how organic farms function as

critical spaces of experimentation, restoring locally grounded knowledge beyond the rigid standards of European organic certification.

The FFS approach was originally designed by the Food and Agriculture Organization to strengthen integrated pest management (IPM), and emphasized biological control, crop rotation, and reduced reliance on chemical pesticides. It was first introduced in Jordan through an initiative launched by APN in 2005 to support smallholders in meeting IPM certification standards. However, over time, the implementation of FFS by national and international actors diverged from its original purpose, shifting toward general themes such as water efficiency and productivity, and covering fragmented topics with little relevance to farmers' immediate pest management needs. This shift illustrates how externally driven interventions can detach from local realities. The absence of a dedicated national mechanism to coordinate, monitor, and promote IPM adoption and limited civil society engagement have further constrained progress.

Labor

The legal and structural marginalization of agricultural workers in Jordan has effectively turned agricultural labor into a site of cost-cutting in an input-intensive and globalized agricultural economy. While agricultural workers were excluded from Jordan's initial labor law passed in 1960, protections were incrementally extended, most notably through the 2008 repeal of their exclusion from the labor law.[148] In 2021, a separate regulation for agricultural workers was issued, Agricultural Workers' Regulation No. 19 of 2021 (amended in 2025), outlining wages, working hours, leave, employer obligations, and social security provisions.[149] However, as a separate regulation, it faces obstacles to its activation, enforcement, and effective institutional integration.

Building on legal analyses by Tamkeen, the Phenix Center for Economic & Informatics Studies, and Porticus, our field research confirms the institutionalization of precarity as a defining feature of agricultural labor.[150] Critically, Article 12 of the Agricultural Workers' Regulation requires employers "involve their agricultural workers in the insurance schemes covered by the provisions of the Social Security Law".[151] This move is undermined without amending Article 4 of the Social Security Law, which excludes "irregular" workers, defined as those who work less than 16 days a month or those who are not paid monthly.[152] This exclusion would then appear to raise uncertainties around the social security rights of the around 38% of hired labor categorized as "casual" in 2019 across crop and livestock production – we assume "casual" and "irregular" are the same according to their respective formal definitions.[153]

Further, Article 59 of the Social Security Law (as per a 2023 amendment) restricts agricultural workers' coverage to work injuries and maternity insurance alone, narrowing an already structurally flawed protection scheme.[154] From consultation with CSOs active in this space, we learned that state inspection capacities remain critically under-resourced, limiting enforcement of even minimal protections. For the smallholders we interviewed, operationalizing labor rights is financially unfeasible without state support to supplement the cost. With corporate agribusinesses better positioned to finance social security provisions, uneven enforcement procedures could edge out the competition of small-scale farmers.

Many smallholder farmers expressed a sense of helplessness in their limited ability to support workers in times of injury. One farmer recounted that after a snakebite, the only help he could offer was to drive the worker to the hospital. "There is no compensation, only private insurance", which remains unaffordable for many. Transportation to the worksite also carries risk: workers relayed several accidents during transit on overcrowded and unlicensed vehicles. In the field, workers face heatstroke, dehydration, and injury; respiratory illnesses and poisoning from prolonged work in greenhouses and pesticide exposure are slow-developing harms. The implementation of the Agricultural Workers' Regulation is further complicated by the network of unregulated intermediaries (shawish) operating amid the retraction of state financial and agricultural extension support and limited labor protections. Shawish mediate relationships between employer and employee, facilitating work opportunities. They tend to operate in the absence of labor contracts through which workers can claim labor rights.[155] Repeated attempts to license an independent union have been blocked despite Article 23 of the constitution requiring that the state enable free trade union organization.[156] Several workers we spoke with expressed reluctance to join informal independent agricultural workers unions. While the Jordan Valley Farmers Union – as a formal entity – is a key stakeholder in sectoral dialogue, farmers pointed to the union's tendency to reduce

agricultural struggles into issues of market access. The root causes of labor rights violations tend to slip through the cracks.

Between 2019 and 2022, the International Labour Organization's PROSPECTS project sought to influence legislation by supporting the inclusion of agricultural workers under the General Trade Union of Water, Agriculture, and Food Industry as an interim step toward forming a dedicated agricultural union.[157] However, some workers we engaged with expressed unease around membership under this union, fearing the further dilution of their voices. Additionally, Article 98(e) of the labor law excludes non-Jordanian nationals from founding employee associations, further rendering a large segment of the workforce structurally disadvantaged.[158]

Understanding the national composition of Jordan's agricultural labor force is complicated by the absence of a comprehensive registry of agricultural workers. While non-Jordanians appear to comprise 43.7% of Jordan's hired agricultural labor force as of the 2019 agricultural census, our field research uncovered numerous accounts of unregistered Jordanian and non-Jordanian laborers.

In the context of this, the precarity experienced by migrant laborers is further institutionalized through Jordan's sponsorship or kafala system that binds workers to the contractual terms laid out by sponsors. The power asymmetry is partly sustained by work permit renewals that can be submitted in a worker's absence, and fees that sponsors can extract in exchange for travel and employment.[159] Here, our field research revealed a concerning pattern wherein migrants paid sponsors for employment agreements that never materialize in work upon arrival. Stories also revealed employers leveraging bureaucratic loopholes to trade employee contracts and exceed migrant labor quotas.

The informalization of agricultural labor has further reorganized work along gendered lines. The exodus of Jordanian male workers has also led to an increase in Jordanian female workers. Farmers highlighted during FGDs how female laborers were preferred for their work ethic and precision, as well as being able to employ them at lower wages due to gendered valuation of labor. Field interviews revealed accounts of women going into labor while harvesting, underscoring the inaccessibility of maternity leave. The lack of water, sanitation, and hygiene infrastructure bears further harm for women, whose biological and cultural needs are routinely discounted. This is a cross-generational reality. One farmer noted: "Women are now working the fields until their 80s, even 90s, because they have no other option," referring to the lack of retirement funds and increasing debts. Amidst this, female farmers and workers have formed coalitions alongside local civil society to assert and negotiate their rights in the field.

Research into indebtedness often focuses on male farmers; however, our field research confirms an emerging class of female debtors who take out loans in their own names when male relatives are no longer eligible. Shouldering financial risk compounds their vulnerability and intersects with a culture of shame. During FGDs, female agricultural workers discussed how shame does not emerge from working the land, but rather from being stripped of land through expropriation or default and being bound as laborers through relations of indebtedness to intermediaries and employers. In this increasingly common condition of familial indebtedness, family labor remains a necessity for rural households.

Given that family labor constitutes the majority of agricultural labor in the Kingdom, children may participate alongside their family members in agricultural work.[160] It is important to avoid framing child work as an inherently exploitative practice, considering it is a longstanding feature of rural social reproduction. Yet our interviews with local civil society indicate that it can become a market-induced survival strategy amid prohibitive input costs, cyclical indebtedness, and decreased state support. It was therefore unsurprising that FGDs revealed a decline in youth interest in agriculture compared with other sectors given its lack of protection. Agricultural work was often discussed as an unviable income source since small-scale farmers struggle to maintain their livelihoods. This is pushing families to preemptively sell land, further fracturing Jordan's productive land base.

Post-harvest Stage

Food Processing

Food processing is a vital pillar of food sovereignty, anchoring the production of value-added and preservable foods within local supply chains and opening the scope for import substitution and regional trade. The food industry sector currently meets roughly 50% of the local market demand, indicating existing capacity and significant growth potential.[161]

Bilateral donors and development agencies have

invested heavily in this space, particularly through support to small- and medium-sized enterprises that nonetheless overlook what small producers consistently identify as a structural problem of unequal access to processing and production facilities. Most notably, only home-based businesses within the Greater Amman Municipality were required to register and obtain a license. USAID's LENS project supported extending home-based business registration to all municipalities to facilitate their integration into the formal market.[162] Such initiatives tend to reduce the development of Jordan's food processing sector to promoting formal market integration for microprocessors, framing the informal market as the main obstacle. This overlooks the key structural drivers of market liberalization – which have allowed large, established actors to consolidate control over infrastructure, capital, and processing policy – and the marginalization of rural collectives that could pool resources to challenge this concentration of power.

Jordan's Economic Modernization Vision calls to "expedite elimination" of the "food processing shadow market" and promote "vertical integration", meaning the consolidation of multiple stages of the agrifood supply chain under larger firms' control, typically through contracting arrangements that centralize capital and agricultural decision-making.[163] Without state-supported marketing platforms, such interventions raise concerns about how smaller enterprises and producers can maintain their autonomy or domestic food production when entering contracts with large-scale companies oriented toward exports. The risks of contractual asymmetry are exacerbated by the lack of targeted and effective union representation for small producers resilient to corporate capture.

These dynamics extend into livestock and dairy processing, where smaller producers face constraints that emanate from vertically integrated supply chains. Small poultry and cattle farmers highlighted how major companies rely on their own contracted farms and slaughterhouses, leaving little room to purchase from small-scale producers. Because small producers lack liquidity, they are often unable to secure essential inputs such as D01 (Day-old) chicks, feed, or veterinary supplies since suppliers avoid farmers that are unable to pay upfront. Without strong cooperatives or union structures, producers cannot pool capital to reduce costs, negotiate fairer prices, or influence policy to compel bigger companies to purchase their produce through unions, limiting their ability to access processing channels.

Larger producers face their own structural challenges, including dependence on imported fodder and the tendency of state institutions to procure cheaper imported chicken instead of locally sourced. This dual reliance on foreign inputs and imported products further entrenches vulnerabilities across the sector.

Small-scale food processors also pointed to barriers that complicate the shift toward forming alternative local economies. Producers noted that compliance demands – such as contradictory requirements across multiple government entities, annual inspections, and the high cost of testing each product – create a prohibitive burden unless producers operate at scale. Minimum facility size requirements and the cost of certificates in particular hinder emerging enterprises looking to enter regional markets. Existing regulatory frameworks shaped by obsolete industrial models fail to accommodate diversified, seasonal, and small-batch production or recognize its importance to cultural continuity and national food sovereignty.

Attempts to form a union of small producers revealed how fragmented incentives and individualistic behaviors shaped by exploitative market structures and the retraction of state support can undermine collective organizing. Case studies showed how wealthy actors often bypass cooperative structures by offering higher prices to individual producers, fracturing collective bargaining power and limiting the ability of cooperatives to operate as market players.

Agro-processing plants, positioned as a key "growth-promoter" in the Green Growth National Action Plan for agriculture, have prompted concerns around the destabilizing injection of capital into Jordan's food processing sector.[164] Rather than framing these plants as means of localizing control over domestic agrifood supply chains, official discourse presents them as a way of "shifting to export agriculture and absorbing surplus production".[165] This vision is taking shape through the pilot agro-park in Jordan Valley, south of Ghor es-Safi, listed as one of the projects reforming export capacities in Jordan's Reform Matrix crafted alongside the World Bank.[166] While we were told the agro-park and its processing factories sought to increase smallholder participation, on-the-ground accounts indicate the contrary. During the initial experimental phase of the project, we learned of an investor who attempted to

grow a costly tomato variety to supply the factories, restricting participation of existing producers. The crop failed, stagnating the project and stoking distrust among local producers around the agropark. This demonstrates how investor-driven and context-deprived interventions can further detach small producers' stakes from value-added production across the supply chain.

The date industry is another case. Date production in the Jordan Valley is monopolized by large-hold farmers with disproportionate access to water and capital. Smallholder farmers in the Jordan Valley discussed the impossibility of producing dates due to prohibitive entry points. CSO interventions highlight challenges of redistributing date palms for high-value processing to encourage smallholder participation. A redistribution initiative was discussed where large-holder farmers refused to pass date saplings to smallholder farmers, claiming they were ill-equipped to manage a pest infestation that was affecting date palms in the Jordan Valley. Lack of access to capital and pest management support intersect in ways that can thwart redistribution efforts, intensifying existing bottlenecks.

Cold chain access (temperature-controlled storage and transportation) is another key infrastructural determinant of equitable local processing capacity. Both the multi-actor and farmer consultations pointed to limited or unaffordable cold chain infrastructure as a recurring barrier for timely market entry to secure fair prices, including among citrus growers in the northern Jordan Valley. Notably, interviews with large-scale persimmon producers in Mafraq also revealed how these challenges extend beyond small farms. Although large producers successfully lobbied to restrict persimmon imports from the Israeli occupation, they too emphasized the need to expand domestic cold chain infrastructure to stabilize local supply chains amid fluctuating import controls.

Despite state- and donor-driven interventions to broaden cold chain access, challenges emerge when associations that represent small producers are excluded from decision-making processes. For example, small producers mentioned during interviews that collective storage facilities often failed due to the lack of consensus on how long farmers would need to keep their produce in storage: some producers had an urgent need for cash, while others were able to wait for a well-timed market entrance. Interviews appeared to confirm that a successful collective storage space requires more than investor capital, as was often claimed in interviews with actors from the public sector: it requires managing those facilities in ways that respond to the producers' varying socio-economic conditions.

Access to temperature-controlled transportation to processing or manufacturing sites is also a barrier for small-scale producers. For example, APN sought to support molokhia farmers with roadside stalls by planting and processing their harvest, responding to the unmet demand in Jordan. Processing facilities agreed to take on the produce, but without access to temperature-controlled transport, the molokhia risked spoiling before arrival.

Small producers also echoed the need for support in sorting, packaging, and licensing to access higher-value markets. While this continues to be a key site of donor financing, interviews with agricultural experts presented concerns around public–private partnerships that are aligned to the investor ethic of short-term capital and exit opportunities and poorly aligned to local capacities to sustain and develop technological interventions. This conundrum is reflected in the closure and investor abandonment of rural food processing facilities designed through top-down approaches that positioned small-scale producers as end-point beneficiaries rather than stakeholders, compounded by the absence of cooperatives or producer associations. Farmers pointed out one concrete example: a donor-funded dehydration unit intended to absorb surplus production that is no longer operational. Key questions emerged among farmers around the lack of viable accountability mechanisms or locally grounded roadmaps for the sustainable transfer and uptake of food processing knowledge and technology.

Market Access and Trade

Decades of neocolonial restructuring have remade Jordan's agricultural markets, enlisting its food system into circuits of global capital at the expense of local ownership. From 1989, International Monetary Fund and World Bank loan conditions compelled Jordan to diminish state protections and effectively entrust its agricultural sector to the free market. Archetypal SAPs followed, wherein southern countries such as Jordan were organized as sites of extraction and disposal by the northern countries. To justify the grounds for fiscal austerity measures, international financial institutions called out Jordan's so-called "strong antiexport bias" and the "constraints on investment and business

operations".[167] To correct these so-called economic and trade "distortions", reform packages stripped direct state subsidies to the agricultural sector, lifted tariff protections on imported goods, and deregulated land and agricultural credit markets, thus "unlocking" Jordan's agrarian landscape for highly subsidized external and corporate competitors.[168]

Cost recovery mechanisms were another dimension of agricultural reforms, often replacing state subsidy with a user-pays model to cover the cost of service, allowing the market to determine "efficiency" in resource use while leaving systemic barriers intact. As such, the burden of cost recovery further pressured agricultural livelihoods.[169] Notably, the 1994 Agricultural Sector Adjustment Loan, funded by the World Bank and Germany's Kreditanstalt für Wiederaufbau, sought to rationalize water and land for "optimal use" and promote the shift to perceived "higher-value" export horticultural crops through highly contentious, often-resisted water tariffs. The tariffs were critiqued for risking the entrenchment of rural poverty, neglecting structural constraints many small-scale and indebted farmers face to "optimize" water use,[170] and ultimately failing to improve cost recovery or water use efficiency.[171] Loan conditions further intensified pressure to steer production away from perceived lower value yet key staple crops; for instance, through the elimination of procurement subsidies on locally-produced cereals.[172]

One of the most severe interventions pushed by the World Bank was the closure of the aforementioned state-led agricultural marketing body, which provided farmers with assistance in securing market outlets for their produce.[173] While a World Bank report assessing Jordan's agricultural market liberalization celebrated that "distortions between internal and world market prices have been largely eliminated",[174] another World Bank assessment frankly acknowledged the broader reforms "were not sufficient to ensure that farmers reaped the benefits of adjustment", further noting "many small farmers and herders were marginalized by reduced profitability and its impact on rural poverty was generally negative [...]".[175] The cost of evidently harmful agricultural liberalization has been borne by farmers.

Jordan's accession to the World Trade Organization in 2000 necessitated the further removal of trade barriers, part of a broader process of global market integration, including the US-Jordan Free Trade Agreement, and the EU–Jordan Association Agreement.[176] While these agreements claim to promote mutually advantageous free trade passageways for Jordan, nontariff barriers (largely by EU actors) in prohibitive food-safety standards continue to stymie Jordan's trade of value-added products.[177] At the same time, Jordan's farmers are exposed to the vicissitudes of free market competition with imports from often heavily subsidized foreign agricultural sectors, [178] which can operate as a form of structurally induced dumping. For instance, hundreds of thousands of tons of US wheat have previously been sold at artificially low prices that subvert local production, often under the label of "food aid".[179] Despite Jordan having antidumping legislation, questions remain as to whether donor pressure around "aid" consignments might impact its implementation.

Additionally, the lessening of import protections has further allowed cheap regional citrus and vegetable produce to flood local markets despite Jordan's current vegetable overproduction, with a self-sufficiency rate of 133%.[180] Farmers' protests against imports that outmatch local produce are typically met with short-term and reactive market restrictions.

Together, all these components have cultivated a condition of extreme import dependence and, by extension, vulnerability to market shocks, including regional border closures resulting from colonial-driven wars. In 2023, the country imported 3.7 billion dinars (about US$5.2 billion) in agricultural products, while exporting around 1.13 billion dinars (about US$1.59 billion), indicating an agricultural trade deficit of 2.57 billion dinars (about US$3.62 billion).[181] In light of this, Jordan's Economic Modernization Vision calls for expanding "domestic markets by replacing imports with local products" to enhance national food security. This objective is undercut by the export growth target set at 350% without a corresponding quantifiable goal to boost domestic production.[182]

Within this liberalized market landscape, the Amman Central Market emerged in the 1990s as a mechanism to "rationalize" agricultural supply and demand. In practice, it instituted a centralized infrastructure that binds small producers to an extractive network of market intermediaries.[183] Codified through the Wholesale Markets System for Horticultural Products of the Greater Amman Municipality, issued under Articles 5 and 75 of the Municipalities Law No. 41 of 2015, wholesale sales of horticultural products within the municipality's

boundaries are prohibited outside of the Amman Central Market, thus consolidating negotiating power within it.[184] This creates a suffocating conundrum for marginalized producers, who are unable to afford cold storage and transportation to access the Amman Central Market.

Over time, the Amman Central Market has become a site for informal credit relations. Indebted farmers who are ineligible for formal lending due to lack of collateral often turn to merchants who act as creditors, binding them to extractive arrangements that force producers to operate as price takers. Farmers discussed during FGDs how merchant creditors can secure fixed commissions from the farmer's produce, while the farmer absorbs all the risk. More extreme cases included outright refusal of merchants to pay indebted farmers, alongside inconsistent produce weighing and grading. Furthermore, the concentration of cold storage space in the Amman Central Market enables merchants to store produce and flood the market when advantageous.[185] Farmers noted that while this structure can be partially bypassed through diversification into smaller regional markets, such as Jerash or Ajloun, legal action threatened by lenders can draw them back to the Amman Central Market. Prices can be kept artificially low for consumers, further eroding the small producers' meager profit margins.

At the farm level, these dynamics manifest in an informational and economic deficit. Some tomato producers in the Jordan Valley describe farming as "gambling": hoping past successes will carry over into the next season despite an absence of reliable market data and an agricultural calendar. Cyclical overproduction and price collapse are compounded by the lack of coordination between producers, the MOA, unions, and Amman Central Market actors. Stories abound with entire harvests being destroyed or abandoned because transportation costs exceed depressed returns.

Indeed, these are contributing factors to Jordan's estimated 55% rate of fruit and vegetable loss. While the World Bank tends to narrowly attribute such loss to farmer practices, such as "poor post-harvest management", our field research unveils structural drivers in the isolation of farmers from market information and price-point controls, infrastructure and storage support, and decision-making processes.[186]

Despite Jordan's consumer protection framework, the integration of consumption and consumer interests into market policies remains limited. Gaps in the monitoring and control of imported foods can pose public health issues that consumers are often unaware of.[187] CSOs continue to contend with global trade pressures and the lack of a concrete governance platform to impact policy in a substantive way.

Without this representation, the lack of alignment between consumer needs – away from globalized food cultures – and what can be produced domestically remains unaddressed. For example, imported products, including rice, have largely supplanted locally produced cereals, such as jareesh and maftool, in local diets, illustrating how consumer preferences interact with historical and socio-economic forces in ways that entrench import dependence and further distance domestic production from local dietary needs.

Structural Drivers

This study traces the following root causes that create the precarity and dispossession that afflict Jordan's agricultural sector and undermine its path to food sovereignty.

- So-Called "Liberation" via Commodification and Accumulation

The British mandate embedded colonial logic into Jordanian agriculture through the notion of "improvement" which commodified local agricultural ecologies into engines for cash crop and export production. To do so, Jordan's productive resources had to be "liberated" by successive neocolonial actors via the dissolution of communal modes of tenure, cultivation, seed preservation, water distribution, and labor, which were commodified and forced into global capital circuits.

- Fragmentation and Dissolution of Collective Tenure

Farmers who contend with untenably small plots and insecure tenure relations are the legacy of this process of "liberation". Jordan's "super green revolution", under the counsel of USAID and others, resulted in large landholdings being divided in favor of small family-run units to heighten cash crop production.[188] Paradoxically, the expansion of small, fragmented, often-absentee farm units has depressed yields and incomes. Farmers lack surplus liquidity to invest and scale, locking Jordanian agriculture into a cycle of chronic indebtedness and the

subversion of productive potential.

Real Estate Ownership Law No. 13 of 2019 further entrenches this model by formalizing the dissolution of collective tenure.[189] By eliminating the legal recognition of communalism, this law forecloses a farming structure that could facilitate cost-sharing and sustainable land stewardship to scale agricultural production. Instead, farmland is increasingly absorbed into financial circuits, where credit institutions, urban developers, and international investors benefit from a liberalized land market. Inflated land values compel producers to sell to settle debt, further fracturing the arable land base.

- Neoliberal Trade as a Vector of Dispossession

Liberating Jordan from its so-called market "distortions" in structural adjustment programming necessitated slashing Jordan's import controls and agricultural subsidies, with the effect of further subsidizing global north market dominance. Northern and other major agricultural exporting states often protect their producers through subsidies, non-tariff barriers and export surplus goods, including under the humanitarian screen of food aid.[190] Such structural injustices deepen Jordan's dependence on imports and donor support. Furthermore, the future of Jordan's food system has been normalizing import dependency as the inevitable trade-off for its "water poor" status, while paradoxically enhancing its export capacities for water-intensive crops.

- How "Public Benefit" Is Determined

"Public benefit" is often presented as neutral; in practice it is isolated from meaningful public participation. Under contemporary land governance in Jordan, land can be expropriated in the name of public benefit, and investor priorities can shape land-use change.[191] Decisions labeled as serving the public benefit are often evaluated for their potential for immediate returns; this prioritizes sectors such as mining and construction over agriculture, which has long-term returns. Land is thus revalued primarily in terms of its exchange value rather than its agricultural, cultural, or ecological significance. This exclusion is institutionalized through inadequate environmental impact assessment processes that can marginalize impacted communities – arguably the people treated as barriers to the public benefit, as opposed to being the public who should benefit. This raises urgent questions: what are the determinants of "public benefit"? How can communities influence this determination in ways that do not sacrifice but rather strengthen Jordan's agricultural potential?

- Donor-driven Climate Governance

Climate governance recycles the neocolonial claim that land-based cultivation is incompatible with Jordan's so-called water-scarce environment. Hydroponic systems, inaccurately touted as water-saving, and other "soilless" technologies are promoted as the solution.[192] This sets a profoundly unjust precedent normalizing landless production as an adaptation measure while overlaying structural drivers of scarcity, foremost Israeli water theft. The same actors that finance the Israeli occupation leverage Jordan's impending water crisis as an experimental ground for water-saving technologies.

Greenwashing embeds Israeli relationships within Jordan's agricultural trajectory by advancing initiatives that promote "peacebuilding" via transboundary cooperation on water and natural-resource management. These initiatives conflate Jordan's climate-adaptation responsibilities with adapting to a settler-colonial regime that monopolizes shared water resources and has openly signaled intentions to annex Jordanian territory. In this context, Jordan's agricultural future appears to be undermined by partnerships convened by foreign actors who arguably violate their extraterritorial duty of nonrecognition by treating a violent occupation as a legitimate environmental partner.[193] As a result, Jordanian farmers are left to absorb the environmental risks of the occupation's violations, from settler fires to cross-border water contamination and chronic shortages.

- Dispossession of Agricultural Knowledge

Dispossession reaches the very core of agricultural knowledge. Disinvestment from local supply chains feeds distrust in local inputs of production. For example, without secure land, time, or capital to absorb the risks of experimentation with local seed varieties, farmers are unable to shift their purchasing and cultivation behaviors. This structural dependency can easily be misread as an "awareness gap".

Similarly, disinvestment from IPM – a holistic method that emphasizes biological control, crop rotation, and reduced reliance on chemical pesticides – deepens reliance on imported agrochemicals. FFS that were once useful in providing guidance on IPM have become sites of dispersed

and methodologically ungrounded programs. Knowledge production continues to be isolated from the land; it is instead given to farmers in the form of top-down guidance. At the same time, stringent pesticide-residue tracing required by export markets, such as the EU, can place uneven pressure on farmers in Jordan through supply chain monitoring systems that are often removed from the financial and contextual feasibility of the safety protocols they impose. These same EU actors benefit from legislation that allows them to shirk extraterritorial obligations and export domestically banned agrochemicals to the region.[194] The need to re-localize knowledge of the seed, soil, and agroecosystem thus remains critical.

- Limits and Opportunities of Collective Agency

Fragmentation and market-driven individualism limit farmers' bargaining power; unions and cooperative structures with potential to defuse bottlenecks remain largely unsupported. Without collective representation, farmers incur exorbitant costs, sell below market value, and lack the leverage to influence policies that could mandate manufacturers to purchase from cooperatives at fair prices.

Efforts to formalize small enterprises and promote contract farming are presented as paths to market access. Yet large, highly consolidated industries are unlikely to purchase from small, distant producers due to economic inefficiency. Without unions or cooperatives, these formalization measures risk compounding financial and bureaucratic burdens on small-scale producers rather than improving their market position.

Yet moments of agrarian solidarity emerge to forge an alternate path for Jordan's food systems. For over 23 years, APN, an independently funded and people-led movement, has worked to root 12,000 Jordanian small-scale farmers in their lands through tangible agricultural support and influence food policy on the national and international level, including stopping or relocating investments that threatened agricultural land. APN, alongside other CSOs, has further negotiated with governments on the contents of the Voluntary Guidelines on the Tenure of Lands, Fisheries, and Forests recognizing communal land rights, which Jordan is yet to implement.

It is also critical to center how counter-knowledge persists and evolves in parallel. Interviews with the "Al Barakeh Wheat" project, which works to revive local wheat production alongside farmers, shone light on renewed confidence in local supply chains where farmers were directly provided with heirloom seeds and could witness successful harvests.

Against an isolating neoliberal market system, potential for agrarian solidarity continues to be cultivated. For instance, large-scale persimmon farmers collectively halted imports from the Israeli occupation to the benefit of small-scale farmers. Jordanian seed networks express readiness to support regional food sovereignty movements, including APN's efforts to restore Gaza's agricultural capacities against starvation. Solidarities clearly emerge when struggles are anchored in shared, material injustice, transcending colonial borders.

"Without collective representation, farmers incur exorbitant costs, sell below market value, and lack the leverage to influence policies that could mandate manufacturers to purchase from cooperatives at fair prices."

Fragmentation is never total. Collective agency reappears whenever structural harm is made visible. Food sovereignty requires scaling these solidarities into durable coalitions capable of reclaiming governance over land, water, labor, seeds, inputs, and trade. This is a trajectory of food sovereignty that does not simply prepare Jordan's food systems for impending shocks or crises but rather prevents their re-emergence.

We argue that Jordan has the capacity to shift course by freeing farming practices from monocrop and export-oriented production; engaging the farmer as a knowledgeable, rights-based subject; and honoring their secure presence on the land. These processes must further address the injection of capital and colonial spillovers into Jordan's agricultural systems that undercut the localization of production.

Recommendations

Based on the findings of this study, this section outlines key recommendations that could be implemented by different groups to strengthen food sovereignty and enhance water governance in Jordan.

Crosscutting Recommendations

Participatory Governance and National Ownership

- Reform the "public benefit" framework with a transparent, participatory review of legal criteria for project approvals, centering food sovereignty as a pillar of national development.
- Enhance transparency and accountability in agricultural governance by mandating public disclosure of financing decisions, project criteria, and policy rationales.
- Institutionalize dialogue by establishing a multistakeholder platform for policymakers, food producers, and civil society to deliberate on food policies and programs.
- Vet external projects via inclusive national and community screening mechanisms to ensure donor-driven strategies align with local priorities.

Redress Land and Food System Liberalization

- Assess agricultural liberalization and free market policy impacts to guide reforms that reinstate state protections.
- Restore state support with input subsidies and price controls that shield local food systems from global volatility and exploitative investment.
- Prevent land speculation by mandating safeguards against the commodification of land and other productive resources to protect collective ownership and agricultural resource management.

Collective Organization and Unionization

- Enforce freedom of association with active legal frameworks for specialized cooperatives and unions representing all producer categories (small-scale farmers, agricultural workers, pastoralists, fishers, and food processors) to ensure direct participation in decision-making.
- Strengthen collective organizations to coordinate input procurement, negotiate fair prices, and improve market access.

National Food Systems Roadmap

- Conduct periodic assessments of food demands and nutritional needs to be shared with producers.
- Develop and publish a national cultivation roadmap tailored to soil, water, climate, and market shifts that will:
- expand staple crop cultivation and diversification (e.g., wheat, barley, or alternative staple crops in areas no longer suitable for wheat);
- coordinate seasonal crop planning to prevent oversupply; and
    - promote diversified crop systems to reduce vulnerability to pests, diseases, and shocks.
    - Prioritize local inputs by restricting the export of locally produced pesticides and fertilizers until domestic needs are met, avoiding planting delays and disruptions to seasonal production.

    - Expand the food processing sector horizontally to respond to local producer and consumer needs.

- Promote the consumption of locally produced food and encourage dietary shifts toward traditional, locally sourced products.

- Support locally led agricultural projects and initiatives that restore land and food production systems and drive local employment and development.

Knowledge Production and Agricultural Extension

- Promote locally led research across critical, understudied areas of Jordan's food system, including the relationship between pastoralism and food sovereignty; up-to-date data on grazing capacity; climate change; and the economic viability of locally produced fodder compared to imported feed.

- Revive traditional and collective agricultural practices, such as rainwater harvesting, soil regeneration, pest management techniques, and agricultural waste recycling.

- Strengthen and institutionalize agricultural extension services, particularly for small-scale farmers, through the establishment of specialized entities that provide regular follow-up, technical support, and early intervention. This should include structured communications and regular meetings between agricultural extension officers and farmers to identify and address structural and emerging challenges.

- Facilitate peer-to-peer knowledge exchange across farming and rural communities to strengthen community capacity and support diversified production.

- Update, unify, and enhance transparency of agricultural and census data to align policies with the changing dynamics of Jordan's agricultural landscape. This should include the meaningful involvement of farmers, cooperatives, CSOs, and governorates in data collection and verification.

Protection of Farmers' Rights

- Strengthen coordination between technical experts and lawyers specialized in environmental law to ensure that technical analyses and scientific data are translated into legally admissible evidence for use in litigation on violations impacting agricultural communities.

- Establish a voluntary legal committee operating across all governorates in cooperation with the Jordan Bar Association and relevant CSOs to provide legal support, representation, and authorization for farmers' cases for little or no cost.

Arab Integration

- Promote regional Arab integration grounded in complementarity, mutual food needs, knowledge exchange, and responsible investment, and adopt a rights-based approach that resists normalization of Israeli settler-colonial resource theft and expansion.

Finance

Loan Design, Accessibility, and Risk Protection

- Enhance the effectiveness and scope of the Agricultural Risk Mitigation Fund by amending eligibility, disbursement conditions, and coverage for environmental risks including wildfires.

- Improve access to public financing by simplifying loan requirements, extending grace periods, and introducing phased lending mechanisms linked to monitoring and evaluation.

- Establish public agricultural insurance schemes that protect farmers from loan default to remediate entrenched debt cycles.

Input Affordability and Price Stability

- Strengthen farmers' access to affordable, high-quality, locally produced agricultural inputs (seeds, fertilizers, pesticides) through expanded government exemptions and subsidies, alongside justice-based lending frameworks to reduce reliance on high-cost private financing.

- Increase oversight and accountability of price monitoring mechanisms to reduce farmers' vulnerability to rising costs.

Institutional Coordination and Rights-Based Financing

- Strengthen coordination among public institutions and agencies, including the Central Bank, the ACC, the MOA, and the private sector, to expand and align concessional or interest-free lending for agricultural inputs, well drilling, and water desalination.
- Require donors and financial institutions to redesign financing schemes, including green finance and carbon credit programs, to ensure they are rights- and justice-based, aligned with local agricultural priorities, and fully accessible to small-scale farmers without imposing exclusionary conditionalities.
- Establish adaptive, governorate-based funds to respond to context-specific challenges and agricultural potential. This includes creating employment opportunities; monitoring, evaluating, and adjusting financing priorities; and diversifying crops, including staple crops, to ensure fair returns for farmers.

Participatory Governance and Capacity Building

- Develop a participatory national agricultural financing platform that enables cooperatives and unions to influence financing priorities and policies and consolidates agricultural financing tools and support funds with clear, accessible information on funding amounts, eligibility criteria, and application procedures.
- Invest in capacity building for farmers and their associations through specialized training programs to reduce self-exclusion and improve fund utilization. This should focus on collective procurement coordination, shared financial risk management, loan application, and proposal development.

Land

Land Use Reflective of Agricultural Potential

- Open the revision of land-use maps and classifications to public deliberation and review, including farmers, cooperatives, CSOs, agricultural specialists, and the MOA. As part of this process:
    - embed safeguards to prevent externally driven or colonial-era classifications from determining agricultural potential;
    - clarify the governance structure and agricultural potential of public lands vested in the state and JVA; and
    - align national agricultural strategies with revised land-use classifications that reflect Jordan's climate and agricultural diversity.
- Strengthen and develop natural rangelands as a primary source of local feed production to reduce reliance on imported feed.

Protection and Restoration of Agricultural Land

- Protect agricultural and rainfed land through coordinated legal and policy measures across all relevant bodies – addressing interconnected pressures such as urbanization, plot fragmentation, competition with other economic sectors, and desertification – supported by an integrated, transparent monitoring system to report and redress land-use violations.
- Support the rehabilitation and equitable redistribution of uncultivated or salinity-affected lands through national programs that prioritize soil recovery and cultivation of crops suited to local environmental conditions (e.g., olives and jujube).
- Adopt traditional and collective rangeland management, including the Hima system, which has been used historically in Jordan to regulate seasonal grazing and restore vegetation cover.

Tenure Rights and Security

- Recognize and formalize all forms of land tenure rights through equitable and just protections (including the review of leases with the JVA), particularly for those on rehabilitated lands, ensuring clear contract durations to protect farmers from sudden and unjustified loss of tenure.
- Review and revise real estate ownership legislation to:
    - protect communal ownership against its privatization and targeted dissolution;

  - redress constitutional violations that allow land expropriations without compensation; and
  - amend laws that enable foreign land purchases that inflate prices and serve external interests over national food sovereignty.
- Mandate public disclosure of all decisions and projects affecting or expropriating agricultural land, including clear evidence of "public benefit", consideration of alternatives, alignment with food security and land-use planning, and communications in plain language accessible to affected communities.
- Strengthen legal mechanisms to protect farmers' rights, including enabling them to file collective and individual lawsuits as a key tool for accountability and safeguarding their rights in cases of land expropriation, land-use change, and damage to livelihoods.

Awareness and Capacity Building

- Address information gaps on land rights, agricultural land conservation, and rural housing regulations by establishing accessible awareness and extension programs for farmers and agricultural workers.
- Strengthen community-based monitoring, mapping, and documentation initiatives to counter gaps in official data and land classification systems.
- Integrate local Bedouin knowledge into planning policies and regulated grazing practices, thereby contributing to enhanced food security and climate change adaptation.

Water

Transboundary Water Justice and Coordination

- Strengthen regional cooperation by reviewing the status of joint water agreements with neighboring Arab countries to improve management of transboundary water resources and by encouraging exchange of expertise.
- Encourage investment in national and regional water projects with Arab countries, instead of agreements or projects with the Israeli occupation, to ensure water security and national sovereignty.
- Secure Jordan's water rights, especially those violated by the Israeli occupation, by revisiting administrative and diplomatic decisions that enabled the appropriation of Jordan's fair share of surface and groundwater resources, and develop national plans for restoring and utilizing the waters of the Baqoura and Ghumar area and the Jordan River basin.

Equitable and Participatory Governance

- Adopt integrated water management policies that clearly define the roles and coordination mechanisms between government agencies, the private sector, WUAs, and farmers in ensuring equitable water distribution and access as well as institutional accountability.
- Reform regulations for accessing groundwater sources by lowering well-drilling fees and easing licensing requirements for small-scale farmers, and shift away from approaches that revoke farmers' water access toward measures that support them with alternative solutions.
- Establish or strengthen national co-governance platforms that allow farmers at all scales a voice in high-level irrigation planning and decision-making.
- Activate and reform existing local water co-management processes to ensure responsiveness to power asymmetries between large- and small-scale farmers (such as within WUAs), and activate feedback and complaint mechanisms.
- Review and adjust current metrics of water-use efficiency and associated water tariffs to avoid discouraging small-scale agriculture and staple crop diversification.
- Publish clear and accessible data on water allocations, distribution schedules, and stock levels to enhance farmers' capacity to plan and adapt.

Water-Use Efficiency, Infrastructure, and Nonconventional Supply

- Advance strategic national projects, such as the National Water Carrier, to secure additional water sources for small-scale farmers and

reduce competition between industrial, urban, and agricultural water uses.

- Strengthen urban water management legislation by mandating rainwater harvesting systems in new buildings and regulating the construction of ponds and cisterns, enhancing groundwater renewal and protecting irrigation water supply.
- Rehabilitate national water networks to minimize water losses and optimize resource utilization.
- Support small-scale farmers by rehabilitating drip irrigation systems and installing on-farm water harvesting and storage infrastructure for small-scale farmers.
- Conduct participatory, applied research on water-saving and harvesting technologies to evaluate traditional and modern approaches to ensure locally informed and economically viable solutions.
- Expand and upgrade wastewater treatment infrastructure, ensuring that more households are connected to sewage networks and improving treatment quality to maximize reuse in agriculture.
- Increase the number of dams to collect a larger amount of rainwater and enhance oversight on water quality in existing dams used for irrigation to reduce negative impacts on soil and sensitive crop varieties.
- Establish national policies to invest in the desalination of brackish groundwater, including decentralized small-scale projects.
- Subsidize electricity costs for small-scale farmers through electricity bill subsidies and support for solar-powered water pumps to reduce energy burdens, avoid electricity cut-offs, and ensure reliable irrigation.
- Evaluate and adopt locally suitable agricultural technologies that are easily accessible to farmers and aligned with environmental needs to increase water-use efficiency.

Seeds

Seed Regulation and Governance

- Strengthen government oversight of imported seeds and seedlings by enforcing rigorous testing, precautionary sample retention, and transparency requirements, while curbing foreign lobbying that weakens biosafety and quality control.
- Localize seed production chains to improve small farmers' access to affordable, nationally developed alternatives by supporting the experimentation, preservation, and development of local heirloom and hybrid seed varieties, regulating seed prices, and incentivizing local seed production for the domestic market.
- Establish participatory decentralized or community-owned seed banks in rural areas that smallholder farmers have access to.

Farmer Rights and Accountability

- Strengthen collective legal mechanisms that enable farmers to pursue claims against suppliers, address knowledge gaps in legal avenues, and expand insurance compensation mechanisms based on successful regional experiences.

Crop Rotation, Soil Health, and Climate Resilience

- Implement and institutionalize incentivized crop rotation programs on irrigated and rainfed lands (private and state), including wheat or barley at least once every four years, guided by governorate-specific guidance on seed suitability and soil health.
- Promote the cultivation of drought-resistant and climate-resilient crops (e.g., quinoa and sorghum) to enhance agricultural diversity.

Strengthen Local Cereal and Staple Crop Systems

- Strengthen local wheat production by supporting fair producer prices, supplying bread-suitable and high-yield local varieties (e.g., durum), and mandating a minimum proportion of durum wheat in mills, which provides higher nutritional value than the refined common wheat currently dominating consumption. This should be supported by ensuring processing and milling capacity for durum wheat.
- Encourage the consumption of local cereal

grains and traditional products (e.g., freekeh, jareesh, and maftoul) to reduce dependence on imported rice and bread.

Research and Extension Support

- Provide targeted agricultural extension services that make agroecological knowledge accessible, guiding farmers in selecting appropriate seed varieties and farming practices suited to local ecological and market conditions.
- Strengthen links between farmers, universities, and research institutions to support the development, testing, and dissemination of locally adapted crop varieties.
- Encourage scientific research on trade-offs between short and long wheat varieties to optimize both grain productivity and straw yield.

Fertilizers and Pesticides

Regulation, Quality, and Market Oversight

- Review and enforce import standards and licensing requirements for agrochemicals, including quality control testing at entry points and maintaining a public registry of approved suppliers and products.
- Implement price monitoring and regulation and provide subsidies for locally produced fertilizers and pesticides.
- Conduct regular market inspections and sampling of pesticide residues, particularly within the Central Market.
- Conduct awareness campaigns to improve knowledge of certified and safe products for farmers, retailers, and consumers.
- Develop and reform legal and regulatory frameworks for local production of organic and biobased fertilizers and pesticides to ensure quality and safety, and update regulations and legislation related to the import of such fertilizers to allow the approval of new products, boost production, and reduce costs.

Sustainable Agricultural Practices

- Invest in and encourage the national production of organic agricultural inputs, including organic pesticides and recycling organic agricultural waste – including farm residues and central markets and household waste – into compost, peat, and treated poultry manure.
- Strengthen communication and coordination mechanisms between farmers and the MOA to deliver timely, need-based extension services, including regular on-farm visits, coordinated spraying during pest outbreaks, and the provision of natural pest control solutions.
- Clarify and regulate the role of private companies in pest diagnosis and agricultural support to ensure they complement rather than replace public extension services.
- Institutionalize FFS and IPM, providing accessible and affordable certification to strengthen farmers' capacity in pest and disease diagnosis, IPM application, and compliance with quality and safety standards.
- Strengthen partnerships with Jordanian research centers, including the National Center for Agricultural Research, to conduct applied studies on plant disease reduction and implement targeted capacity-building programs.

Labor

Rights-based Safeguards

- Activate, enforce, and strengthen Agricultural Workers' Regulation No. (19) of 2021 to redress inconsistencies that weaken legal safeguards for all categories of agricultural workers (formal, informal, and seasonal), including women and migrants, ensuring fair wages, safe and reliable transportation, regulated working hours, occupational health and safety protections, and sanitary facilities.
- Review and modify National Aid Fund criteria to ensure those accessing social security provisions or in need of welfare assistance are not disqualified, thus encouraging enrollment in social security.
- Review and modify social security criteria to ensure agricultural workers have full access to benefits, as insurance for agricultural workers is currently restricted to maternity leave and work-related injury. Support these measures with awareness campaigns on registration and

entitlements.

- Ensure state subsidization and provide incentives for smallholder farmers to implement health and safety regulations for all agricultural workers.

Unionization and Collective Representation

- Uphold constitutional guarantees that protect the formation of free trade unions, as well as the International Labour Organization's Convention No. 87 on freedom of association and collective bargaining, by formalizing worker unions.

- Strengthen existing worker networks and establish participatory forums to enhance solidarity, representation, and advocacy-experience exchange among agricultural workers.

- Strengthen independent unions and CSOs to support agricultural workers in accessing justice, including through legal support, labor rights monitoring, advocacy, and training agricultural workers in accessing the Ministry of Labor's complaint platforms.

Food Processing

Strategic Guidance and Market Alignment

- Reorient food processing policies and strategies to prioritize domestic market demand, including crop selection guides and planting schedules for value-added production, while ensuring such strategies can respond to producers' varying socio-economic circumstances, increase employment, and ensure equitable producer prices.

Support for Small-scale and Community-led Processing

- Allocate public funding and targeted incentives to establish or upgrade small-scale, community- and women-led agro-processing facilities – such as drying, pickling, preserving, citrus flower distillation, and packaging and handling – while ensuring access to land, water, and energy.

- Develop affordable, cooperative-managed storage and cooling infrastructure near cultivation sites, including temperature-controlled transport, to reduce post-harvest losses and support producers in timing their market entrance.

- Direct state support to small producer associations, cooperatives, and unions and facilitate fair procurement agreements and partnerships between them and processing facilities to improve their access to value-added markets and reinforce horizontal production chains.

- Strengthen screening of and community and local expert oversight over foreign and state-led projects in the processing sector to ensure they accurately respond to local needs and challenges.

- Support initiatives by rural households and CSOs, including in the Badia region,[195] to produce and process local food products and connect them with short value chains that deliver direct benefits to communities.

Market Access and Trade

Safeguard Local Food Systems

- Protect local agricultural products and farmers from the negative effects of free trade liberalization by establishing import regulations to prevent foreign competition and market saturation that undermine local crop production, particularly during peak cultivation periods; implementing antidumping measures; and providing incentives that favor domestic production over imports.

- Adopt procurement policies that require public and private institutions, as well as food assistance providers, to prioritize sourcing food from local producers or by setting a minimum quota.

Central Market Reform and Alternative Market Pathways

- Ensure an inclusive, nationally owned process of Amman Central Market reform, including addressing bottlenecks, distrust between farm and market actors, and predatory lending, while implementing enhanced transparency, participatory governance across farmer and producer bodies, fair pricing mechanisms (e.g., based on weight rather than packaging), and

supply chain traceability.

- Study the effectiveness of reactivating the Amman Central Market auction system to ensure the availability of transparent and up-to-date information on agricultural product prices for all parties, enabling farmers to make informed production decisions based on market realities and reducing the pricing dominance of intermediaries.

- Implement cooperative-led transport initiatives to support farmers' access to the central market through cost-sharing mechanisms that alleviate prohibitive transportation costs.

- Develop alternative market pathways – such as e-commerce platforms, farmer-managed outlets, and direct-to-consumer channels – to strengthen producer connections and support cooperative-led distribution.

- Reinstitute the national Agricultural Marketing Board to provide farmers with guidance and facilitate access to outlets for their products in domestic and regional markets.

Promoting Local Products and Traditional Diets

- Conduct public consumer awareness campaigns through media and educational channels highlighting the value of local products and traditional diets to drive consumer demand and support domestic agriculture.

- Build trust in local value-added products, such as honey, by ensuring up-to-date national traceability and quality control mechanisms (including specifications and standards and testing equipment) that are coordinated with and accessible to producer associations, while enhancing screening processes to prevent false marketing of imported products as "local".

- Encourage youth engagement in the agricultural sector by aligning academic curricula with labor market needs; offering institutional incentives; strengthening pathways from education to employment; and promoting awareness of the social, economic, and strategic value of working in agriculture.

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195 The Badia region constitutes 80% of Jordan’s land area and is home to pastoral and agro-pastoral communities that rely heavily on rangelands and livestock for their livelihoods.



A scene from the central Gaza Strip during the olive harvest and heritage activities marking the start of the olive-picking season, October 2022. © Abed Rahim Khatib.

Palestine

The Role of Palestinian Civil Society Organizations in Food Sovereignty

Abdalaziz Alsalehi

Introduction

Within the framework of the Palestinian Environmental NGOs Network (PENGON) and in cooperation with the Arab Reform Initiative (ARI), this study includes a set of objectives aimed at strengthening core concepts at the Palestinian level, namely food sovereignty, climate justice, and a just environmental transition. To this end, the research team carried out a mapping of active civil society organizations (CSOs) working on food sovereignty across Palestine. In addition, this study provides an explanation and an understanding of the relationship between CSOs and policymakers in occupied Palestine and the challenges they face when confronting Israeli occupation, in order to develop participatory approaches that promote good governance, accountability, and impartial transformation processes.

The study also addresses the reality of the agricultural sector under colonial policies, in addition to studying the economic and political dimensions associated with controlling local resources. The research plan also includes topics related to contemporary challenges, especially after the events of 7 October 2023, and their impact on food security.

This study is important because it serves as a tool for building alliances that implement strategic interventions with various Palestinian and regional NGOs; it analyzes how Palestinian civil society and policymakers understand the concept of just environmental transformation; and it proposes possible steps to entrench the concepts of governance, environmental justice, and sustainability in environmental policies.

Methodology

The study relies on a composite methodology: The first part is exploratory, surveying NGOs active in food sovereignty, while the second part is descriptive and explanatory, analyzing the reality of governance, accountability, sustainability, and related policies. In addition, it studies the reality of food sovereignty in Palestine and interprets the relationships that influence it. Data were collected through 30 in-depth individual interviews in the West Bank and Gaza Strip, mostly face-to-face and some via video conferencing.

In collecting primary data for the mapping of organizations, the researcher relied on the Palestinian Ministry of Interior's data on NGOs registered in the agriculture and environment sectors, as well as research and community-based organizations working in the field of food security and food sovereignty. The team also distributed an electronic questionnaire to 30 of the 208 organizations for the purpose of measuring specific relationship indicators between relevant variables.

Studying food sovereignty in a colonial context, the researcher used qualitative tools through in-depth individual interviews with actors in the agricultural and food sector, including the Ministry of Agriculture, the Union of Agricultural Work Committees (UAWC), the Palestinian Federation of Food and Agricultural Industries, the Ma'an Development Center, PENGON, the Youth Partnership Forum, the Agricultural Development Association (PARC), the Coalition of Palestinian Agricultural Institutions, the Urban Agriculture Forum, and other organizations and activists. The researcher also developed quantitative and qualitative measurement indicators that were included in the interview questionnaire.

The Concept of Palestinian Food Sovereignty

The 1996 World Food Summit defined food security as the ability of people at all times to have physical and economic access to sufficient, safe, and nutritious food that meets their nutritional needs and food choices that enable them to lead active and healthy lives.[1] In fact, since 1974, the UN and its international agencies, such as the World Food Programme (WFP) and the Food and Agriculture Organization of the United Nations (FAO), have embraced the concept of food security as the dominant framework for international policy in this area.[2]

La Via Campesina, a transnational umbrella for peasant organizations around the world, defines food sovereignty differently: every country has the right to maintain and develop its capacity to produce its own staple foods, respecting cultural and productive diversity.[3] This definition was put forward by farmers' social movements at the 1996 World Food Summit, one year after the creation of the World Trade Organization (WTO). The concept was put forward as an alternative to neoliberal policies and a more effective tool to fight against hunger and capitalist domination in globalized trade and agricultural systems.[4] Since then, a food sovereignty school of thought developed as opposed to the food security school. The food sovereignty school emerged as an oppositional concept to global neoliberalism in agriculture in the late 20th century. It challenges the hegemony of corporations that prioritize profit over people, while simultaneously emphasizing the need to reshape food systems that respect local traditions, the environment, and human rights.[5]

Although the fundamental difference between food sovereignty and food security is clear, they are often confused in many societal contexts.[6] The difference is that food security focuses on the ability to purchase food and make it readily available to citizens, while food sovereignty means autonomy and the ability to exercise full control over all aspects of the food system, according to the state's needs and traditions. Sovereignty means that the state controls its agricultural and commercial decisions based on its national interests, free from dependence on others.[7]

Many studies have addressed the issue of food sovereignty within the Palestinian context, indicating that it can be achieved through political and social will, even under occupation. Some of these studies have identified key elements of food sovereignty, including food self-sufficiency, the right to determine production and consumption patterns, and ensuring the well-being of both farmers and consumers. These studies emphasize the need for access to healthy, high-quality food in line with local heritage and culture, maintaining a balance between agriculture and industry, as well as between rural and urban areas, and ending resource domination by commercial companies and agents. The importance of prioritizing support for small-scale producers, farmers, and cooperatives, and combating chemical processing and genetically modified products is also highlighted.[8]

Near-consensus emerged from field interviews that the idea of "food security" has been widely criticized as inadequate, and even as masking relations of dependency and vulnerability.[9] When food aid is provided in an emergency context (as in Gaza) without empowering communities to produce their own food, this relationship turns into indirect slavery; people remain dependent on others for their sustenance, without any real capacity for independence.[10]

The question of food sovereignty in the Palestinian context is a complex issue related to the nature of the concept of "sovereignty" under colonialism, and questions the possibility of achieving food sovereignty while under occupation, where resources and production inputs are controlled. This debate brings us back to the essence of the definition of food sovereignty as "the right to determine policies and the ability to produce and develop basic foods in accordance with the cultural and productive characteristics of society". Despite the absence of a Palestinian state and the occupation's continued theft of land, water, and agricultural inputs, Palestinians still have room to maneuver by developing and enhancing their food production and seeking to disengage from the Israeli market by moving away from dependence on its economic system, or what is known as the "steadfast economy".[11]

In light of the escalation of occupation policies, this study argues that food sovereignty is not just a possible option, but an urgent national necessity. The bet today is on building a resistant economy that would minimize dependence on the occupation

> **When food aid is provided in an emergency context (as in Gaza) without empowering communities to produce their own food, this relationship turns into indirect slavery; people remain dependent on others for their sustenance, without any real capacity for independence.**

and large monopolistic companies. The goal is not limited to adapting to the status quo: emphasis is placed on strengthening the steadfastness of farmers and society, as part of projecting liberation and recovering stolen resources. Hence, the role of individuals is not limited to owning the means of production but extends to adopting consumption patterns that support small farmers and local producers who contribute to sustainable agriculture. Believing in the idea of food sovereignty and practicing it on a daily basis, whether in production or consumption, are practical steps towards materializing this concept.

According to researcher George Karzem, the concept of food sovereignty is based on seven interrelated principles: (1) food as a basic human right; (2) local food self-sufficiency; (3) equitable land reform and redistribution of resources favoring small farmers; (4) sustainability and biodiversity; (5) support for local food systems and reduced dependence on global markets; (6) rejection of industrial agriculture based on genetic engineering and chemicals; and (7) participatory governance to ensure poor and marginalized groups partake in food decisions.[12] Karzem has developed a set of elements that should constitute a starting point when thinking about food sovereignty in occupied Palestine under the colonial context.[13]

Table 1: Dimensions of National Food Sovereignty

Axis	Dimensions
Economic	Achieving food self-sufficiency through local production. Taking into account the benefit of all parties: farmers and consumers. Smallholder farmer, cooperative, or public sector food production, with fair pricing.
Socio-political	The right of individuals to determine their own dietary patterns, accounting for rural diversity. Confronting international commercial hegemony and monopolistic seed control. Restoring balance between countryside and city. Combating commodity dumping from foreign and Israeli companies. Reviving traditional agricultural techniques and local knowledge.
Health	Producing healthy food that is compatible with local heritage and culture, and avoiding exotic foods.
Ecological	The rejection of intensive industrialized agriculture, genetic engineering, and excessive chemical use.

These themes emerge as a set of main headings that can be described as the pillars of national food sovereignty in Palestine: the right to produce, ecological agriculture, water harvesting, indigenous seeds, and consumer responsibility.

The Right to Produce

The food production crisis in occupied Palestine, especially agricultural production, is represented by the colonizer's control over Palestinian land, water, and production inputs that limit the realization of food sovereignty. The Palestinian trade balance also suffers from a severe deficit, with imports amounting to about US$6 billion compared to exports of only US$0.5 billion (12 times higher).[14]

A trade deficit is not unusual in itself, but its seriousness in the Palestinian case lies in its nature and source; it is a worsening structural deficit caused mainly by the import of basic consumer goods that do not contribute to the development of local production. In this way, the deficit becomes a factor that deepens economic dependence rather than contributing to development and strengthening productive capacity.

The data show that allocations for the development and support of the agricultural sector are severely limited, causing its continuous decline year after year. This is especially evident in the livestock sector, where issues with sheep and cattle breeding have worsened, and red meat prices have risen sharply, prompting the private sector to resort to imports. Although imports may alleviate the crisis temporarily, they have negative long-term effects. The reliance on them causes a decline in local production and a decrease in the number of livestock, further weakening the agricultural sector without actually lowering consumer prices. This crisis persists in composite form: declining production without market stabilization.

There are periods when Palestinians reach self-sufficiency in some types of vegetables, but this abundance is seasonal and temporary. For the rest of the year, they resort to imports, which causes significant increases in price during times of low local production.[15]

The dependence on imports is a structural obstacle to the development of agricultural production, which is exacerbated by the Israeli occupation imposing severe restrictions on access to land and

> The dependence on imports is a structural obstacle to the development of agricultural production, which is exacerbated by the Israeli occupation imposing severe restrictions on access to land and resources, which impacts agriculture more severely than any other sector.

resources, which impacts agriculture more severely than any other sector. The lack of government investment in local production, over successive budgets, reflects a chronic neglect compounded by occupation-imposed financial, political, and security constraints.[16]

Ecological Agriculture

For several reasons, experts believe that ecological agriculture is more economical than chemical agriculture. First, it does not rely on chemicals, which in traditional agriculture constitute a large percentage of the costs, which may reach 30% or 40% of total expenses, depending on the region.[17] An agroecological system is cost-effective because it is independent of external inputs and consumes less water, which reduces operational expenses. Agricultural diversification is an element of economic security as it limits losses when the production of one crop declines. By contrast, monoculture is prone to losses and recurring market vulnerability, as seen in cases of surplus production and price collapse for crops such as cucumbers, tomatoes, and eggplants.[18] In ecological farming, diversification within the farm, along with the stability of product quality, ensures the continuity of profit and minimizes price fluctuations, giving it a real and sustainable economic advantage.[19]

Hydroponic Harvesting

Palestinians can rely on traditional water harvesting mechanisms that have been practiced for hundreds of years. The current increase in water harvesting projects is important, as the sector is witnessing a significant expansion in the construction of dams in the eastern parts of the West Bank, such as Wadi al-Auja, Wadi al-Faraa, and Wadi al-Maleh.[20] Water harvesting is limited to collecting rainwater through these dams, but faces great challenges due to the restrictions and obstacles imposed by the Israeli occupation, which limits development possibilities for this vital sector.[21] One of the most prominent and widely used Palestinian agricultural practices is the construction of collection wells and water ponds.[22] They are used to collect rainwater and store it for use during dry periods. Other modern water harvesting techniques exist in theory but are, unfortunately, not commonly deployed in practice. Four dams have been built in the West Bank to support water harvesting, but these have not been successful and arguably have had a limited impact.[23]

It is sometimes claimed that ecological farming consumes more water than monoculture, but this claim lacks scientific evidence. According to several studies, ecological agriculture adopts methods that conserve soil and reduce evaporation, making it more water-efficient. Research indicates that it can consume between 50% and 80% less water, and, in some cases, the need is reduced altogether.[24] The contrary claim is likely due to misconceptions or misunderstandings about the nature of ecological agriculture. Mainly, it is based on practices such as soil covering, intercropping, and reducing evaporation, which all contribute to rationalizing rather than increasing water consumption.[25]

Indigenous Seeds

Indigenous seeds are a cornerstone of food sovereignty, as they can be reproduced and used locally without relying on hybrid or genetically modified seeds. However, the proliferation of hybrid and imported seeds dominates the Palestinian market today. Commercial companies often promote chemical farming, while indigenous seed production remains limited, and the number of commercial producers is very small.[26] There are still no companies involved in the production or commercialization of indigenous seeds, so their use remains largely confined to farmers who keep them for self-consumption or exchange them within small, local networks. This poses a major challenge to promoting food sovereignty and reliance on local resources.[27]

Experts point out that indigenous seed production is low-cost. Each farmer can produce their own seeds from the previous season without buying new ones, making it an economical option and promoting food sovereignty. Hydroponic harvesting techniques, such as ponds or collection wells, are relatively expensive due to their reliance on labor or heavy equipment. This makes them more expensive in Palestine, compared to other countries. However, investment in them remains important, particularly in the face of long-term water crises.[28]

An indigenous seed bank union was first established in 2003, the culmination of more than 10 years of effort in the field. The seed bank has made significant progress in agriculture in the southern parts of the West Bank (Hebron and Bethlehem) and the Gaza Strip, where agriculture is largely rain-fed, making indigenous seeds best suited for production. These seeds are non-GMO (genetically modified organism) and naturally selected, and are offered at nominal prices to smallholder and women farmers in Palestine.[29] The Hebron Indigenous Seed Bank contains about 40 varieties of multiplied and preserved indigenous vegetables, in addition to new varieties of medicinal and wild herbs that farmers supply to the seed bank union to preserve and produce them as a national heritage.[30]

PARC established an indigenous seed bank in the village of al-Khader in 2010, an extension of the indigenous seed development program it had started in 1992. The Ma'an Development Center established a seed bank in Marda/Salfit in 1993, but it was destroyed by the occupation army in 2001. The Applied Research Institute – Jerusalem (ARIJ) had a program to develop indigenous seeds for field crops such as wheat, barley, and legumes.[31]

Vivien Sansour named her initiative the Palestine Heirloom Seed Library. Similarly, Saad Dagher started the Popular Bank for Indigenous Seeds in Bani Zeid al-Sharqiya to increase the production of indigenous seeds and distribute them free of charge to farmers.[32]

Colonial Context and Food Control in Occupied Palestine

Before the displacement of Palestinians in 1948, the number of agricultural workers and wage earners amounted to about 550,000, or 55% of the total population.[33] Legal researcher Rabea Eghbariah documented a set of Israeli laws enacted by the occupation in the early stages of the Zionist colonization of Palestine. He focused on laws that deprived Palestinians of their agricultural, plant, and animal practices, which restricted their work in a variety of ways. Most notably, the "Plant Protection – Goat Damage" law of 1950, also known as the "Black Goat Law", banned the raising of Palestinian black goats on environmental grounds, while the goats on settler farms were white. In practice, these laws aimed to impose a Zionist production mode in animal husbandry that serves settlers, replacing local production and bringing Palestinian land under the control of this consumption pattern.[34]

In 1976, the "Green Patrol" was formed. It was known for its brutal application of the Black Goat Law in the Negev, which was accompanied by many human rights violations.[35] The Israeli courts and the laws of the occupying state even went after akkoub and thyme, using food and nature as tools to control Palestinians. This form of colonization sought to sever the relationship between Palestinians and their land and identity, on the one hand, and to hand the land and its resources over to the occupation, on the other.[36] In 2005, Ariel Sharon, then Israeli Prime Minister and Minister of Agriculture, amended the list of "protected plants" to include the akkoub, a thorny seasonal plant commonly found in the Battuf, Negev, and Nablus regions in particular; once its thorns are removed, it is served as a popular Palestinian dish.[37]

Eghbariah documents these examples as part of the

occupation's comprehensive war on Palestinians and their agricultural production, targeting both physical and cultural dimensions. Picking thyme and akkoub has become a crime for which dozens of Palestinians are fined annually. These policies also reveal a long-term structural impact on Palestinian food, as the new generation loses its foundation for independent national food production.

In parallel with the occupation's war on indigenous Palestinian crops and the wider agricultural sector, both animal and plant-based, the economic policies of the occupation, from the declaration of its establishment in 1948 until the mid-1950s, were clearly biased towards agriculture. Most of the investment spending in the general budget was directed towards agricultural projects, agricultural manufacturing, and water projects, reflecting the occupation's tendency to expand agriculture into occupied Palestine.[38] This issue must be seen in its wider dimensions: the occupation controls 85% of the area of historic Palestine.[39]

Post-Oslo Transformations

After the establishment of the Palestinian Authority (PA) and the signing of the Oslo Accords, the land was classified into Areas A, B, and C to tighten control over Palestinian lands. This is especially true of the 3,375,000 dunums of Area C, where about 2,642,000 dunums are directly exploited by the "Israeli" occupation, which constitutes 76.3% of Area C.[40] Settlement regional councils control 63% of Area C. The reported area of influence of Israeli settlements (including those closed areas allocated for settlement expansion) reached about 542 km² at the end of 2021, representing about 10% of the area of the West Bank. The areas confiscated for military bases and military training sites represent about 18% of the area of the West Bank. In addition, the Annexation and Expansion Wall, which isolated more than 10% of the West Bank area, affected more than 219 Palestinian communities. Since 1967, the Israeli occupation authorities have confiscated about 353,000 dunums of Palestinian land and, in preparation for their seizure, classified them as nature reserves.[41] Area A is about 1 million dunums, Area B is about 1,035,000 dunums, and the area classified as "other" is about 250,000 dunums and includes nature reserves and H1 and H2 in Hebron, as defined by the Hebron Protocol. In 2018, the Israeli occupation approved the confiscation of about 508 dunums of Palestinian lands, in addition to the seizure of hundreds of dunums belonging to Palestinians by expanding Israeli checkpoints and establishing military posts that protect Israeli settlers.[42]

In addition, the occupation controls water resources in historic Palestine. The occupation's disregard for international laws is also revealed when Palestinian per capita water consumption is compared to Israeli per capita consumption, which, at approximately 300 liters per day, is three times that of Palestinians; for Israeli settlers, it is more than seven times higher.[43] According to a B'Tselem report, settlements consume between 100 and 230 liters per day. Mekorot, Israel's national water company, reports that settler consumption exceeds that of Palestinians, reaching almost three times their daily consumption.[44]

Before 7 October 2023, the Israeli occupation denied Gazans access to a buffer zone more than 1,500 meters wide along the eastern border of the Gaza Strip, giving Israel control of about 24% of the Gaza Strip's 365 km².[45] Moreover, during successive wars on the besieged Gaza Strip from 2008 to 2014, with continuous attacks to this day, vast agricultural areas estimated at 50,000,000 dunums and 34,500 dunums, respectively, were devastated, with the near-total destruction of infrastructure, irrigation networks, and agricultural wells, and nearly 75% of Gaza's agricultural lands. They were targeted more than once, especially within the boundaries of the area known as the "restricted access area". In addition, the agricultural sector has been battered in several other ways, most notably by spraying chemical pesticides and opening dams located east of the Gaza Strip to flood agricultural lands. In January 2020, 2,000 dunums of vegetable crops were destroyed as a result of spraying. The Ministry of Agriculture estimates that losses amounted to US$1.25 million. The Ministry of Agriculture also reported losses over the same period caused by dams being opened, estimated at US$0.5 million, which destroyed 920 dunums of planted vegetables.[46] Now, it is impossible to say with certainty what the future losses are for the Gaza Strip, and what the financial, agricultural, health, and educational sectors need after the 7 October genocide of civilians. Until the war ends, interventions at all levels will need to be assessed.

Food Sovereignty in Palestinian National Policies

The PA, the Palestinian private sector, and NGOs are involved in the food security system at different levels. Before delving into which NGOs are active in terms of food sovereignty, it must be recalled that food-related issues are primarily and naturally a matter of the agricultural sector, both plant and animal. Each sector (governmental, private, and NGO) includes a range of organizations that directly intersect with the agrifood sector.

The Palestinian Government Sector and the Food File

The Ministry of Agriculture is the main body responsible for formulating policies and strategies related to food.[47] There are a number of ministries working on policies for the development of the agrifood sector in Palestine. The Ministry of Agriculture works closely with the Ministry of National Economy, the Ministry of Labor, the Ministry of Local Government, the Water Authority, and the Environmental Quality Authority as governmental bodies under the PA,[48] in addition to the Agricultural Credit Fund, the Risk Prevention Fund, and the Cooperative Work Agency as supporting bodies.

It can be said that food-related policies in occupied Palestine are based on a strategic plan developed by the government, in addition to complementary strategies developed by CSOs.[49] These strategies are integrated with the overall government strategy and identify a set of different interventions in the agricultural and environmental sector for implementation.[50]

Some believe that official bodies, most notably the Ministries of Agriculture and National Economy, are making efforts to develop food policies, but these policies remain mostly general and abstract, as the term food security is used without scrutinizing its connotations or implementation mechanisms. They focus on "availability" and "access" to food without sufficiently addressing production and its technical and procedural implementation methods.[51]

Some respondents point to the absence of clear, organized national food policies, whether at the level of production or import and export, or areas that are subject to the Paris Protocol, which restricts the movement of the Palestinian market and prevents the building of an independent food policy.[52] The National Council for Food Security suffers from a lack of actual tools to implement integrated policies due to political and structural constraints imposed by the occupation and other internal realities.[53]

Lack of Effectiveness in National Policies

Since the establishment of the Zionist entity, the main issue in accessing and utilizing resources lies in the occupation and its policies towards Palestinians and their resources in the West Bank and the Gaza Strip. However, Palestinian policymakers also have a great responsibility, as their program was supposed to focus on steadfastness until a political solution is achieved that guarantees an independent state. In 2019, UAWC showed that the contribution of the agricultural sector to GDP declined from 36% in the 1970s to about 25% in the 1980s, then to about 13% in the early 1990s. This decline continued further to 8.2% in 2000, 6.1% in 2009, and 3% in 2017.[54] It is also important to highlight the continued drop in the proportion of workers employed in agriculture, going from 14% in 2010 to just 6.7% in 2017.[55] Agricultural activity has also recorded the lowest average real daily wage at 89 new Israeli shekels (NIS) in the West Bank and NIS 22 in the Gaza Strip.[56] This indicates that Palestinian agricultural production, both plant and animal, has declined, meaning that there is a change in the type of food and its value for current and future generations.

In addition, the agricultural sector does not receive a large budget in terms of spending by the Palestinian government, nor does the government emphasize it as a key sector. Table 2 shows government spending allocated to the Ministry of Agriculture for 2019-2024, based on Ministry of Finance statements.

Table 2: The Share of the Ministry of Agriculture in Total Spending from 2019 to 2024

Year	Total Spending (million NIS†)	Share of Total Budget (%)
2019	158,420	0.96%
2020	139,014	0.87%
2021 (as of Nov.)	142,575	0.88%
2022	153,300	0.90%
2023	156,100	0.87%
2024	118,200	0.67%

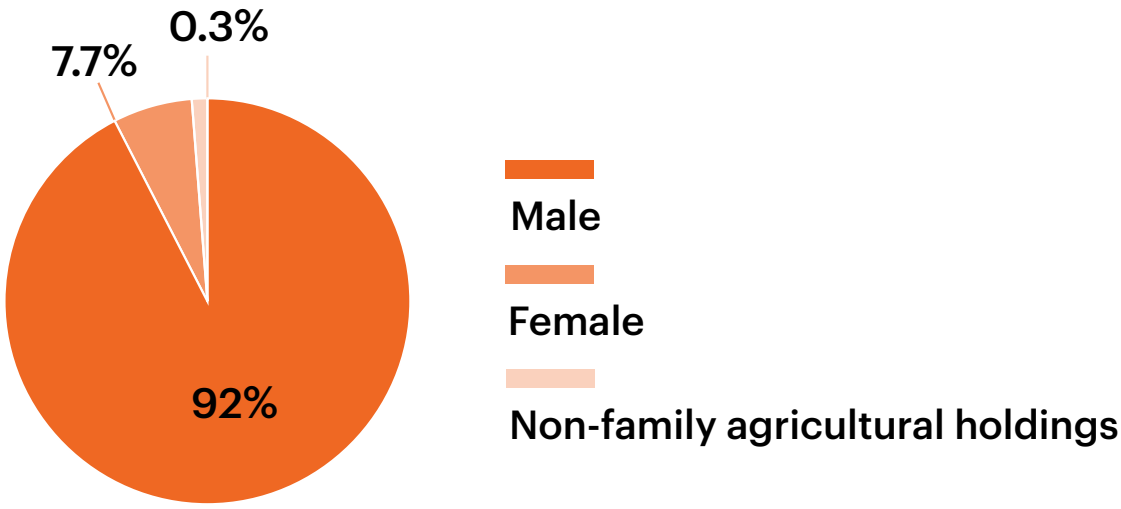
Note. From the annual government spending reports for the years 2019 through 2024 published on the Palestinian Ministry of Finance website.

† NIS = new Israeli shekels.

The budget allocated to the agriculture sector reflects chronic underinvestment. Investment in the sector is declining due to the associated risks, especially in light of the absence of protection funds for smallholder farmers. Similarly, the budget allocated to the Environmental Quality Authority does not exceed 0.10% of the total public budget.[57] All of this puts the greatest burden on NGOs to work more extensively in the agricultural sector, especially when necessary resources from the competent authorities are absent.

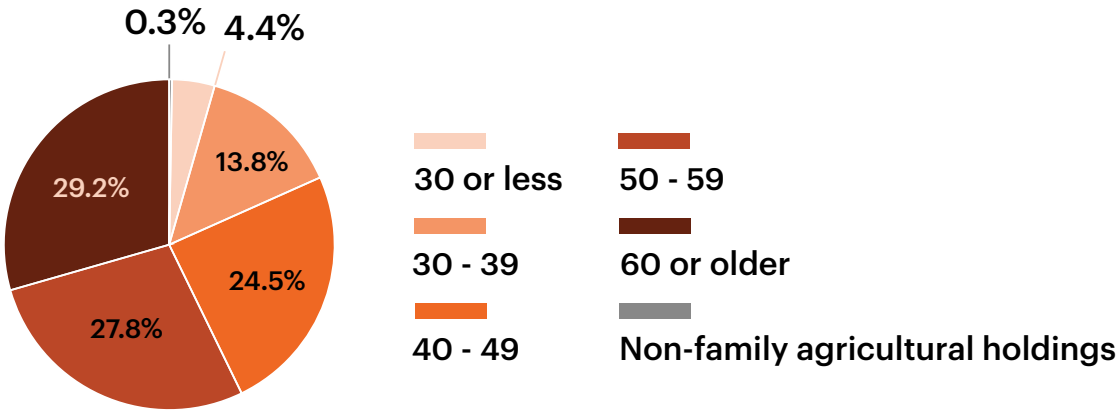
In its latest agricultural census, the Palestinian Central Bureau of Statistics (PCBS) revealed that the number of agricultural holders in the West Bank and the Gaza Strip amounted to about 140,568 during the 2020/2021 agricultural year, including 115,814 holders (82.4%) in the West Bank and 24,754 holders (17.6%) in the Gaza Strip.[58] The number of male holders amounted to 129,389 (92%), female holders amounted to 10,809 (7.7%), and 370 non-family holders (0.3%) (Figure 1).[59]

Figure 1: Relative Distribution of Agricultural Holders in the West Bank and Gaza Strip by Gender, 2020/2021



Of the total holders, the highest concentration were aged 60 or older (29.2%), followed by those aged 50-59 years (27.8%), and the percentages fall with each younger age group (Figure 2).[60]

Figure 2: Relative Distribution of Agricultural Holders in Palestine by Age Group, 2020/2021



The Cooperative Sector under the Umbrella of the Ministry of Labor

The cooperative sector falls under the umbrella of the Cooperative Work Authority – a registered body under the Ministry of Labor. A previous concept paper titled "Cooperatives in a Colonial Context" revealed that the number of cooperatives in the West Bank and the Gaza Strip amounted to about 900 cooperative societies, of which about 770-790 are in the West Bank.[61] However, the exact figure

fluctuates because some cooperatives are in the process of registration, closure, or dissolution. The Labor Sector Strategy for 2021-2023, issued by the Palestinian Ministry of Labor, states that there are only 670 cooperatives in the West Bank, more than half of which are inactive and employ only 530 paid workers.[62]

Cooperatives are divided into six federations. In terms of numbers, the Federation of Agricultural Cooperatives is the largest; however, the largest in terms of capital investment is the Federation of Housing Cooperatives.[63] The survey authors obtained an updated list for 2025, revealing 146 agricultural cooperatives in the West Bank and at most 16 in the Gaza Strip due to the difficulty in obtaining accurate information during the war.

The Private Sector and the Food Industry

From field interviews, it is clear that food policies are shaped by a partnership between the government and local community, in which the government is primarily responsible for providing food, in cooperation with the private sector, which is the main producer of foodstuffs. Thus, food production and distribution are subject to constant coordination between the public and private sectors.[64]

The number of food industry establishments (agricultural and non-agricultural) at the end of 2017 amounted to about 3,038 establishments, of which 2,251 are in the West Bank and 787 in the Gaza Strip. The number of food industry establishments has increased by 47.4% since 2010. It is worth noting that the vast majority of food industry establishments (more than 70%) are microenterprises employing one to four workers in 2017.[65] According to the International Standard Industrial Classification of All Economic Activities (ISIC), the preferred classification for the food industry in Palestine is divided into eight groups:[66]

Meat processing and preservation: It includes the production of livestock and poultry meat of all kinds (fresh, chilled, frozen, dried, salted, and smoked). In addition to the production of edible meat products, the classification also includes the production of leather, wool, feathers, slaughterhouse operations, and meat preparation.

Processing and preserving fish, crustaceans, and mollusks: This includes freezing, canning, drying, and smoking of fish and aquatic life. In addition, fish products suitable for human and non-human consumption, and seaweed processing are included.

Processing and preserving fruits and vegetables: This includes the manufacture of foodstuffs based on vegetables, fruits, and nuts. In addition to preserving vegetables and fruits in various ways, such as freezing, canning, salting, and others, and making juices, fruit jams, and salads.

Vegetable and animal oils and fats industry: This includes the manufacture of raw and refined vegetable and animal oils and fats, the manufacture of flour from oil seeds and kernels, the manufacture of margarine, and the extraction of inedible animal fats and oils.

Dairy industry: It includes the manufacture of liquid and powdered milk, curd, labneh, cheese, butter, cream, ice cream, yogurt, and other dairy products.

Manufacture of grain mill products, starch and starch products: This includes milling grains such as wheat, barley, oats, and rice, as well as the milling of products for legumes such as lentils, chickpeas, and beans, and breakfast cereals. In addition to the manufacture of starch from various grains, and the manufacture of glucose syrup and gluten.

Manufacture of other food products: These include bakery products, sugar, sweets of all kinds, pasta, vermicelli, coffee and tea products, ready-made soups, baby food, spices, salt, and others.

Manufacture of prepared animal feeds: Feed for farm animals, such as livestock and poultry, and pet food.

It is very important to note that in the food manufacturing process, raw materials account for the largest share of operational costs. In 2017, the cost of raw materials accounted for 63.4% of the total costs incurred, followed by wages (15%), fuel and hydrocarbons (6.8%), and electricity and water accounted for the lowest percentage, 5.2% and 0.63%, respectively.[67] This is in relation to food manufacturing operations in large factories, which rely on large holdings in production to obtain production inputs. As for small-scale farmers, they face other challenges in terms of production inputs and costs.

These prominent Palestinian food products could be attractive to the private sector: dates, dairy, cheese, fodder, poultry, livestock, bread, and pastries.

According to the Federation of Food Industries in Palestine, a commodity is classified as essential or non-essential through statistics collected by the PCBS, which relies on consumer data and needs to categorize food products according to these criteria. The food industry contributes 4% of Palestine's GDP and is part of the "manufacturing sectors", which collectively account for about 22% of the output of Palestinian industries.[68]

According to the Federation, the number of food factories in Palestine is estimated to be around 3,000. This figure includes bakeries, which are classified as food industries because they rely on importing flour from abroad and transforming it into products, such as bread. Factories producing foodstuffs, such as biscuits, chips, mortadella, and other processed products, are estimated at 500 factories in the West Bank alone, and the rest are bakeries and similar facilities.[69]

As one of the most important industrial sectors in occupied Palestine, the food industry employs more than 23% of the workforce, making it a vital sector for employment. More broadly, the industrial sector generally contributes about 10% of GDP, while the agricultural sector contributes about 3%. The gross value added of the food industry is estimated at about US$500 million, reflecting its importance in supporting the national economy.[70] The food industry plays an essential and vital role in achieving food security and safety. Today, it is the second-largest industrial sector in terms of size after the stone and marble sector, but it is the most important in terms of strategic impact, especially in light of the challenges related to food security, as we are witnessing in the Gaza Strip.[71]

Civil Society and Its Role in Influencing National Policies to Achieve Food Sovereignty

When addressing the historical and political context of occupied Palestine, it is important to note that multiple contexts characterize Palestinian reality resulting from the continued Israeli colonization. The land is divided into four main areas: the 1948 territories (the Palestinian interior), Jerusalem, the West Bank, and the Gaza Strip. This geographical and political division has created different environments that have influenced the formation of civil society and the political, economic, and social paths taken by its institutions. Therefore, civil society in historic Palestine cannot be viewed as a unified bloc, as its organizations' structure and legal framework depend on the region in which they operate.

In general, NGOs in Palestine are an extension of popular movements that emerged in the early 1980s and were in direct contact with political and partisan activity, and their roles overlapped with national parties and liberation movements.[72] The work of these organizations stemmed from a relentless popular quest for civil rights under Israeli colonial control, and their development coincided with the growth of the Palestine Liberation Organization (PLO) and the multiplicity of its factions, making them part of the overall national struggle.

It was previously estimated that in 1994 there were around 1,400 NGOs in occupied Palestine, but this number declined after the establishment of the PA; the Palestine Economic Policy Research Institute (MAS) estimates that 800 organizations disappeared as a new generation of organizations emerged.[73] According to a literature review, this was due to the PA's call to integrate NGOs into the then-emerging PA institutions.[74] However, it can also be argued that the new political reality after Oslo isolated Palestinian institutions in the 1948 occupied Palestinian territories and Jerusalem from the map of Palestinian institutions in the West Bank and Gaza Strip, as the Palestinian national project pinned its hopes on a state within the borders of 4 June 1967. With this project incomplete, even the institutions of so-called "East Jerusalem" are now

outside the map of Palestinian institutions.

In the latest data obtained through mapping, the number of registered NGOs is 3,353, but a large part of them are inactive. It is important to note here that all registered bodies, whether NGOs or grassroots organizations, are treated as charities according to Law No. 1 of 2000 on Charitable Associations and NGOs.[75] The law does not distinguish between charities and grassroots organizations, so the issue remains based on customs, data, and available information about each existing body. It can be said that this number is large relative to the area of the West Bank and Gaza Strip, but this is due to several reasons:[76]

The culture of voluntary work is historically ingrained in Palestinian society. At the moment of the transition from voluntary grassroots work to institutionalization, many voluntary movements were registered as associations.

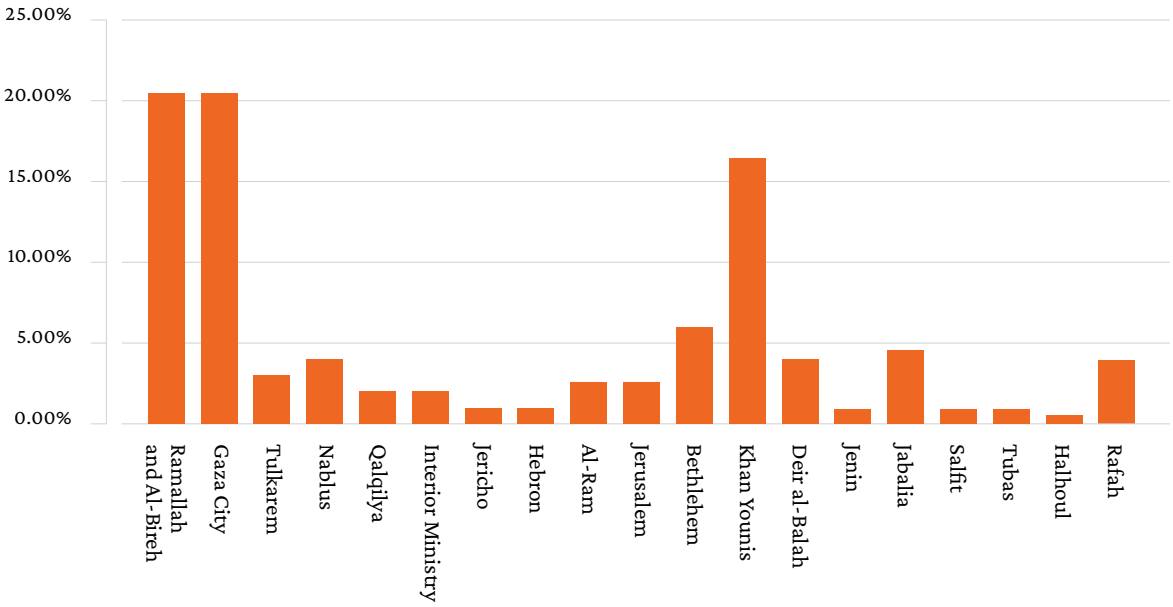
The ease of registering an association – any seven individuals can register an association for a nominal amount.

Conceptual confusion between cooperatives and associations. Some originally wanted to establish cooperative associations but because of a misunderstanding of the difference in jurisdiction between associations and cooperatives, they were registered under associations.

Of the 3,353 registered NGOs (some of which are inactive), 157 are registered under the Ministry of Agriculture's jurisdiction, and 51 are registered under the Environmental Quality Authority's jurisdiction.[77] However, this does not mean that agricultural and environmental organizations are the only ones working on issues of food production and food sovereignty. In food security, for example, organizations working under the umbrella of social development are active. In terms of agriculture and agricultural production, there is a good set of organizations registered under the Higher Council for Youth and Sports and the Ministry of Women's Affairs that focus on agricultural production and food processing. In this survey, however, we focus on organizations under the agriculture and environment sector, as the field of food and food production falls under the agricultural sector.

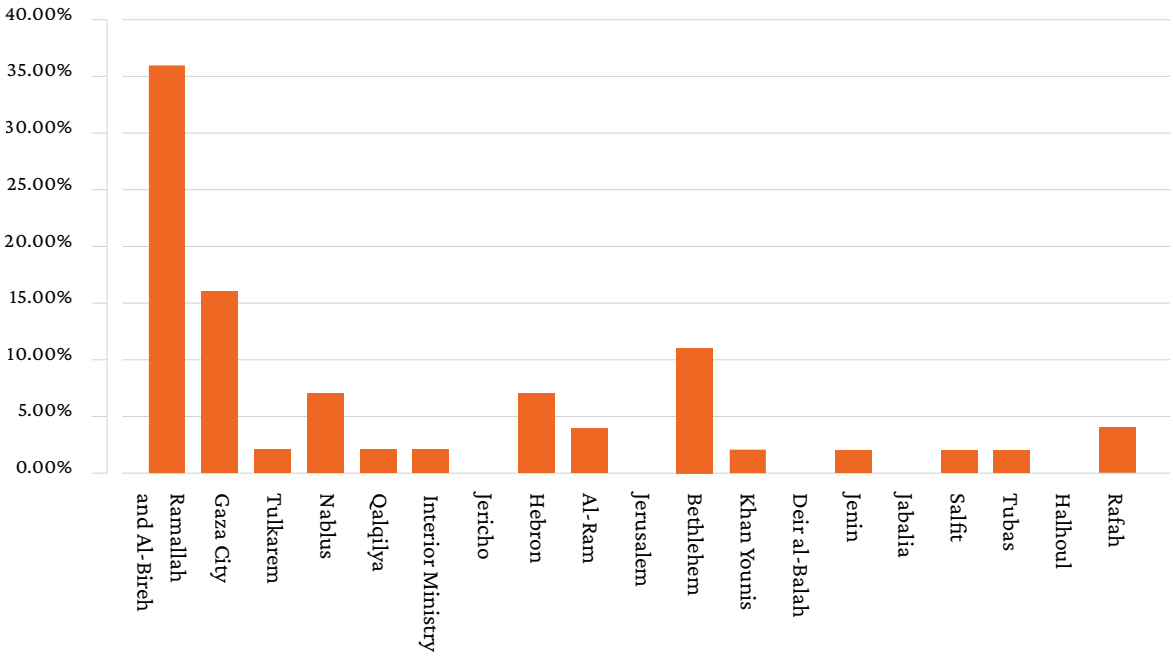
The data reveal that about 50.4% of agricultural NGOs are located in the West Bank and 49.6% are located in the Gaza Strip. The highest percentages are in Ramallah and al-Bireh governorate (20.5% of all organizations), Gaza City (20.5%), and Khan Younis (16.5%). Notably, the governorates of Hebron and Jericho each accounted for less than 1%, even though Jericho lies in the central Jordan Valley and Hebron is the largest governorate in the West Bank (Figure 3).

Figure 3: Distribution of Agricultural NGOs according to Geographical Area



As for environmental NGOs, according to data obtained by the research team, about 78% are located in the West Bank and 22% in the Gaza Strip. The highest percentage was concentrated in Ramallah and al-Bireh governorate (36%), then Gaza City (16%), and Bethlehem (11%) – see Figure 4.[78]

Figure 4: Environmental NGOs according to Geographical Area



Despite the continued work of these institutions and their activities on the ground, NGOs face great challenges related to funding scarcity, in addition to Israel's measures to end NGO activity, especially those that monitor and document the occupation's violations in the field.

Regarding the issue of food and food production, NGOs have played a pivotal role, especially since the agricultural sector (both plant and animal) provides the food. If we track the budget of the Ministry of Agriculture, at least in the last five years, we find that its budget does not reach 1% of the total general budget, most of which is spent on salaries and wages. Thus, the development of the agricultural sector, both plant and animal, is subject to the interventions of the private and non-governmental sectors.

Table 3 shows the most prominent Palestinian NGOs working in the field of food sovereignty in the West Bank and Gaza Strip.

Table 3: The Most Prominent Palestinian NGOs in Food Sovereignty

Ma'an Development Center	Applied Research Institute – Jerusalem (ARIJ)	Land Research Center (LRC)	Agricultural Development Association (PARC)
Environmental Education Center	Palestinian Hydrology Group (PHG)	Rural Women Development Association	Union of Agricultural Work Committees (UAWC)
Popular Campaign to Stop the Wall	Palestinian Green Building Association	Environmental Media Center	Association of Arab Agricultural Engineers
Palestinian Farmers Union	Green Life Association	Natouf Society for Community and Environmental Development	Arab Center for Agricultural Development (ACAD)

In addition, a number of organizations are active within the framework of food sovereignty, but are not affiliated with the Ministry of Agriculture or the Environmental Quality Authority. These include the Dalia Association, the Socio-Economic Policy Observatory, the Palestine Economic Policy Research Institute, the Young Men's Christian Association, the Young Women's Christian Association, etc. In addition, a group of NGOs registered with the Ministry of Social Development, the Higher Council for Youth and Sports, and the Ministry of National Economy are working to achieve food sovereignty. In this survey, we relied on agriculture and the environment as jurisdictions for NGOs.

In terms of coalitions and networks, there is the Coalition of Palestinian Agricultural Institutions, comprising six Palestinian environmental, climate, and agricultural NGOs interested in natural resources and their management: Agricultural Development Association (PARC), UAWC, PHG, LRC, Ma'an, and ARIJ.[79] The Coalition carries out joint campaigns and interventions, with key partners including the Swedish organization We Effect and the network of environmental organizations PENGON.

On the environmental level, PENGON, a coordinating body of 16 Palestinian NGOs working in the environmental field, was established in 1996 in response to an urgent need to unify efforts and enhance coordination among them in addressing environmental issues. It aims to develop the roles of partner organizations and strengthen their relationships with local and international organizations working in the environmental field.[80]

As part of the study, the research team distributed an electronic questionnaire to 29 organizations in the West Bank and Gaza Strip, most of which (54.5%) are based in Ramallah and al-Bireh. A large proportion (88%) replied that the most prominent challenges in the food sector, after the occupation's control of resources and crossings, are related to unsupportive

local policies and legislation, followed by consumer culture (64%), and the migration of producers and farmers (60%).

The survey results indicate that 89% of NGOs attribute the absence of clear and comprehensive policies on environmental justice in food production to the lack of a legal framework, weak institutional coordination, and the effects of occupation. Although some scattered sustainable agriculture initiatives have emerged, they lack a unified framework linking environmental protection to the rights of small farmers and rural residents. Political constraints and restrictions imposed by the occupation limit the possibility of formulating and implementing fair and effective environmental policies.

The results of the survey also showed that all of the organizations see friendly NGOs as the most effective partners, whereas 40% see the government as an effective partner, and 32% see unions and federations as effective partners.

Of the NGOs, 88% reported that their interventions focus primarily on food production, followed by agricultural policies and legislation (56%) and climate and environmental issues (48%). Overall, 92% believe that policies should be developed to encourage crop diversification, 84% emphasize the importance of water-saving and chemical-free agricultural practices, and 80% focus on supporting local seeds.

NGOs and Government Partnerships

Through field interviews, government and NGO specialists confirm that NGOs play a growing role in food production and participate in the formulation of relevant policies, especially before the outbreak of the recent war in Gaza. Organizations such as PARC and UAWC have contributed to supporting agricultural and livestock production, developing agricultural infrastructure, and strengthening the role of local productive units, including women's cooperatives.[81] They have also been active in initiatives related to food security and agricultural planning, in coordination with local communities and official bodies.[82]

However, some believe that the pattern of partnership between the civil sector and the government does not rise to the level of true partnership in policymaking, remaining mostly executive rather than participatory, especially in the absence of a serious official will to involve civil society in a systematic and sustainable manner.[83] Some private sector actors, particularly investment companies, have also tried to undermine the work of these institutions by monopolizing some vital sectors.[84]

Interviewees indicate that the relationship between NGOs and the government sector in Palestine is characterized by limited and irregular cooperation that varies according to the sector, the nature of the issues, and the political and economic context. Despite the existence of communication channels, participation is mostly limited to formal or symbolic involvement.

The Palestinian Ministry of Agriculture believes that the exclusion of NGOs from policymaking processes is not the result of a direct decision, but rather a natural consequence of structural imbalances within the institutions themselves, including limited human resources or their preoccupation with areas that do not intersect with official policy priorities.[85] Here, NGO capacity and professionalism are crucial in their involvement in policymaking, followed by the availability of financial resources to effectively implement these plans.[86]

On the other hand, some actors believe that exclusion is often systematic. The government tends to implement policies in a centralized manner, which ignores or involves CSOs at a late stage of the political process, minimizing any real impact. Although consultative meetings are sometimes held when strategies are prepared, representation is limited and not inclusive. Civil society is seen as a pro forma partner rather than an actor in policy design and evaluation.[87]

In the agriculture sector, and among previous experiences, there were attempts to involve CSOs in a more meaningful way, especially by the Ministry of Agriculture, through occasional meetings to discuss the sector's recovery policies. However, these initiatives did not turn into stable and sustainable mechanisms, ceasing altogether after 7 October. Political and security developments have overshadowed the continuity of this type of coordination.[88]

In the same context, some organizations emphasize that the difference in language and priorities between civil society and the government is an obstacle to building truly participatory policies. Officials often operate from an administrative-political perspective, while organizations are driven by a societal and value-based commitment that

responds to the needs of the most marginalized groups. This disparity sometimes results in a clash, such as when drafting joint position papers or policy initiatives.[89]

Nevertheless, some NGOs try to create opportunities for influence through community lobbying initiatives. Examples include food sovereignty projects such as local agricultural awareness-raising practices, organizing dialogues with official bodies, and engaging academics and researchers in formulating alternative visions for existing policies. However, these initiatives remain limited to the capacities and relationships of the organizations and lack the structural support that would enable them to become true partners in governance.[90]

Who Are the Underprivileged?

Before delving into the question of who is most affected by existing policies and realities, it is necessary to review a set of indicators related to Palestinians as a whole. Returning to general indicators, the poverty line for the reference household in Palestine in 2017 amounted to about NIS 2,470 (about US$671), while the extreme poverty line for the same reference household amounted to about NIS 1,974 (about US$536).[91] The poverty rate among Palestinians in 2017, according to monthly consumption patterns, was about 29% (14% in the West Bank and 53% in the Gaza Strip), and about 17% experienced deep poverty, in the West Bank (6%) and the Gaza Strip (34%).[92] These figures predate the COVID-19 pandemic and before the war on civilians in the Gaza Strip and the West Bank, whose ripple effects have yet to be measured.

It is very important to note that the average monthly expenditure per Palestinian individual amounted to about 170 Jordanian dinars (JD; approximately US$240), in the West Bank about 220.1 JD (approximately US$310), and in the Gaza Strip about 91.2 JD (approximately US$128).[93] In addition, the average monthly household expenditure was about 935 JD (about US$1,319). Notably, 31% of this expenditure is allocated to food needs.[94]

The policy review and field interviews show that existing food policies and practices in occupied Palestine reflect a structural bias towards the private sector and large investors, with clear marginalization for the most vulnerable local farmers and producers, especially women, camp residents, and marginalized areas. The testimonies show that public policies do not serve an equitable or developmental agricultural structure, but rather perpetuate the logic of the market and neoliberal trends in dealing with the agriculture and food sector. Large companies and food factories are the main beneficiaries of government incentives, receiving multi-year investment at the beginning of their projects.[95] In contrast, small-scale producers, including cooperatives and individual farmers, are not empowered to survive or compete, leaving them as permanent losers in the system.[96] Home-based production by women in villages is excluded from official statistics, despite their actual contribution to community food security, which creates an unfair and incomplete picture of this sector's reality. In terms of the groups most vulnerable to food insecurity, several key groups stand out:[97]

- Camp residents who have been forcibly separated from their land since the Nakba have become permanent consumers with no productive capacity.
- Entirely purchase-reliant urban dwellers who face high risks during crises.
- Women working in home production, whose work remains unrecognized and unsupported by official policies, despite being an economic pillar for a large number of families.

The policies adopted do not specifically serve small farmers or poor rural communities and tend to favor large investors capable of operating under difficult political and economic conditions. Access to agricultural resources and support is geographically concentrated in some areas, while others are marginalized, deepening the food security gap between populations.[98] The Jordan Valley is a glaring example of neglect in planning and development, despite its frequent reference in policies as a strategic area. The reality is that there has been no real intervention to support farmers or to protect land or infrastructure. In fact, some private investments have transformed agricultural land into commercial and tourism projects, dismantling traditional agriculture, marginalizing local farmers, and creating a new economic pattern that excludes groups that have historically been a cornerstone of food security in this region.[99]

This shift towards small-scale agro-capitalism serves limited interests, expanding the local agricultural structure, and weakens Palestinian society from achieving any form of sovereignty or food

security, especially under occupation and political fragmentation.

Popular Incubator, Local Initiatives, and Social Movements

Researcher George Karzem points out the importance of adopting alternative models in the relationship between consumers and farmers that promote healthy and environmentally friendly agricultural production.[100] Proposed models include organizing local networks in which consumers buy products directly from local farmers, especially organic produce, within cities and villages, based on successful practical experience. He also proposes supporting food sovereignty by cultivating drought-resistant plants adaptable to local climates, reviving traditional crops, or introducing new heat-tolerant varieties that require less care, as these provide economic, health, and environmental benefits to farmers.[101]

Building an alternative food production model requires a comprehensive reorganization that takes into account several interconnected dimensions. On the one hand, integration between the producers themselves must be promoted through crop diversification and geographical distribution that covers the needs of different regions, as well as the exchange of expertise and agricultural equipment. On the other hand, the relationship between producers and consumers must be regulated; this would strike a balance between supporting small-scale farmers, ensuring the sustainability of their work, and enabling consumers to have access to high-quality products.[102]

When these relationships are built on solid foundations, an alternative production system based on community and commercial exchange can be established, parallel to the mainstream market and progressively independent of it, allowing independent agricultural practices to emerge outside the logic of profit. There are already existing initiatives and community farm experiences that embrace ecological and local agriculture with food sovereignty as their main goal.[103]

Youth Partnership Forum

The Youth Partnership Forum is a program that brings together youth clubs and centers that are among the most prominent grassroots social forces on the ground. They aim to unify their efforts and strengthen their role in the areas in which they are active. The forum works as a productive framework parallel to official bodies, bridging gaps related to food production and enabling youth and women to achieve a form of self-sufficiency that paves the way for food sovereignty in the future.[104]

The Youth Partnership Forum was launched under the auspices of the Popular Artist Center. The work began in the early 2000s, coinciding with the outbreak of the Second Intifada, and focused on cultural and artistic activities in youth clubs and centers in the West Bank.[105] However, direct interaction with communities revealed an urgent need to expand the nature of the work beyond the cultural aspect to include economic, social, and volunteer dimensions.[106] Hence, the shift towards a holistic approach that integrates various aspects of community life and establishes a deeper approach to development and cooperative work.

The initiatives evolved to include community farming and youth cooperatives, as well as a comprehensive review and evaluation in 2017, with dozens of centers in the West Bank and Gaza Strip. This came amid political and economic change, most notably the escalation of settlements and the lack of investment in productive sectors, especially agriculture, which received a small portion of the budget compared to the heavy focus on the security sector.[107] This reality highlighted the need to shift from a consumer economy to a productive economy and raised questions about the possibility of resisting economic dependency without providing real Palestinian alternatives.

The program's organizers observed profound social changes, most notably the decline in the spirit of collectivism and a rise in individualism, which affected the community's ability to mobilize and resist. In response, cooperative agricultural initiatives that started with one or two farms expanded to about 30 initiatives in the West Bank, including 16 youth and women's initiatives, and contributed to enhancing food security, sovereignty over resources, and rebuilding a solid and resilient community fabric.[108]

La Via Campesina – Palestine

Founded in 1993, La Via Campesina is an international movement of millions of peasants, landless agricultural workers, indigenous peoples,

pastoralists, fishermen, migrant agricultural workers, small- and medium-sized farmers, rural women, and peasant youth from around the world. The movement is based on a strong foundation of unity and solidarity and defends peasant agriculture in order to achieve food sovereignty.[109]

In Palestine, La Via Campesina operates through its coordinating body: UAWC hosts the movement and coordinates its office for the Middle East and North Africa (MENA) region.[110] There is also a close partnership between PENGON and La Via Campesina.[111]

Friends of the Earth – Palestine

Friends of the Earth International (FoEI) was founded in 1971 on the initiative of four organizations from France, Sweden, the United Kingdom, and the United States.[112] Over time, FoEI has evolved into a global federation of 70 national groups, which grew out of annual gatherings of environmental activists from different countries who agreed to cooperate in joint campaigns on critical environmental issues, such as nuclear power and whaling.[113]

PENGON is the official representative of FoEI in Palestine. In other words, PENGON is Friends of the Earth Palestine (FoEP), and this name is used because the network is an accredited member of the international organization, and therefore represents Palestine at the global level within this framework.[114]

FoEP's work in Palestine is based on field and community activity through awareness campaigns, lobbying and advocacy, and project implementation. PENGON and FoEP's role is to coordinate, direct, and unify efforts around key environmental and sovereignty issues, including food sovereignty, ecological agriculture, and local seeds.[115] FoEP is an umbrella platform that unifies the efforts of environmental parties and seeks to influence policies and practices through advocacy, community campaigns, and local and international cooperation. This enhances Palestine's environmental presence globally while supporting environmental and agricultural issues on the ground.[116]

International Funding and Aid: Its Impact on Food Sovereignty

With regard to international organizations and institutions that support agrifood production within a developmental path, reference must be made to the Arab Fund for Economic and Social Development (AFESD), an Arab regional financial institution based in Kuwait that focuses on financing economic and social development projects, through financing public and private investment projects, and providing technical assistance and expertise.[117] The Fund began supporting various basic sectors in occupied Palestine in 1984, specifically in the social services sector, agriculture, irrigation, rural development, water, and sanitation.[118]

Notable donors include the European Union (EU) with its various programs, the Dutch government, the German development bank KfW, the German Agency for International Cooperation (GIZ), the Italian Agency for Development Cooperation, WeWorld-GVC (Italy), AECID (Spain), the Swedish Cooperative Center We Effect, Sida, ACPP (Spain), and Save the Children. In addition, many other international organizations act as partner-funders, such as FAO and Oxfam, helping Palestinians at different levels to achieve development goals. Even during the genocidal war in the Gaza Strip, many of these organizations worked to implement a range of interventions in the agriculture sector.

International intervention in Palestine, through grants and aid, is a central factor in shaping the relationship between NGOs and the political and economic environment in which they operate. Despite the importance of this intervention, in terms of providing financial support, it is not without concerns related to the nature and objectives of this provision, and the extent to which it is consistent with the priorities of Palestinian society and its quest for food sovereignty.

It is noticeable that most donor interventions focus on relief rather than contributing to structural shifts in the economic or food structure. This aid mostly responds to immediate needs without laying the foundations for sustainable development that promotes Palestinian food or economic independence.

Nonetheless, some initiatives have succeeded in going beyond the relief logic. For example, joint public-private projects, such as sanitation projects co-supported by the EU, which reflect the possibility of achieving effective development partnerships and joint planning between the actors. However, the success of these initiatives is still conditional on the readiness of the local community and the strength of the state's role in monitoring and sound, rational implementation.[119]

Specialists point out that donor interventions often focus on technical solutions, such as improving agricultural supply or rationalizing demand, and ignore the political and social dimensions and structural issues in governance. These interventions are based on funders' priorities rather than Palestinian needs; they lack continuity, local and international coordination, and overlook the dynamic reality of Palestinians, sometimes rendering environmental and climate justice as an "intellectual luxury". This raises questions about the effectiveness of using funds and whether they contribute to building national policies or are limited to short-term projects without a comprehensive development vision.[120]

Some experts point to the lack of serious oversight of the disbursement of international grants. Donors such as the World Bank and the EU provide funding with preconditions that may be incompatible with local conditions or with food independence goals. While funding may empower CSOs, it does not necessarily bring about real shifts in agricultural policies or the development environment. Competition for funding also forces organizations to engage in pro forma activities that do not address structural issues in the agricultural sector.[121]

Some argue that the failure of some funded projects, despite their theoretical quality, is due to the lack of follow-up and sustainability mechanisms, as temporary projects, such as desalination plants or infrastructure development, are left without maintenance or continued funding. In addition, weak environmental culture and infrastructure make it almost impossible to implement sustainable environmental projects without deeper changes in public culture and governance: citizens will not be motivated to participate in protecting an environmental project or public utility if they do not feel that the public interest directly affects their lives.[122]

Despite these challenges, some successful models have emerged that can be built upon, such as the GGP project, which was supported by Palestinian organizations with European funding and includes multiple components, such as infrastructure, advocacy, and community development. However, the main challenge faced by the project – like others – is sustainability, which reopens the debate about the need to integrate these initiatives into national policies with a long-term vision.[123] Some argue that the EU should completely revise its approach by supporting policies that originate from within Palestine and push for the participation of grassroots organizations in governance and priority-setting.[124]

On the other hand, some donors, such as USAID, promote the private sector and large corporations, without paying enough attention to small farmers or food sovereignty. Small-scale projects or limited funding may make an impact in local communities, but they remain insufficient to bring about large-scale national transformation. Experience shows that foreign funding – in its current form – remains an insufficient tool unless it is accompanied by political dialogue, a change in the culture of governance, and a genuine partnership with civil society.[125]

Responses to the questionnaire, distributed to a sample of NGOs active in the study, showed a wide variety of international donors that provided funding for food security-related programs. These actors can be categorized into three main categories, each with its own character and role:

- UN agencies, such as the United Nations Development Programme (UNDP), UN Women, FAO, WFP, and the United Nations Office for the Coordination of Humanitarian Affairs (OCHA), focus on technical development, food security, and relief, and their programs are mostly implemented through official institutions, which may limit the space for direct political influence of CSOs.

- Government-supported entities (European and American), such as USAID, Swedish, Spanish, Norwegian, Belgian, Dutch, and EU funds, are the most widespread, in terms of volume, but are often conditional or guided by security and economic strategies that do not always intersect with food sovereignty and environmental justice agendas, from an emancipatory perspective.

- Independent international NGOs, such as Oxfam, CARE, Save the Children, Islamic Relief, Global Communities, and other foundations, have played a greater role in funding community initiatives, especially those that promote

agroecology and empower vulnerable groups. However, some of these organizations rely on government funding, which may affect their flexibility to support radical alternative policies.

This diversity of funding sources reflects a series of opportunities for support, on the one hand, and limitations on the autonomy of agendas, on the other. Some organizations noted the need to disengage from conditional funding, which is often limited to promoting food security and frequently pushes neoliberal agendas that do not take into account the colonial context in Palestine.

Strengthening the autonomy and influence of Palestinian civil society requires expanding the funding base and redirecting it towards supporting food sovereignty. This would empower local actors during the policy formulation and implementation process and build environmentally just alternatives within an emancipatory vision.

Starvation as a Tool of War: The Reality of Food in Occupied Palestine

Since 7 October 2023, Palestine has witnessed one of the largest waves of systematic violence led by the Zionist colonial system, which took on the character of genocide and ethnic cleansing, especially in the Gaza Strip. Civilians there have been subjected to mass killings accompanied by the mass destruction of infrastructure and basic necessities of life. At the same time, the West Bank has been subjected to widespread attacks in the form of raids, mass arrests, and the demolition of infrastructure. According to data available as of June 2025, some 42,979 people were killed in the West Bank and Gaza Strip, and more than 104,714 were injured, of whom nearly two-thirds (66%) were women and children.[126] These attacks also resulted in the displacement of more than two million Palestinians inside the Gaza Strip as a result of the destruction of approximately 360,000 housing units, the targeting of Palestinian camps in Jenin and Tulkarem, and the destruction of infrastructure in Tubas.

Going back to November 2023, data show that between 24 November and 7 December 2023, more than 90% of the Gaza Strip's population (about 2.08 million people) faced high levels of malnutrition resulting from acute food insecurity, which is categorized at Phase 3 or higher (crisis or worse), according to the Integrated Food Security Phase Classification (IPC). Of these, over 40% of the population (939,000 people) were in an emergency situation (IPC Phase 4) and more than 15% (378,000 people) were in a catastrophe situation (IPC Phase 5).[127] As of 2 September 2025, the number of deaths resulting from starvation imposed by the Israeli occupation reached 361, including 130 children.[128]

In the West Bank, the occupation state increased the number of concrete gates and military checkpoints between October 2023 and early 2025, reaching 898.[129] In a new update, Quds News Network reported that the number of gates had reached 1,000 across the West Bank,[130] in addition to arresting thousands of Palestinians, increasing the pace of settlement building, and controlling agricultural lands.

Challenges to Realizing Food Sovereignty in Occupied Palestine

Food policies in Palestine face structural challenges resulting from a complex political and economic reality. At the center lies the Israeli occupation, which imposes direct restrictions on the basic elements of food production: land, water, and human resources. Crossings are under Israeli control, water is unequally distributed, and agricultural land is confiscated or its use is restricted, hindering the development of the food production chain and rendering national policies meaningless.

The Occupation as a Structural Obstacle

Respondents and specialists unanimously agree that the Israeli occupation is the biggest obstacle to achieving food security and food sovereignty, as it destroys agricultural infrastructure, targets land and crops, and prevents access to Area C, causing systematic famine in the Gaza Strip and chronic food fragility in the West Bank. Dependence on imports, up to 95% for basic food commodities such as wheat, leaves Palestinians vulnerable to

the vagaries of international markets and foreign policies and weakens the local community's ability to meet its needs self-sufficiently. In addition, Palestinian economic policies are constrained by the lack of sovereignty; Palestinian society does not control borders or the movement of goods. This prevents the development of an independent national agricultural policy capable of adapting to climate challenges and environmental shifts.

Overlapping Policies and Unfair Competition

The lack of coordination between government agricultural policies and the private sector has resulted in unfair competition, weakening the ability of farmers and NGOs to survive, especially in light of dominant monopolistic companies and settlement interference in the local market. The internal political division since 2006 has also hindered the implementation of unified national policies. Policies differ between the West Bank and the Gaza Strip, which undermines their effectiveness in any strategic national planning, including five-year plans being prepared with active CSO participation. As foreign products enter the Palestinian market without adequate oversight or protection, including those from settlements, small and traditional local industries are weakened, diminishing the chances of achieving a resilient and sustainable economy that respects environmental and climate justice.

Weak Official Protection of Farmers and Their Ability to Adapt to Climate Change

There are no official policies to protect small-scale producers from market or climate fluctuations, which increases their vulnerability and makes them susceptible to heavy losses, as happened with watermelon and olive farmers. The shortage of storage facilities, refrigerators, and centralized grain silos weakens their ability to maintain surplus production, resulting in price fluctuations and large losses, especially during bumper seasons.

Fragmented Institutional Efforts and Poor Coordination

NGOs operate under difficult conditions and with limited resources, often with individual or uncoordinated efforts, making the impact of their interventions limited and unsustainable, especially with short-term funding. Many projects end as soon as the funding ends without follow-up or maintenance plans, and what has been accomplished deteriorates, as has happened in some desalination plants.

The Challenges of Climate Change and Environmental Degradation

The Palestinian agricultural sector is directly impacted by climate shifts, including recurrent droughts, floods, and changing rainfall patterns, which increase pressure on water resources and threaten land productivity. This situation calls for adaptive strategies based on climate-resilient agriculture, sustainable water management, and the adoption of environmentally friendly production techniques.

Political Economy Determinants

The unstable structure of the Palestinian economy and Israeli control over markets and resources reinforce inequality and weaken the ability to achieve environmental and climate justice. The lack of Palestinian control over basic economic policies (such as customs and taxation) and water resources undermines the ability to design support programs for farmers and local industries and prevents building a resilient economic system in the event of crises and climate risks.

Recommendations

Despite the significant challenges in Palestinian agriculture under occupation, opportunities exist to promote food sovereignty and support smallholder farmers. Revitalizing underutilized land and enabling farmers to return to production contributes to improving their income and strengthening

the local resilient economy. These paths are summarized in the following recommendations:

At the policy level:

- Increase the share of the Ministry of Agriculture in future government budgets.
- Strengthen institutional coordination between relevant ministries and agencies to support food sovereignty.
- Develop policies to protect the prices of agricultural and livestock production inputs, while addressing the limitations of tax refunds for small farmers.
- Direct efforts towards enhancing local production and reducing dependence on imported products, especially Israeli ones.
- Target funding for the Jordan Valley to revitalize it as a Palestinian food basket and address its water salinization.
- Formulate progressive and enforceable policies, activate environmental laws, and establish "environmental police" to hold polluters accountable.
- Develop an agricultural water tariff law and tighten monitoring of agricultural electricity tariffs.
- Encourage water harvesting and the use of rainwater and recycled water, while emphasizing the natural right to water.
- Activate the consumer protection law, regulate fodder prices, and increase storage capacity for fodder and grains.
- Reconsider farmer subsidies and allocate them to smallholders.
- Use indigenous seeds and promote cooperatives to provide inputs at affordable prices, while developing cooperative laws and protecting them from targeting.
- Rebuild destroyed cooperative headquarters and provide the necessary infrastructure.

At the level of NGOs:

- Enable NGOs to move from relief work to strategic food sovereignty projects and build local and international partnerships to support sustainable agriculture.
- Standardize the definition of Palestinian food sovereignty and link it to the production of basic foodstuffs locally, with a focus on water as a prerequisite.
- Complement urgent humanitarian interventions (food, shelter, and health), especially in Gaza, in parallel with rehabilitating agricultural land, and invest in productive projects, such as agriculture, composting, greenhouses, and water harvesting.
- Lobby for fair financing tools and review institutional policies so that they include marginalized groups.
- Secure flexible international funding free from political conditions and seek to adopt an independent Palestinian vision for financing the agricultural sector and cooperatives.

Funds, Insurance, and Exemptions

- Effectively operationalize the agricultural insurance and risk prevention fund.
- Reconsider the establishment of social/agricultural banks to support the poor.
- Expand exemptions and simplify legal procedures to facilitate the registration of cooperatives in favor of small farmers.
- Quickly develop tax refund mechanisms for production inputs.
- Establish a national fund to support agricultural and artisanal cooperatives to ensure continuity during crises.

Strategic Planning

- Prepare alternative plans to manage agricultural production during wars and displacement, instead of random responses.
- Encourage urban and peri-urban agriculture in cities and surrounding areas.
- Invest in treating and reusing wastewater for irrigation and protecting soil from war-related pollution.

- Identify suitable land for strategic products and provide technical and material support.
- Protect local crops (olives, dates, and watermelons) through taxes on foreign goods and encourage local consumption.
- Develop supply chains for milk and recycle agricultural waste to produce fodder and fertilizer.
- Coordinate and diversify crops grown by initiatives and cooperatives to prevent gluts.
- Protect small farmers from the exploitation of middlemen in marketing.
- Adopt laws and policies to regulate the sale of land and prevent agricultural land conversion for non-agricultural use.
- Prioritize the consumption of small farmer products and encourage local agriculture to replace imports.

Community (Networking and Initiatives)

- Invest in treating and reusing wastewater for irrigation and protect the soil from war-related pollution.
- Address restrictions related to inheritance, financing, and ownership to ensure gender justice in reconstruction.
- Expand actor networks in the resilience economy and strengthen the interrelationship between production and consumption.
- Provide salt- and disease-resistant "mobile seed kits" to support farmers in times of crisis.
- Achieve self-sufficiency in basic vegetables with the possibility of exporting their surplus, despite limited self-sufficiency in wheat and barley.
- Transfer agricultural expertise among smallholders, especially in water harvesting and local seeds.
- Intensify community initiatives to market farmers' products and awareness workshops on agriculture and on the importance of returning to the land.
- Encourage the use of local resources and non-hybridized local seeds.
- Expand the application of water harvesting, create agricultural ponds, and protect the soil from erosion.
- Increase voluntary activities and popular markets to promote direct exchange between consumers and producers.
- Support cooperatives and organize their production sector.
- Invest in the media and social media to promote these efforts.

Endnotes

* This study was first published on 5 March 2026. https://www.arab-reform.net/publication/the-role-of-palestinian-civil-society-organizations-in-food-sovereignty/

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Akkar, Lebanon: A Lebanese farmer picks tomatoes in his field in Akkar, in 2021. © Hisham Maatouk – ARI Image Allies (AIA) .

Lebanon

Pathways Towards Food Sovereignty in Lebanon

Zeead Yaghi

Introduction

Lebanon faces a profound and compounding food crisis. According to the lateast Integrated Food Security Phase Classification (IPC) – an initiative comprising 21 organizations and intergovernmental institutions to jointly classify the severity and magnitude of food insecurity and malnutrition – 1.26 million people in Lebanon are currently in crisis phase (IPC Phase 3), of whom 85,000 are in emergency phase (IPC Phase 4). This indicates an urgent need for humanitarian action.[1] Syrian and Palestinian refugees are disproportionately affected, with 34% and 45%, respectively, in Phase 3 and above.[2] The Food and Agriculture Organization of the United Nations (FAO) and World Food Programme (WFP) now consider Lebanon a "very high concern" hot spot for food insecurity, due to conflict escalation, displacement, and economic deterioration.[3]

The roots of this crisis are neither recent nor simply economic. They are entrenched in political legacies of colonial governance, neoliberal reforms, and a state structure that has repeatedly failed to support rural and agricultural development, persistently privileging an export-oriented agriculture sector over local needs. The obstacles impeding Lebanon's path toward food sovereignty are shared across many countries in the Global South: years of financial mismanagement and extractive developmental schemes that benefit a tiny local moneyed elite and global financial actors; physical challenges, such as the increased stress of climate change on local agricultural practices in the form of heat waves and droughts; and administrative and political blocks to major land reforms that could democratize local farming.

Over the past half-century, local policy-makers, international experts, and major food business representatives molded Lebanon's food system into one that is largely dependent on food imports for everyday consumption, while centering the agricultural sector on export-oriented products. These circumstances have undermined the food system's ability to withstand financial, climate, and political shocks, subsequently diminishing the autonomy, livelihood, and political power of local growers. Furthermore, over the last two decades, Lebanon has witnessed the harms of climate change and a rise in temperatures, with fires, droughts, and dust storms becoming common occurrences. Lebanon is also located in a geopolitically tenuous region. To its south lies an ever-expansionist, intransigent, and militarized Israel, whose latest war against the country decimated the urban fabric of its southern districts, killed thousands of people, and irreparably harmed thousands of acres of farming land in Lebanon's fertile valleys to the east and south. Israeli actions have also repeatedly threatened Lebanon's water security.[4] Lastly, Lebanon is yet to emerge from a six-year financial crisis brought on by its kleptocratic political class, a crisis that has decimated the middle and working classes, diluted their purchasing power, and increased their dependence on imports for sustenance.[5]

At the same time, in response to deepening precarity, food sovereignty initiatives and grassroots movements are emerging in Lebanon – as they are globally – to try to retain control over food systems through resistance, innovation, and advocacy. This study highlights the difficulties facing farmers and food sovereignty activists in organizing a coherent and influential political bloc, due to fragmented efforts, structural political obstacles, limited resources, and a lack of institutional support. A particular focus is placed on governance and accountability mechanisms, both within the Lebanese government and among international financial institutions and other key stakeholders. Attention is given to the availability and transparency of information on food-related projects and initiatives, as well as the roles and responsibilities of different actors in shaping policy and implementation.

The research argues that a food-sovereign system – one that centers local producers, is internally self-sufficient, provides dignified wages for farmers, satisfies local market needs, and is durable and adaptable to climate change – is imperative for food security. To make progress on food sovereignty, farmers, advocacy groups across the political spectrum, as well as experts, educators, and civil society organizations must organize at the local, municipal, national, and regional levels into an effective political bloc capable of challenging the status quo, forcing their demands on the state, and ensuring the sovereignty of farmers. Moving beyond food security toward food sovereignty, Lebanon must invest in land reform, support grassroots cooperatives, and resist donor-driven input models. Only by returning power to producers and communities can the country build an adaptive, robust, just, and sovereign food system.

Methodology

Several guiding questions frame this inquiry: Who benefits from Lebanon's current food policies and systems, and who is marginalized or excluded? What regions, sectors, or groups are most vulnerable to food insecurity under the present conditions? To what extent are civil society organizations (CSOs), unions, and local communities involved in shaping food policies, and who is excluded from these processes? When CSOs are included, what forms does their participation take, and what are the tangible impacts – both positive and unintended – of their involvement?

The first component of the research involved an extensive desk review, with a focus on three key dimensions in the literature on food sovereignty in Lebanon: the financial implications of food insecurity, the uneven distribution of food access, and the vulnerabilities facing certain social groups. The review also examines how these issues intersect with broader questions of governance, rights, and sustainability.

The primary research incorporates a qualitative component involving individual and group interviews, as well as field observations with a range of key stakeholders: farmers, policy-makers, civil society actors, activists, and representatives from international organizations. The aim of the interview component was to gather firsthand accounts and experiential knowledge of the challenges and dynamics shaping Lebanon's food systems today. Interviews were conducted with 15 individuals drawn from several groups invested in the issue of food sovereignty and security in Lebanon: local producers, CSO representatives, farmers' advocates and organizers, and scholars and experts on the agricultural sector and political economy of food production and consumption.

The research period coincided with the announcement and selection of a new government and Minister of Agriculture, which made it difficult to set up interviews with the ministry. However, many of the advocates and experts interviewed for this report attended meetings organized and held by the minister and his team. They were asked about their discussions with the ministry, their plans for pushing its political commitments, and their overall impression of the current team in charge.

The researcher also participated in consultation meetings and roundtable discussions – spaces that allowed for deeper dialogue and an exchange of ideas among stakeholders from diverse sectors, fostering collective reflection on pathways toward food sovereignty. Except for local experts who consented to using their names, the remaining interviewees have been anonymized.

The Roots of Food Insecurity in Lebanon

Food security and food sovereignty, while sometimes used interchangeably in public discourse, represent two distinct paradigms. Food security refers to the availability, accessibility, and affordability of food, whereas food sovereignty emphasizes the right of people to define their own food systems, prioritizing local food economies, agroecology, and community control.[6] In Lebanon, the entanglement of these concepts is not merely semantic. Instead, it reflects deeply embedded historical, political, and structural forces that have shaped the country's food landscape.

Colonial Legacies and Land Tenure Transformation

The origins of food insecurity in Lebanon are intertwined with colonial transformations of land tenure

systems. The Ottoman Tanzimat reforms, particularly the 1858 Land Code, marked a major shift by privatizing mushaa (communal) lands and transferring control to local notables and elites. This change laid the foundation for an extractive agrarian order where land became a commodity rather than a communal resource.[7]

French colonial policies further marginalized the peasantry and entrenched urban-elite control over agricultural production. Infrastructure projects such as the Beirut port, designed to facilitate imperial trade, prioritized export crops like silk and wine over subsistence farming.[8] As Elizabeth Williams demonstrates, agricultural investment by French Mandate authorities in 1920s-1930s Syria and Lebanon was based on two principles that weakened food sovereignty in the Levant: a) agriculture investments sought to extract maximum profit for Paris-based businesses; and b) the investments would be located in regions already pacified or supportive of French colonial rule. The first tied the agricultural fates of the mandates to the business interests of the metropole, and the second led to uneven regional development.[9]

Post-Independence Political Economy

After independence, Lebanon adopted a "merchant republic" model that emphasized trade and finance over rural development. During the 1940s and 1950s, regional capital and Palestinian refugee labor drove the expansion of export-oriented agriculture. However, this growth did not translate into equitable development. Traditional agropastoral systems were displaced, women were marginalized in agriculture, and social cohesion declined.[10] Efforts at rural reform, such as President Fouad Chehab's 1950s policies, aimed to reduce geographic inequality but failed to alter structural imbalances. The civil war (1975-1990) and post-war neoliberal reconstruction further fragmented rural spaces, leaving agricultural policy in the hands of international donors and sectarian non-state actors.[11]

Integration into Global Capitalism

Since the 1980s, Lebanon has become increasingly integrated into the global corporate food regime. This model prioritizes agro-export economies, import dependency, and donor-driven agricultural inputs. As Riachi and Martiniello (2023) argue, Lebanon's incorporation into global food regimes mirrors broader patterns of capitalist accumulation in the Global South. Trade liberalization, structural adjustment policies, and privatization of land and resources have undermined food sovereignty and accelerated vulnerability.[12]

Crisis of Agricultural Production and Finance

The collapse of the Lebanese pound since 2019 and the financial engineering policies of the central bank have devastated Lebanon's food systems. Farmers face rising costs for imported inputs, collapsing access to credit, and devaluation of their produce. These financial crises are compounded by donor-driven input regimes that push imported seeds and fertilizers, locking farmers into dependent and unsustainable cycles.[13]

War and Ecocide

Lebanon's agriculture has also suffered immense damage from Israel's most recent war on the country. Between October 2023 and November 2024, Lebanon's agriculture sector incurred over US$700 million in damages and losses, primarily in southern Lebanon and the Beqaa Valley. Olive and citrus orchards, poultry, livestock, and fisheries have been heavily affected, significantly disrupting food production.[14]

In sum, the existing literature on food systems in Lebanon shows that the country's food insecurity is not a sudden calamity but the result of long-standing forces: colonial legacies of land tenure and uneven development, neoliberal policies and global capitalist integration, sectarian governance, and geopolitical conflict. These dynamics have transformed the agricultural system into one marked by export dependency, deep precarity, and structural inequality.

Analysis of Grassroots and Sovereignty-Based Responses

Within the cracks of Lebanon's food system, movements for food sovereignty are taking root. The 2019 financial crisis – from which Lebanon has yet to emerge – coupled with the shock of Beirut's port explosion in August 2020 that devastated Lebanon's main food import hub – revealed the fragility of food security models based on global supply chains. As Anahid Simitian (2022) argues, the collapse of food logistics could offer an opening for rooted, regional emancipatory food systems.[15] The potential lies in what Winona LaDuke and Deborah Cowen (2020) call "alimentary infrastructures": life-giving systems of food production rooted in land, labor, and community.[16]

"The 2019 financial crisis – from which Lebanon has yet to emerge – coupled with the shock of Beirut's port explosion in August 2020 that devastated Lebanon's main food import hub – revealed the fragility of food security models based on global supply chains."

As will be shown, there is a growing recognition that food must be decoupled from global markets and recentralized in local hands. Across interviews with farmers, experts, organizers, and advocates, a collective diagnosis is clear: the dominant model of agrifood development has failed – and a radically different, justice-centered alternative is both necessary and possible.

Understandings of Food Sovereignty

Food sovereignty is not a static concept. As Edelman et al. (2014) emphasize, it is a dynamic process shaped by ongoing debates among scholars, peasants, and activists.[17] Questions around trade, governance, and the balance between agroecological ideals and market realities challenge practitioners to refine and adapt sovereignty frameworks. Critical perspectives insist on clarity about who exercises sovereignty, how much pluralism is tolerated, and how food sovereignty intersects with rights-based frameworks and state structures. This self-reflexivity is vital for Lebanon, where international aid regimes and sectarian politics often compromise sovereignty. Grassroots food sovereignty movements must grapple with questions of scale, legitimacy, and strategic alliances to navigate a context marked by protracted crisis and external intervention.

Among agricultural advocates interviewed, food sovereignty was consistently articulated as a deeply political, justice-oriented concept grounded in autonomy, local control, and resistance to imposed systems. For SL, a member of the nonprofit association Jibal,[18] food sovereignty is "the right of people to define their own food systems – not just to access food but produce it, decide how it is produced, and who benefits". SL critiqued the dominance of international aid agencies and the Lebanese

government's alignment with large agribusiness interests, asserting: "You cannot talk about sovereignty while relying on global aid agencies to feed your people or shape your agricultural strategy." Similarly, WO, a representative of Mada, an NGO that works extensively with small farmers in Akkar,[19] emphasized the importance of regional autonomy and sustainable farming tailored to local needs. "Sovereignty means communities being able to produce food in ways that suit their land, their seasons, and their traditions – not importing tomatoes from Spain," WO noted.

Through an urban lens, LP of the Badaro Urban Farmers Market linked food sovereignty to reclaiming market power from corporations: "It's not just about the farm – it's about people in the city having alternatives to supermarkets. Food sovereignty is also about who profits from your dinner." FL, who works at Beit el Mouzareh, an initiative of Arcenciel – an NGO that runs farmers' support services across the country but predominantly in the Beqaa – described sovereignty through the lens of dignity, particularly for marginalized producers: "Most of our women farmers don't speak of sovereignty with big words. But when they choose what to grow, how to feed their families, that's sovereignty."

Three representatives from the Agricultural Movement in Lebanon (Agrimovement) expanded on this vision – a social justice group working within an explicitly political framing toward a food-sovereign system that is equitable, fair, and dignified for local growers.[20] PY called for economic justice, asserting: "If a farmer can't sell his produce without losing money, there's no sovereignty." DN emphasized the importance of seed sovereignty: "We're importing hybrid seeds every season. That's dependency, not sovereignty." KM added: "Food sovereignty is not isolationist. It's about fair systems of exchange, not colonial ones." Across these interviews, food sovereignty emerges as a call for structural transformation – one rooted in reclaiming agency, building localized alternatives, and ensuring justice across food systems.

Among local growers interviewed, food sovereignty was described as both a practical necessity and a political goal, intimately tied to agroecology, market justice, and producer dignity. AB, a farmer and member of SOILS, an organization dedicated to permaculture,[21] emphasized that trust is the cornerstone of food systems: "If you don't know the farmer, you won't buy from them; trust is invaluable for us." AB argued that farmers should be compensated not only for their produce but for the services they provide – namely, producing food that is sustainable, clean, and healthy. They advocated increased consumer awareness and called attention to the structural imbalance between small-scale farmers and donor-backed, export-oriented agriculture: "The ministry has always been for the big farmers who export, for bigger agricultural producers who aren't the majority of farmers but a powerful, monied, and well-connected minority." AB also acknowledged the challenges of farmer organizing, noting: "We don't have functioning cooperatives… farmers don't have a practice of working with each other."

XY, a farmer and advocate affiliated with Jibal, defined food sovereignty in concrete terms: "To have the staples of our diet produced locally and sustainably [requires] at least 50%." XY promotes agroecological practices, such as poly-cropping and crop rotation, and supports consumer-producer solidarity through Community Supported Agriculture (CSA) – an alternative system of mutual support and risk-sharing that allows the consumer to subscribe to the yield of a certain farm or group of farms.[22] XY believes that sovereignty also requires structural interventions, from subsidies to the enforcement of protectionist laws and equitable water governance. Like AB, XY criticized the dominance of middlemen and the failure of organic certification systems, which create barriers for small planters: "Farmers in Lebanon are too tired to organize and advocate on their behalf. So, another organization has to step in for this role."

UT, founder of Buzuruna Juzuruna – an agricultural cooperative, mutual aid group, and seed bank[23] – offered the most holistic articulation of food sovereignty. For UT, it is a deeply personal, political, and ecological project: "It means having the right to produce food that is locally appropriate and beneficial – ecologically, nutritionally, culturally, socially, and economically." UT's work is rooted in rebuilding full agroecological value chains – from seed to bakery – and fostering trust through radical transparency. Their critique of state structures is clear: while they remain open to collaboration with the ministry, they ultimately work at the margins to build alternatives resilient to systemic fragility.

Together, these growers envision food sovereignty as a reclamation of autonomy, a restructuring of food markets, and an ethic of care that places farmers – and their communities – at the center of agricultural

transformation.

The perspectives of local experts reveal food sovereignty as both a policy challenge and a strategic imperative – requiring institutional reform, political coordination, and deeper attention to historical inequalities. Rita Khawand, founder of SOILS and member of the international agroecology grassroots network Urgenci,[24] calls for a localist approach to food systems: "We have to satisfy our needs locally." She critiques Lebanon's dependency on imported food and inputs, arguing that local production for local consumption – built on direct relationships between producers and buyers – is essential for a resilient future. While optimistic about the new Minister of Agriculture, Khawand is critical of Lebanon's cooperatives, many of which she describes as donor-driven and functionally ineffective: "There is no structure or vision."

Kanj Hamade, a political economist and agricultural policy expert, defines food sovereignty as a matter of putting the farmer first – through subsidies, anti-cartel policies, and political agency. "The ministry has to become the ministry of the farmers," he asserts, warning against the apolitical stance of many rural actors: "You cannot advocate without a political agenda." Hamade critiques donor logic, noting how support has favored agricultural "pioneers" rather than building mass movements. He is also skeptical of niche initiatives like farmers' markets or CSA schemes if they fail to scale or remain disconnected from broader policy goals: "If you don't want to grow, why should I help you?"

Noa Sanad, PhD candidate conducting field research on agricultural alternatives in Lebanon since the financial crisis, approaches food sovereignty through a historical and grassroots lens, studying how agricultural alternatives have evolved in post-crisis Lebanon. Sanad sees initiatives like Nohye el Ard – which organize through neighborhood-based committees – as models for decentralized, locally embedded transformation. However, Sanad is critical of the state's inaction, especially its reliance on praising farmer "resilience" instead of providing structural support. "The elephant in the room is land ownership and access," Sanad emphasizes, arguing that without addressing colonial-era land tenure inequalities, food sovereignty will remain elusive. Sanad advocates for a mediating body to bridge the gap between exhausted farmers and advocacy organizations capable of pushing for systemic change.

Collectively, these experts call for a multi-level transformation: from reforming cooperatives and subsidy regimes, to coordinating policy across sectors, to reclaiming land and political power. For them, food sovereignty in Lebanon demands both radical imagination and institutional coherence – an alignment of values, policies, and practices in service of producers, consumers, and the environment alike.

For these local experts, food sovereignty is about power, justice, and systemic reform, not merely an issue of production. Key shared understandings include:

- Producer-centered models: Empowering farmers with choice, autonomy, and voice is foundational.
- Localism over dependency: Strengthening domestic food systems, while recognizing limits to total independence.
- Structural barriers: Land access, dysfunctional co-ops, fragmented aid, and donor-driven agendas all inhibit sovereignty.
- Need for coordination and organization: Whether through reformed ministries or grassroots networks, food sovereignty depends on collective strategy and political organization.
- But the interviews also expose tensions:
- Between grassroots experimentation (Sanad) and state-led reform (Khawand);
- Between depoliticized resilience narratives and the need for explicit political agendas (Hamade, Sanad);
- And between ethical niche markets and scalable, just systems (Hamade, Turkmani).

Ultimately, these expert voices converge on the idea that food sovereignty in Lebanon must be both practical and radical: practical in rethinking market systems and production chains, and radical in reimagining governance, ownership, and justice.

Views on the Scalability of Food Sovereignty Models

Cautious Optimism Rooted in Grassroots Practice

Among food sovereignty advocates, the question of scalability elicits measured optimism coupled with structural critique. SL (Jibal) emphasized that while agroecology and local food systems are scalable, this can only happen if the state reorients its support toward grassroots actors. "Scalability depends on shifting political will," SL argued. "You can't scale agroecology while subsidizing pesticides and imported seeds." SL further underscored that without long-term infrastructure investments and protectionist policies, grassroots projects risk being locked in pilot mode – replicable in theory but unsupported in practice.

WO (Mada) similarly believes in the scalability of agroecological and community-led approaches but insists it must be contextual and regionalized. "What works in Akkar might not work in the Beqaa," WO noted. They stressed that bottom-up learning and networked experimentation are the most realistic paths forward. LP, a founder of a coalition of farmers' markets and organizer of the Badaro Urban Farmers Market, was more skeptical of traditional scaling logic, arguing that replication is not always desirable: "We don't want a mega CSA. We want many local ones embedded in their neighborhoods." For LP, the goal is proliferation, not centralization.

FL, who works at the Beit el Mouzareh (Farmer's House) initiative at Arcenciel, a Lebanese NGO that runs farmers' support services across the country but predominantly in Beqaa, emphasized the need for scaling the values, not necessarily the structures: "The dignity, the agency, the justice – these are what need to spread," warning that efforts to scale cooperatives often result in bureaucratization and loss of autonomy. "Once you formalize too much, you risk losing the spirit of the thing," FL cautioned.

The Agrimovement representatives (PY, DN, and KM) echoed these concerns. PY asserted: "You can't copy-paste a food system. You need to grow it with the people." DN highlighted the difficulty of expanding seed-saving networks under current land and donor restrictions. KM warned against NGO-driven scaling models: "They always want a toolkit. But you can't reduce sovereignty to a toolkit."

Overall, advocates recognize the need to scale up food sovereignty models, but argue this must happen through horizontal replication, adaptation, and systemic support, not through top-down or technocratic expansion. The scalability of these models, they argue, is political rather than simply technical – and success depends on real shifts in state priorities, donor practices, and cultural paradigms.

Scaling Through Solidarity, Not Size

Among local growers, the possibility of scaling food sovereignty practices is deeply tied to trust, autonomy, and support systems. AB (SOILS) was cautious, arguing that scalability is hindered by the structural marginalization of small-scale farmers. "The ministry still supports the big exporters," AB said, "so how can we scale what they don't even recognize?" AB also cited mistrust among farmers and the lack of functioning cooperatives as barriers: "They're very independent… You still need a middleman."

Still, AB sees potential in farmer-to-farmer organizing and direct-to-consumer relationships. "It's not about becoming big, it's about becoming many," they said, echoing the idea of distributed growth over vertical expansion.

XY, who combines farming with advocacy through Jibal, also expressed conditional belief in scalability. "Scaling up is possible if done sustainably," XY explained, "but it makes you evaluate the quality of life – every farmer weighs the pros and cons." XY pointed out that state-subsidized farmers are the ones surviving, suggesting that without public support, scaling agroecological practices remains out of reach. They also criticized the commodification of organic certification, which blocks smallholders from accessing markets: "The ones following the rules can't afford the labels, and the ones with labels don't follow the rules."

UT (Buzuruna Juzuruna) offered the most strategic and comprehensive vision of scaling through a model they termed "spreading out, not scaling up". "We don't want to become a big farm," UT said. "We want many farms, many seed banks, many bakeries." For UT, scalability lies in creating a resilient ecosystem: one that can weather shocks, remain decentralized, and replicate in diverse conditions. UT imagines: "A seed bank in every Lebanese village, and eventually in every village across the Arab world," articulating a vision where food sovereignty is grown through interdependence, not hierarchy.

Local growers reject industrial concepts of scale in favor of distributed networks, community replication, and state-supported autonomy. Their experiences underline the limits of voluntarism: while peer-to-peer models can grow, they require systemic support, land access, infrastructure, and policy alignment to scale in meaningful, just, and lasting ways.

Scaling Requires Coordination, Strategy, and Structural Reform

Local experts provided the most critical, system-wide evaluations of scalability, insisting that food sovereignty cannot be scaled without a supportive political economy. Khawand argued that local production can be expanded, but only if the system shifts away from donor dependency and fragmented cooperative structures. "We can reduce import dependency," she stated, "but only with better coops and real institutional frameworks." Khawand remained hopeful about government reforms under the new minister but warned that cooperatives are largely dysfunctional: "There is no structure or vision."

Nur Turkmani, an expert on the network of women-led agrifood cooperatives who has spent years interviewing farm laborers in the Beqaa valley, was more critical of institutional incoherence and donor silos. "They don't work together towards a unified vision," she said, referring to the Ministry of Agriculture, FAO, and international donors. For Turkmani, agricultural initiatives remain small and disjointed because they are driven by external agendas. However, she noted that women-led agro-processing cooperatives offer a scalable alternative: "They've done solid organizing." These cooperatives work because they are embedded in communities and culturally rooted, not donor-scripted.

Hamade delivered the sharpest critique of scaling through niche models like farmers' markets and CSAs. "There's a saturation," he said, warning that some initiatives remain socially narrow and economically unsustainable. He questioned why public funds should support projects that do not serve broader constituencies: "If they don't want to grow, why should the state support them?" Hamade called for state-driven agricultural reform, focused on building producer autonomy through subsidies, pro-farmer and anti-cartel policies, and cooperative renewal.

Noa Sanad tied the challenge of scaling to historical inequalities and the absence of a political strategy. While networks like Nohye el Ard show promise through hyper-local organizing, Sanad warned that scaling is impossible without land reform and institutional intermediaries. "The elephant in the room is land ownership," Sanad declared. Moreover, expecting farmers to scale initiatives while simultaneously producing, surviving, and advocating is unrealistic. "You need a structure that carries political weight," they argued – a body that can connect grassroots efforts to broader policy influence.

Experts agree that scalability requires more than replication – it requires system redesign. They identify key preconditions for scaling food sovereignty in Lebanon:

- cooperative reform (Khawand);
- strategic policy coherence (Turkmani);
- public investment and producer-first frameworks (Hamade);
- and land reform and political mediation (Sanad).

Together, they insist that technical solutions cannot substitute for political alignment. Without addressing the underlying structures of inequality, governance, and resource distribution, food sovereignty will remain fragmented and marginal.

Across all interviewees, there is broad agreement that scaling food sovereignty models in Lebanon is both necessary and deeply constrained. In sum, scaling food sovereignty is not about size but about systems. It demands shifting both power and structure, from markets to ministries, from donors to communities, from technocratic replication to political mobilization.

Views on the Ministry of Agriculture

Structural Distrust and Demand for Paradigm Shift

Across the board, agricultural advocates expressed deep skepticism toward the Ministry of Agriculture (MoA), viewing it as historically aligned with elite, export-oriented, and donor-driven models. SL (Jibal) described the ministry as a captured institution, stating: "You can't talk about food sovereignty when the ministry's strategy is written by

> **Across the board, agricultural advocates expressed deep skepticism toward the Ministry of Agriculture (MoA), viewing it as historically aligned with elite, export-oriented, and donor-driven models.**

consultants paid by the World Bank." For SL, the MoA has consistently reinforced a top-down model of agriculture shaped by donor logics and international markets, rather than grassroots or agroecological priorities.

WO (Mada) echoed this critique, arguing that the ministry functions primarily to support "big, politically connected farmers", rather than representing smallholders' diverse needs. "The ministry talks about development, but in practice, it reinforces inequality," WO said. LP (Badaro Urban Farmers Market) pointed to the urban-rural disconnect embedded in the ministry's policies: "It's like we don't exist to them. They don't think urban agriculture is real farming."

Nonetheless, some advocates noted potential in the current minister's outreach, including FL (Beit el Mouzareh), who said: "The minister invited us to speak – that's a first. But one meeting doesn't change the system." FL emphasized that trust must be earned, and the MoA must institutionalize mechanisms for small-farmer participation, not simply host symbolic consultations.

From Agrimovement, PY articulated a desire for the ministry to shift from being a regulator for exporters to a facilitator for producers: "If they cared about food sovereignty, they'd invest in seed banks and local distribution channels." DN was blunter: "The ministry only cares about appearances. Sovereignty requires infrastructure, not slogans." KM added that real transformation would mean the decentralization of agricultural governance and participatory planning: "Put farmers at the center, not just at the table." Advocates largely see the MoA as an institution in need of radical overhaul. While they acknowledge a window of opportunity with the new minister's openness, they caution that token inclusion and pilot reforms are insufficient. They call for a reorientation of the MoA's priorities – from top-down planning and donor dependency to bottom-up governance and producer-driven sovereignty.

Disillusionment, Skepticism, and Strategic Engagement

Local growers were blunt in their distrust of the MoA, describing it as ineffective, elitist, and structurally biased against small-scale farmers. Despite the minister's recent outreach, AB (SOILS) expressed deep skepticism: "He says the door is open to agroecological farmers, but nothing will change if the ministry still listens to the same big players." AB stressed that the MoA historically caters to export-oriented interests: "They've always been for the big farmers who export. They're not the majority, but they have the money and connections." AB further argued that without shifting this embedded favoritism, any promise of reform remains cosmetic. "Until the ministry stops prioritizing the FAO and donors over farmers, nothing will change," AB insisted. The issue is not only who the ministry listens to but how it defines success: "They don't count sustainability, they count output."

XY (Jibal-affiliated grower) expressed even less confidence: "I have no trust in the regime at the ministry." XY noted that big farmers have captured the state, and even existing laws meant to protect tenant

farmers are not enforced. "The system is sectarian and clientelist. The ministry isn't neutral – it's part of the problem," they said. XY also emphasized that the MoA does not regulate critical issues, such as water access, a key determinant of food sovereignty. "They need to monitor and distribute water fairly. Right now, the municipalities control it through political networks."

UT (Buzuruna Juzuruna) offered a slightly more nuanced view. While still skeptical, UT emphasized a pedagogical, rather than confrontational, approach: "If the ministry doesn't obstruct our work, that's already progress," they said. UT noted that the new minister had requested support in scaling agroecological training, which could signal a shift. Still, UT maintained that political independence and grassroots strength are more reliable than ministerial promises: "We work on the margins because that's where change is possible."

Local growers overwhelmingly view the MoA as disconnected from their realities and beholden to elite interests. Their critique is rooted in lived experience, particularly the lack of enforcement, infrastructure, and equitable support. While they express strategic openness to working with the ministry when opportunities arise, they remain fundamentally mistrustful of its motives and capacity. For them, food sovereignty will not emerge from ministry plans alone – it must be built from below and defended at every level.

Policy Disarray, Donor Capture, and Strategic Openings

Local experts offered the most detailed and institutional critiques of the MoA, portraying it as structurally weak, politically compromised, and incoherent in its policies. Rita Khawand acknowledged that the new minister had shown signs of listening to civil society but cautioned: "One good minister doesn't fix a broken institution." Khawand critiqued the MoA's dependence on donor-led projects and described most cooperatives under its oversight as "barely functional". She called for strategic reform that would clarify the ministry's role: "Is it a facilitator? A regulator? A planner? Right now, it's none of the above."

When asked about the ministry's work, Turkmani identified a major barrier: the lack of coordination among key stakeholders. International donors, local NGOs, government bodies, and community organizations often work in isolation, pursuing separate agendas rather than a shared strategy. "They don't often work together towards a unified vision of a food-sovereign and secure system," Turkmani noted. Even when these actors formally collaborate with Lebanon's MoA, their priorities frequently diverge, creating overlapping efforts without a cohesive plan. This disjointed approach delays – and sometimes even prevents – progress toward building a resilient and autonomous food system. Despite these structural challenges, Turkmani pointed to one bright spot: women-led cooperatives in agro-processing. These co-ops, focused on traditional food production like mouneh and preserves, are among the few truly functional and sustainably organized cooperatives in the country. Their success stands in contrast to the broader cooperative landscape, which often suffers from bureaucratic inefficiencies and donor dependency.

Kanj Hamade delivered a systemic diagnosis of the ministry's dysfunction. "They have no sovereignty over aid," he argued, pointing out that donors dictate project scope and execution, often without transparency. Hamade proposed that the MoA redefine its relationship with three critical actors: "First, it must rebuild trust with farmers; second, it must assert control over donor agendas; and third, it must dismantle monopolies in post-harvest and food markets." Hamade also criticized the reluctance of rural leaders to engage politically: "The ministry won't change unless farmers demand it."

Noa Sanad expanded the critique to a historical and structural level, arguing that the MoA remains bound by colonial-era hierarchies of land and class. "The state praises resilience instead of providing support," Sanad said. They stressed that land tenure reform is the most pressing and neglected domain for ministry intervention. Sanad also warned that without an intermediary structure to advocate politically for farmers, the ministry will continue to ignore the very actors most vital to food sovereignty.

All three groups – advocates, growers, and experts – share a deep skepticism about the MoA's historic and current role. While there is guarded optimism in light of the new minister's outreach, most remain unconvinced that the institution, as it currently stands, can be the engine of food sovereignty in Lebanon.

Experts agree that the MoA is currently ill-equipped to lead a food sovereignty transformation. However, they see potential leverage points – particularly in the MoA's coordination role, subsidy programs, and

regulatory authority. Experts argue for a redefinition of the MoA's function: not merely as a technical body but as a strategic institution capable of democratic planning, equity enforcement, and infrastructural investment. Their proposed reforms – ranging from land reform and donor regulation to cooperative oversight and rural mobilization – go beyond programmatic tweaks, calling instead for a re-politicization of agricultural governance.

In conclusion, transforming the MoA is a prerequisite for any serious food sovereignty project in Lebanon. But this transformation must be deep, structural, and political – not merely technocratic. Without a realignment of power, accountability, and vision, the ministry risks remaining an obstacle, rather than an ally, in the struggle for a sovereign and secure food system.

Dependency and Structural Fragility

Lebanon's food system is dangerously import-dependent not only for basic commodities like wheat and cereals, but for the very inputs (seeds, fertilizers, and fuel) required for domestic production. Khawand and Hamade both stress how this makes the country acutely vulnerable to external shocks, currency collapse, and global trade disruptions. PY from Agrimovement echoes this, emphasizing how the current model was never designed to prioritize national food needs. Instead, it caters to export markets and entrenched commercial interests. KM, another Agrimovement member, notes this dependency is not a failure but an intended feature of Lebanon's post-war neoliberal trajectory: "The idea was never food sovereignty – it was market liberalization." For KM, food insecurity is the natural outcome of a system that treats food as a commodity, not a right. AB, a grower in the Beqaa, underscores how this macroeconomic fragility trickles down to the field. Increases in input costs and fuel make small-scale production unsustainable, while market prices remain volatile and beyond the farmer's control.

Cooperatives, Donors, and the Crisis of Representation

Many interviewees, including Khawand, Turkmani, Hamade, and WO, highlight the dysfunction of Lebanon's agricultural cooperatives. Instead of vehicles for solidarity, they have become fragmented, under-regulated, and donor-reliant. DN from Agrimovement attributes this failure to both donor instrumentalization and state neglect: "Most co-ops exist on paper. They were designed for funding cycles, not for farmers." Turkmani adds that many co-ops now mirror elite hierarchies, with a handful of individuals benefiting while broader farmer communities are excluded. Even women-led cooperatives, while more functional, often operate more like small businesses than participatory structures. Hamade argues this model will not deliver change unless it is reclaimed as a political tool for collective agency. XY, who works through informal sharing networks, offers a grassroots alternative and stresses the importance of mutual aid and hyper-local trust networks, but acknowledges these are fragile without recognition or infrastructure. UT, a rural grower, calls for more horizontal coordination, noting that many small producers feel isolated or invisible in both NGO and government programming.

Alternative Economies and Agroecological Possibilities

Alternative food economies – farmers' markets, CSA models, informal trade – have grown in recent years. LP, SL, and FL are central figures in this shift, advocating for short value chains, direct producer-consumer ties, and agroecological principles. But these alternatives remain niche. Hamade warns they risk becoming "echo chambers for the urban ethical class" unless scaled and democratized. DN, from Agrimovement, frames agroecology as a social and political project rather than just a new farming method: "Agroecology isn't just about compost – it's about land, labor, knowledge, and power." For Agrimovement, agroecological transitions must be publicly funded, territorially rooted, and collectively governed. Sanad adds that many such initiatives are born from necessity, not ideology. In a collapsed state, people improvise. But unless these alternatives link up, scale strategically, and put pressure on the state, they risk remaining peripheral.

Land, Labor, and the Elephant in the Room

Across all interviews, land access emerges as a central axis of inequality. Sanad calls it the "elephant in the room", while Hamade and PY argue that no serious food sovereignty agenda is possible

without addressing land tenure. In Lebanon, land ownership is heavily concentrated, often inherited across elite or sectarian lines. PY emphasizes how this shapes everything: "Without land, you're not a farmer. You're just labor." KM from Agrimovement also stresses the need to rethink labor. Migrant and seasonal farm workers remain structurally excluded from the food sovereignty conversation – even though they are essential to production. "We can't build food sovereignty on exploitative labor," KM says. Agrimovement's vision includes formalizing labor rights, collectivizing land where possible, and de-commodifying essential inputs, like seeds and water. FL (Beit el Mouzareh) adds that even when land is available, it is often ecologically degraded or priced out of reach. Access without support means little.

Political Power, Organizing, and the Role of the State

A recurring theme across the interviews is the absence of strategic political organization among farmers. Hamade and Sanad note how donor and state programming have individualized rural actors rather than empowering them as a collective class. Khawand and WO agree that without a political agenda, agricultural advocacy remains fragmented and weak. Agrimovement, through PY, DN, and KM, advocates for a rural political movement. They envision a national coalition of producers, rooted in territorial organizing, negotiating at the state level, resisting harmful policies, and proposing alternatives. "Resilience", they argue, has become a neoliberal alibi – used to celebrate survival while ignoring the causes of suffering. SL and WO also insist that food sovereignty cannot be reduced to technical reforms or market tinkering. It must include agrarian justice, class politics, and intersectional equity, particularly around gender and youth. XY and UT voice similar frustrations: they are told to be "entrepreneurial", but lack the tools, protections, and recognition needed.

Despite immense challenges, a counter-narrative is taking shape – growers, scholars, and organizers articulate and envision food as a right, land as commons, and agriculture as a site of resistance and renewal. Together, their views outline a food sovereignty agenda that is structural, political, and, most importantly, local:

- Reduce dependency through local production, especially in vegetables and staples.
- Reclaim cooperatives as democratic, farmer-led institutions.
- Redistribute land and formalize labor rights to dismantle rural inequality.
- Recognize agroecology as a systemic alternative, not a niche.
- Build political power among farmers to challenge both state neglect and donor agendas.

What is needed now, as Agrimovement's members emphasize, is not another pilot project – but a movement: one that connects farms, co-ops, markets, and communities into a coordinated force capable of transforming Lebanon's agrarian future.

Recommendations

Based on this analysis and the insights gathered from advocates, growers, and experts, the following recommendations balance the need for structural transformation with concrete, actionable steps for achieving food sovereignty and agricultural reform in Lebanon.

Near-Term Policy Recommendations

The following recommendations constitute immediate, actionable, and achievable change within current political constraints and without requiring deep structural overhaul – though deeper change will still be needed to build a genuinely sovereign food system.

Low-hanging fruit – such as cooperative revitalization, market access, farmer training, and consumer awareness – may not transform the political economy of agriculture, but they would nevertheless improve the situation meaningfully by stabilizing struggling farmers, building public trust in local food systems, and laying the groundwork for more ambitious reforms.

Strengthen and Support Functional Cooperatives

- CSOs and the MoA should build on the relative success of women-led agro-processing

cooperatives.

- Advocacy groups must continue to provide farmers with targeted support, such as training and legal aid, while the MoA should set up a low-interest loan program.
- Food sovereignty organizers and advocates must encourage peer learning between functional and struggling cooperatives.
- Legislators and the MoA must introduce new cooperative legislation that ensures transparency, accountability, and participatory governance.
- The MoA must prioritize support to cooperatives serving local markets over donor-driven export cooperatives.
- Advocacy groups and CSOs must provide capacity-building and legal aid for the democratization and revitalization of existing cooperatives.

Decentralize Agricultural Training and Agroecology Knowledge Hubs

- Donors pursuing food sovereignty initiatives must invest in localized farmer-to-farmer training centers led by groups like SOILS, Buzuruna Juzuruna, and Nohye el Ard.
- Donors and the MoA must fund workshops on composting, seed-saving, and soil health with the help of NGOs already doing the work.

Reinforce Transparency in Organic Certification

- The MoA must simplify and subsidize organic/agroecological certification for smallholders.
- Advocacy groups should introduce participatory guarantee systems (PGS) as alternatives to expensive third-party certification.

Establish Protected Farmers' Market Zones

- Advocacy groups and the MoA should offer rent-free or subsidized space for weekly CSA distributions and farmers' markets in underserved areas.
- Donors, advocacy groups, and the MoA must prioritize small producers with verifiable agroecological practices.

Create a Farmer–MoA Liaison Committee

- Advocacy groups must set up a rotating advisory group of small-scale farmers to meet quarterly with representatives of the MoA.
- The MoA should institutionalize the recent outreach efforts and ensure follow-up.

Regulate Water Distribution Fairly in High-Need Regions

- The MoA, in coordination with advocacy groups, should pilot transparent, monitored water-sharing systems in politically marginalized farming regions like the Beqaa.
- The MoA must publicly report allocation decisions to reduce sectarian and clientelist abuse.

Longer-Term, Structural Policy Shifts

The recommendations discussed above should not be mistaken for sufficient solutions. Interviewees repeatedly pointed to structural exclusions – in land, capital, water, and political access – that limit the transformative potential of small interventions. Without addressing these root issues, even successful grassroots projects remain fragile. The following recommendations require political reform, stronger state capacity, or significant changes in the economic model.

Land Reform and Fair Tenure Systems

- Legislators must address discriminatory inheritance laws and secure tenure for tenants and women farmers.
- The MoA must develop a national land registry to reduce informal land claims and monopolies.
- The MoA, in coordination with farmers' organizations and advocacy groups, must launch a land access program targeting youth, women, and small-scale farmers. This entails land reforms where the state would negotiate access to, or the outright expropriation of, major landowners' private property, freeing up fields and farming hectares for the above-mentioned communities.

- Advocacy groups in coordination with the ministry must establish a national land bank to lease underutilized land at subsidized rates for agroecological use.
- Legal experts, advocates, and legislators must review and reform inheritance and land ownership laws that prevent equitable access.
- Reorient State Subsidies toward Smallholder Production and Shift Agricultural Policy from Export Orientation to Domestic Food Security
- The MoA should reclaim sovereign control over donor aid and require alignment with national food security priorities.
- Phase out export-focused, elite-captured subsidies.
- Create a national coordination platform that includes the ministry, donors, NGOs, and farmer groups to prevent overlaps and silos.
- Shift from project-based aid to long-term public investment in rural infrastructure and services.
- Redirect state support toward staple crop production, especially wheat, pulses, and vegetables, for domestic consumption.
- Prioritize crops for local consumption, particularly vegetables, legumes, and cereals.
- Provide subsidies, credit, and infrastructure support to producers growing for domestic markets.
- Revise trade agreements and regulate donor-subsidized farming, either from private initiatives or major international NGOs (INGOs) that push farmers toward export-only crops like avocados, apples, and grapes.

Establish a National Seed Bank Network

- Legislators and the MoA should legally recognize community seed systems and fund decentralized seed-saving initiatives in collaboration with advocacy groups and local municipalities.
- The ministry must protect farmers' rights to save, exchange, and breed local seeds.

Create a Unified Food Sovereignty Strategy across Ministries and Support Agroecology and Short Value Chains through Public Investment

- Require coordination between the MoA, the Ministry of Economy, and relevant NGOs and donors under a shared food sovereignty framework.
- The state must establish a national agroecology support fund for training, seeds, composting, and technical assistance.
- Invest in territorial food systems: local processing hubs, seed banks, and distribution platforms.
- Scale up CSAs and farmers' markets through infrastructure support.

Legal and Financial Recognition for Alternative Market Models

- The state must recognize CSAs and community-based markets as legal entities eligible for support.
- The ministry, along with legislators, has to develop tax breaks or micro-subsidies for community food programs, seed swaps, and alternative food chains.

The Lebanese state, through its executive, legislative, and judicial branches, can put in place the mechanisms to undertake the structural overhauls described above. The state, however, will not shift resources toward these changes without significant political pressure – hence the role of advocacy groups, donors, and farmers' representatives in developing a political strategy and campaign that pressures the state to wield its instruments for the public good.

Conclusion

The narratives and analyses gathered from farmers, agricultural advocates, and experts across Lebanon reveal a deeply fragmented but vibrant landscape of struggle, innovation, and resistance within the country's agrifood system. Despite diverse perspectives, there is a shared diagnosis of Lebanon's agricultural vulnerabilities: historical inequities, entrenched donor dependency, state

neglect, and a heavy reliance on export-oriented and import-dependent models shaping the system. These challenges have only intensified in the wake of Lebanon's ongoing economic and political crises.

Farmers and grassroots actors – from the organizers at Agrimovement to local producers in Akkar, the Beqaa, and Mount Lebanon – express both frustration and resilience. They emphasize the need for territorialized food systems rooted in community, access to land, and agroecological principles. Agricultural experts echo this emphasis, calling for a structural shift toward food sovereignty – defined not solely as the right of people to healthy and culturally appropriate, ecologically produced food, but also as the right of communities to define their own food and agricultural systems.

As outlined, the problem is not a lack of alternatives, but the absence of enabling conditions: access to land, stable infrastructure, democratic cooperatives, political organization, and coordinated state policy. Many cooperatives are donor-driven, elite-dominated, or dysfunctional. Women-led agro-processing co-ops stand out as promising models, but they remain isolated. Youth-led collectives and movements like Agrimovement are reimagining what agriculture can look like, but face burnout, exclusion from decision-making, and limited support.

The recommendations that emerge are clear. Lebanon must reorient its agricultural policy away from export markets and toward food sovereignty by supporting local production for local consumption. The state must reclaim its role – coordinating donor support, investing in agroecology, democratizing land access, and reviving cooperatives as collective institutions rather than profit-driven enterprises. Farmers must be seen not merely as producers, but as political agents. Without meaningful inclusion of their voices in governance, reform efforts will remain fragmented and ineffective.

In sum, Lebanon's food system needs both pragmatic near-term interventions and bold structural change. The state can immediately act on several fronts to empower producers, decentralize food systems, and stabilize local markets – but long-term sovereignty requires tackling the core inequities of land access, economic policy, and political voice. Achievable short-term change must be pursued with a view toward deeper, systemic transformation.

Ultimately, food insecurity is not a technical crisis but fundamentally a political one. Building a food-sovereign Lebanon requires a national strategy rooted in justice, equity, and ecological resilience. It must empower small-scale farmers, address the structural conditions of exclusion, and resist the pressures of market liberalization and donor capture. As multiple voices in this study make clear, the seeds of transformation already exist. What is needed now is the political will – and collective organization – to cultivate them.

Endnotes

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Beekeeper extracting a honey sample from a hive for tasting, Mtein, Lebanon, May 2025. © Leila Rossa Mouawad – ARI Image Allies (AIA).

Donor-Driven Agricultural Policies in Lebanon: Putting Farmers Last?

Kanj Hamade

Introduction

Lebanon has consistently failed to design and implement agricultural policies that prioritize farmers and rural communities. Since the French mandate period, political, social, and economic dynamics have instead favored capital accumulation across the agricultural value chain – benefiting input suppliers and financial capital upstream, and prioritizing agroindustry and trade downstream. Even during the Chehab administration (1958-1964) – when the state recognized the need for wealth distribution and developed what appeared to be, at least on paper, a coherent agricultural policy – Lebanon's ruling class was able to divert resources toward influential and well-connected farmers and landlords.[1]

Lebanon emerged from the civil war (1975-1990) as a mosaic of territories and political spaces, with varying power distributions between state and non-state actors. In this political landscape, the state bargains and negotiates with political and economic actors, often accepting the coexistence and superposition of multiple systems of power, decision-making, and legitimacy.[2] This dynamic applies to agricultural policymaking, where a weak and uninterested state with limited power is ultimately instrumentalized or simply sidelined by capital, political parties, international organizations, or donors, all of whom primarily aim to advance their own agendas.

Compensating for the state's limited capacity and willingness to design and implement nationwide policies, donors have become central actors in Lebanon's agricultural sector, shaping its priorities and programmatic directions since the mid-1990s. Tracing donor intervention is therefore essential to understanding how agricultural development has been envisioned in Lebanon and why challenges persist.

Understanding the trajectory and limitations of the donor-Ministry of Agriculture (MoA) policy framework in Lebanon is particularly necessary in the current moment of profound economic and political transformation. Since 2019, three severe shocks have significantly impacted agricultural input prices: the 2019 financial crisis, the 2022 war in Ukraine alongside post-COVID inflation, and the 2026 closure of the Strait of Hormuz and its consequences for energy and fertilizer costs. Compounding these economic shocks, since 2023 Lebanon has faced successive waves of Israeli military escalation culminating in the 2026 invasion of border villages in South Lebanon and Israel's large-scale, deliberate destruction of homes and infrastructure, ethnic cleansing, and ecocide.

This study analyzes how donor-funded projects have been constrained not only by political-economy dynamics, shocks, and crises, but also by donors' reluctance to challenge established government perspectives and advocate policies centered on farmers. It argues that donor projects have not put farmers at the center of their action and, with few exceptions, have not led to farmers' empowerment and integration into fair food systems. Specifically, the study reviews various thematic areas of donor support, including improved competitiveness and sustainability, export-oriented development, stabilization amid the Syrian crisis, and support to the cooperative sector. The analysis also tackles the rising interest in agroecology since 2019 and the 2025 shift in the discourse and policies of the MoA.

EU Interventions and the Resistance to Reform

In the early 1990s, input suppliers backed by open import credit lines from Lebanese banks actively promoted the intensification of agricultural production. In the absence of functioning agricultural extension services (i.e., technical support for farmers) and with no other form of farmer credit, input suppliers leveraged their dominant position to push for an unsustainable production model based on an intensive and irrational use of inputs.

Instead of enhancing competitiveness, the intensification model had the opposite effect: farm productivity remained low despite high yields; farm gate prices were constrained by harvest-time oversupply; traders retained their monopoly over postharvest infrastructure; and wholesale market governance remained unfair.[3] To make matters worse, excessive pesticide residues and poor product quality hindered access to export markets.

The uncontrolled and unregulated growth also had severe negative environmental and socioeconomic impacts. As early as the late 1990s, studies documented alarming nitrate pollution in rivers and groundwater.[4] From a socioeconomic perspective, high production costs and low farm gate prices eroded farmers' margins. Most of the value added from agricultural output was extracted by input suppliers, traders, and bankers (through import credit lines). Thus, in the 1990s post–civil war reconstruction and economic growth period, agriculture remained subordinated to banking and trade as it had been before the war.[5]

The 1990s were also characterized by a notable absence of public policies or structured plans to monitor, control, and regulate an increasingly unsustainable and inequitable agricultural production system. It was only toward the early 2000s that awareness began to emerge regarding the critical importance of establishing a competitive agricultural sector based on sustainable resource use and resilient food production systems. This later period also saw the initiation of donor-funded interventions designed and implemented in close collaboration with the MoA, embedding project staff and offices within the ministry itself.[6]

Despite their integration within the MoA, donors quickly recognized that interventions that neglected institutional capacity-building and policy reform were inherently limited in their impact. For instance, the EU-funded Agriculture Development Programme (2003-2008), which aimed to support the production and marketing of agricultural products, encountered substantial challenges due to the "limited management capacity of the MoA and the lack of institution-building activities", as well as insufficient attention to "structural problems of farmers, such as access to credit".[7]

Acknowledging these shortcomings, the EU's subsequent intervention, the Agricultural and Rural Development Programme (2011-2017), was designed as a comprehensive sectoral support initiative. Its objectives included addressing institutional weaknesses, reforming policy frameworks, enhancing production and quality control technologies, and expanding access to credit through schemes tailored to agricultural needs. Still, this new program fell short of achieving significant reforms and institutional improvements. For example, the program's activities on irrigation infrastructure and agricultural roads achieved significant infrastructure enhancements in targeted areas but failed to establish effective irrigation policy frameworks or improved irrigation management practices. The Kafalat agricultural credit scheme was successful in improving access to finance for medium-size farmers, but it did not offer a sustainable, long-term solution for agricultural financing. Similarly, technical assistance provided to farmers had limited impact, failing to enhance public extension services or mitigate the dominance of input suppliers who continued to encourage unsustainable use of inputs.

The limited impact of EU agricultural initiatives at policy and institutional levels underscores a critical insight: perceived institutional capacity gaps often reflect deeper issues related to political unwillingness or resistance to reform, and in some cases intentional political sabotage. A flagrant instance was the closure by the MoA of 12 milk collection centers established between 1998 and 2002 by the International Fund for Agricultural Development. In the dairy sector, large producers had direct control over milk prices and abused their dominant position to drive the milk price down, putting significant pressure on farmers' profit margins. To address this, the fund and the MoA established regional milk collection centers to aggregate small producers' milk supplies and stabilize prices. As soon as the project

ended, however, the MoA closed the centers. The official reason was their alleged economic nonviability; however, there is substantial evidence suggesting that large producers strongly lobbied the MoA to close the centers. As this example illustrates, resistance to reform stems primarily from the MoA's efforts to maintain a status quo beneficial to nonfarming powerful actors, such as input suppliers, traders, and large agribusiness. As a result, the policy and institutional constraints identified at the design phase of the Agricultural and Rural Development Programme remained unchanged upon its completion.

Overall, EU efforts to improve agricultural competitiveness and sustainability have yielded limited results. The persistent issue of irrational input use remains unresolved, as neither the MoA nor donors have been able or willing to overcome the influence of input suppliers. Similarly, EU programs have struggled to integrate small farmers into agricultural export value chains.

In contrast, private sector initiatives have successfully leveraged the 2002 EU-Lebanon agreement's export opportunities, namely preferential tariff rates and quotas. Trader-led semi-integrated value chains emerged, where traders provided technical assistance to medium-size farmers to ensure export-quality production in terms of varieties, grades, and pesticide residues. Traders aggregated production in modern cold storage facilities and marketed it in branded packaging in the EU. A notable example is the export of table grapes to the EU during the December-January festive period.

USAID Goes Solo: The Consequences of Sidelining the MoA

The private-sector-led responses to EU trade agreements became a key reference for the value chain projects of the US Agency for International Development (USAID), which prioritized access to export. The US government invested heavily in the agriculture sector through multiyear projects, such as the Lebanon Value Chain Development project (2012-2018) and the Lebanon Agriculture and Rural Empowerment project (2019-2024), averaging around US$10 million annually – a significantly greater level of funding than that of other donors.

By relying on strong private sector actors, USAID's approach brought significant changes in several value chains, particularly avocados, cherries, apples, table grapes, olive oil, honey, and traditional food products (mouneh). USAID's model was subsequently adopted and expanded by other donors such as the EU private sector development projects (2019-2023) and the Netherlands SADER I and II projects (2019-2023 and 2023-2027, respectively).

Despite its relative success, USAID's approach was highly politicized. By operating independently of the MoA and supporting non-state, politically affiliated actors, the US government used USAID projects as a tool to advance political agendas. These projects prioritized support for Christian rural areas and directed substantial funds and capacity-building assistance to politically affiliated organizations such as the Hariri, Moawad, Safadi, and Daher foundations, as well as organizations created through USAID's Office of Transition Initiatives (2007-2010) that have become major partners in the implementation of donor-funded projects (both USAID and non-USAID). More importantly, USAID's approach set a precedent: implementing projects without coordination with the MoA is not only more efficient but also facilitates the instrumentalization of agriculture projects to reinforce selected political elites through donor-funded clientelism.

The Syrian Crisis: Stabilization Priorities and the Missed Development Link

The sidelining of the MoA from the coordination and effective oversight of donor-funded projects became a defining feature of the 2011-2019 period. During this time, the Syrian refugee crisis and the political distancing of donors from Amal- and Hizbullah-affiliated ministries and institutions shaped donor interventions along two main lines.

The first line of donor intervention tackled economic development through improved access to export markets. Despite the economic challenges triggered by the Syrian crisis, donors continued to

assume that export remained the primary route for agricultural development. A key operational advantage of this approach was the ability to rely on private sector actors or third-party local NGOs that created parallel for-profit private businesses to manage exports, especially for mouneh.

This approach spared donors and implementing partners the "hassle" of tackling dysfunctional and unfair food systems, leaving unaddressed critical issues such as wholesale market governance, fragmented production, the land-tenure system, oligopolistic control over postharvest infrastructure, and the need for policy and institutional reforms. In practice, this approach channeled support to a limited number of producers through pilot actions that did not alter overall food system dynamics. It demonstrated that pilot interventions, even if successful, cannot create a broader impact if they are not linked to policy and institutional changes. Operating with minimal coordination with the MoA, these projects perceived the absence of coordination as the more effective operational choice.

The second line of intervention was embedded within the successive Lebanon Crisis Response Plans (LCRP, 2015-2022), which integrated the donors' and the government's response to the crisis created by the Syrian war. The LCRP recognized agriculture's potential for stabilization and peacebuilding through employment and income generation for both Syrian refugees and host communities. In fact, as of 2013, local endogenous dynamics, independent of donor projects, propelled agricultural growth in rural areas that witnessed a significant influx of Syrian refugees. These local responses were triggered by increased food demand, the presence of low-wage labor, and credit lines from local traders and input suppliers. For instance, satellite imagery revealed considerable growth in irrigated agriculture in northern Beqaa and a boom in greenhouse production in Akkar. These dynamics have had a tangible positive effect on local livelihoods and social stability.[8]

Interventions within the LCRP have prioritized food security by providing food, in-kind, and cash transfers to refugee households, supporting projects that promoted home-based and subsistence agricultural production, home gardening, small-scale home-based poultry and dairy units, with particular emphasis on women's engagement. The LCRP also prioritized cash-for-work, employment-intensive investments in local infrastructure, including the rehabilitation of local irrigation networks and reforestation initiatives. Nonetheless, the LCRP projects, especially prior to the 2019 crisis, overlooked the opportunity to implement the Humanitarian-Development-Peace Nexus[9] and integrate development as a central element of interventions.[10]

One exception was the Food and Agriculture Organization (FAO)'s Green Plan support to the Green Plan General Directorate (2016 and 2024), which was implemented through successive projects funded by the Netherlands, Denmark, and the EU MADAD trust fund. This plan was successful in leveraging farmer grant schemes to support farm-level investment such as land reclamation, land rehabilitation, orchard establishment, irrigation networks, and farm water reservoirs.

In the absence of agricultural credit schemes and effective extension services, the program allowed vulnerable farmers to make sustainable, long-term investments in productive assets while also creating both short- and long-term jobs for Lebanese and Syrian workers. It promoted the Humanitarian-Development-Peace Nexus by linking immediate employment opportunities with long-term agricultural investment. The FAO's collaboration with the Green Plan was one of the few programs that put farmers at the center of the intervention while also advocating for key policy changes in targeting and management procedures. The scheme revitalized the Green Plan by strengthening its staff capacity, introducing an electronic database of beneficiaries, and embedding more transparent and socially responsive selection criteria. Overall, the FAO's decision to work with, rather than sideline, public institutions induced initial institutional and policy reforms in the Green Plan's strategic vision and operations.

The 2019 Crisis: Shifting from Stabilization to Development

The 2019 economic crisis shocked Lebanon's agriculture sector, simultaneously exposing its vulnerabilities while also revealing pathways for resilience. The collapse of the banking system abruptly disrupted the input supplier–led and credit-dependent production model. The sharp constraints on farmers'

ability to access inputs forced negative adaptive responses – such as the reduction of planted areas or the use of lower-quality inputs – but also positive ones, such as more rational input use.

At the same time, the crisis elevated agriculture from a politically marginal economic activity to a central element of political discourse, as agriculture reentered the public debate framed as a pillar of national resilience and economic survival. The most emblematic expression of this shift was the call by Hizbullah's secretary-general for an "agricultural jihad"; across the political spectrum and within civil society, there emerged a broader narrative that glamorized farming and a return to the land, particularly during the COVID-19 lockdown.[11]

Post-2019 donor projects shifted the discourse, reframing agriculture as a vector of economic development rather than only an instrument for stabilization – a shift that induced renewed donor engagement with the MoA. In parallel, significant funds were allocated to food security and farmers' livelihood recovery programming that targeted Lebanese populations, as well as to agroecology interventions. The World Bank played a leading role in propelling donor reengagement with the government. The bank worked closely with the government to develop sectoral strategies, design post-crisis emergency interventions, and draft the Green Agri-Food Transformation for Economic Recovery (GATE) Project, a US$200 million loan facility aimed at sectoral recovery. It also provided technical support and emergency loans to the government for the direct import of soft wheat.

Nevertheless, donor reengagement with the MoA remained limited to improved coordination and collaboration mechanisms and did not translate into direct financing. In fact, apart from the GATE project above, no donor-funded projects are yet directly implemented by the MoA. Donors continue to favor collaboration with MoA-affiliated general directorates – such as the General Directorate of the Green Plan, the General Directorate for Cooperatives and Mutual Funds, and the Lebanese Agricultural Research Institute – instead of with the ministry's core itself, the General Directorate for Agriculture.

For example, donor collaboration with the Lebanese Agricultural Research Institute exponentially increased after 2019. The financing of the institute's implemented projects was linked to the postcrisis panic around food security and the availability of funding through the EU Food and Resilience Facility – an instrument established in 2022 as part of the EU's plan to address risks to food supply and resilience caused by the war in Ukraine and associated market disruptions. Food security concerns rapidly moved to the top of the donor agenda, accompanied by a significant increase in funding dedicated to the wheat value chain. However, this rapid mobilization also revealed a high degree of fragmentation, reflected in weak coordination among projects and a duplication of interventions pursuing largely similar objectives, such as enhancing seed production, providing equipment, and upgrading the cereals and pulses value chains.[12]

Underlying these coordination challenges is a deeper policy issue in the way donors and the Lebanese government have approached food security issues: framing the response in terms of food availability, or Lebanon's capacity to import and produce soft wheat, rather than in terms of food access, or the ability of vulnerable households to afford food. The resulting policy emphasis on domestic soft wheat production to address trade deficits and hedge against a hypothetical collapse in the international wheat supply overshadowed possible structurally sound, farmer-focused rural development strategies. These would prioritize hard wheat, local varieties, sustainable crop rotation cycles, and value-added approaches capable of engaging farmers in resilient and profitable production systems. In fact, many initiatives along these lines, including using local wheat varieties in bread and pasta production, have emerged endogenously from local communities rather than through donor-driven projects. Now that the acute food security panic mode has waned, the relevance and sustainability of a soft-wheat-centered strategy are questionable.

Support for farmer recovery through input provision was also a major component of postcrisis donor-funded emergency interventions. Input distribution through vouchers or an in-kind scheme was included in most projects, driven by concerns over a potential collapse in agricultural production following the contraction of input credit lines, and strongly advocated by input suppliers. While it may have enabled select farmers to cope with the immediate effects of the crisis, the overall impact of input distributions on farming households has not been systematically documented. In fact, field practitioners report that the amounts provided were modest relative to actual needs, and that many farmers used the vouchers to cover other basic household expenses. In addition, implementation delays significantly

reduced the relevance and effectiveness of interventions that were originally designed as emergency measures. The sharp increase in agricultural input prices following the war in Ukraine and post-COVID inflation likely diluted the purchasing power of the vouchers.[13] More importantly, the approach resulted in a substantial transfer of public funds to input suppliers, further reinforcing their dominant position within agricultural value chains.

The Growing Interest in Agroecology

Another major shift following Lebanon's economic and financial crisis has been the growing interest in agroecology.[14] Donors' agroecology interests and Lebanon's endogenous agroecological movement have emerged from distinct dynamics and continue to function in different spheres, with only a few actors overlapping. While the agroecological movement arose from political mobilization, donor funding for agroecology was guided by the EU Green Agenda and the EU Farm to Fork Strategy.[15]

The Rise of Lebanon's Movement: Agroecology and Farmers' Rights

The economic crisis catalyzed the emergence of a sociopolitical movement focused on agroecology and farmers' rights that grew out of the 2019 uprising (thawra). The 2019 uprising did not emerge in isolation; rather, it was rooted in decades of accumulated civil society engagement and political activism, much of which had already been shaped by environmental struggles. As documented by Julia Choucair,[16] environmental grievances – particularly those linked to waste management, infrastructure failure, and natural resource mismanagement – have been central to Lebanon's alternative social and political movements. They became clearly visible during both the 2015 "You Stink" protests and the 2019 uprising as vehicles for broad demands for political accountability and systemic reform. The key shift between 2015 and 2019 lies in the growing capacity and willingness of a predominantly urban middle-class movement to reach toward rural areas and farmers, or at least to explicitly seek such alliances, thereby laying the foundations for a more inclusive and socially grounded agenda.

The grassroots movement in Lebanon, currently represented by two key bodies – the Agroecology Coalition in Lebanon (ACL) and the Agricultural Movement in Lebanon (Agrimovement) is emerging as a dynamic, eclectic, and increasingly politicized field, evolving from primarily environmental initiatives into a broader project of social justice, farmer empowerment, and systemic transformation. This realization marked a strategic shift: in November 2025, the movement expanded into a broader advocacy-oriented alliance capable of influencing public discourse and policy. The 2024 Israeli war on Lebanon further deepened the movement's political awareness, pushing it toward a shared language and collective practice that linked ecological sustainability with socioeconomic and, at least for some components of the movement, political and systemic change. For many core actors, environmental protection was never the sole objective; rather, the movement became explicitly grounded in struggles for peasant autonomy and social justice.

The movement is gradually becoming explicitly political. In an unprecedented move within donor-funded contexts, the movement is openly questioning and contesting the policies and strategies of the MoA-donor sector governance framework, including strong, outspoken criticism of the draft seed law and the MoA's upcoming agricultural strategy. While researchers and practitioners currently dominate its leadership, the movement is actively developing mechanisms to integrate farmers into its strategic core, ensuring they are not merely beneficiaries but central political actors. The need for the movement to make an early strategic choice was triggered by its forced entry into the political arena following the MoA's proposed seed law, which movement actors perceived as a direct threat not only to farmers but also to the practices of several member organizations. As a result, the movement rapidly shifted from a small circle of pioneers into a dynamic political actor capable of generating forms of political militancy through alliances with influential civil society organizations. It makes full use of its deep connections to the 2015 and 2019 political movements. Confrontation with the donor-MoA policy framework spiraled with the expansion of the donor-MoA policy programming agenda and the multiplying arenas of direct conflict. The movement's early politicization and confrontational positioning are thus partly explained by its accelerated involvement in policymaking processes and its rapid insertion into institutional dynamics, forcing strategic choices that many social movements face only

at much later stages of their development.

Donor Interest in Agroecology

In continuity with the pre-crisis projects that supported good agricultural and climate-smart practices, donor-funded agroecology projects focus on technical knowledge transfer to farmers and the development of alternative short value chains. Although some projects include advocacy components, it remains unclear how these will be operationalized given the limited capacity of implementing partners to leverage EU agroecology funding for meaningful farmer political empowerment. The EU Green Agenda emphasizes ecological transitions in production systems, such as changes in farming practices aimed at achieving environmental targets, rather than transitions toward strengthening farmers' social agency or political empowerment. Even if the EU were open to supporting such a sociopolitical transition, a second constraint relates to the need for implementing partners (namely international and local NGOs) to maintain alignment with the MoA and sector coordination mechanisms, as more confrontational or politically oriented advocacy risks creating tensions, positioning organizations as troublemakers, and potentially jeopardizing future funding opportunities. Ultimately, these alignment imperatives structurally discipline NGOs' advocacy strategies.

As a result, donor-funded agroecology advocacy is likely to remain confined to technically acceptable, nonconfrontational domains such as awareness-raising, stakeholder dialogue, and light institutional processes, rather than structural challenges to existing power relations within the agricultural sector. Advocacy is framed as consultative participation rather than transformative action, prizing institutional compatibility over contestation. This configuration effectively pushes NGOs into managerial and technical roles, limiting their capacity to act as vectors of social or political transformation. It may also partly explain the current disconnection of donor-funded agroecology projects from the broader efforts to build a politically engaged agroecological movement. This continues even though several NGOs straddle both spheres, as founding members of the agroecology movement and implementing partners in donor-funded agroecology projects.

While donor funding remains central to the functioning of some organizations within the agroecology and farmers' rights movement, traditional donors have not shown interest in financing the movement per se, and the movement, particularly its more politically radical segments, has not yet actively pursued such funding.[17] Despite the current separation between conventional donors and the movement, it is likely that these actors will converge in the near future. Funding entails political recognition, that is, recognition by both donors and the MoA that the movement has a role to play. However, early political recognition often carries a considerable risk

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of institutionalization, or integration into donor-MoA governance frameworks and instrumentalization of the movement, especially its less radical members, to advance mainstream policy agendas. This risk highlights a strategic tension between early institutional recognition and policy integration, and a movement-building strategy that prioritizes autonomy through the construction of a strong, representative, democratic, and independent farmers' and activists' movement, structurally decoupled from its initial NGO base. Such a shift would move the movement away from NGO-mediated advocacy toward a model of direct political action in which farmers themselves, individually and collectively, become the primary political subjects and organizational backbone of not only agroecology but also a broader agricultural movement.

Ultimately, agroecology is not merely a set of technical practices but a political engagement grounded in social justice and right-to-food principles. Stripping the political out of agroecology reduces it to yet another donor-driven label that does not tackle the systemic unfairness farmers face. A transition toward a broader farmer-led movement is therefore necessary, even if it entails internal fragmentation where some actors disengage due to discomfort with a confrontational political stance, preferring technical training and service delivery over direct political struggle.

Shaping the Cooperative Sector

Despite specific success stories, donor interventions have failed to use cooperatives as a pathway for farmer empowerment and food system transformation. Interest in supporting cooperatives started after the liberation of South Lebanon in 2000 and significantly intensified after the 2006 war. Cooperatives were seen as key to the development of liberated areas and as a tool for postwar recovery. Both donors and the MoA saw opportunities and showed interest in supporting cooperatives for development and clientelist objectives. In fact, in one of the rare instances of direct public financing, the MoA introduced a dedicated budget line from 2006 to 2011 for financial grants to cooperatives.

The availability of both donor and MoA grants sparked a rapid increase in the number of cooperatives. A clear distinction emerged between active cooperatives and "ghost cooperatives" that were established solely to capture funding without any real intention to engage with their communities. The proliferation of ghost cooperatives pushed donors to concentrate resources on a limited number of active ones that were repeatedly selected for support.[18] As a result, support was unequally distributed, perpetuating a narrow focus on a few "success stories" rather than strengthening the sector as a whole.

The cooperative sector was further shaped by the emphasis on export-oriented and high-value products: olive oil, honey, and fruit for export. This development paradigm defined cooperative viability through export potential and access to premium domestic markets. In parallel, strategies for women's cooperatives reinforced an exclusivity track that steered many rural women toward establishing mouneh cooperatives or producer groups, typically supported with minimal initial capital investment, which in turn limited their capacity to generate substantial income.

Furthermore, through this approach, donor projects contributed to the empowerment of third-party intermediaries, particularly local NGOs and private companies, which provided product development and technical support to cooperatives but often retained control over commercialization channels, especially in the case of women's cooperatives. At no point did donor-funded programs or local NGOs actively promote cooperative expansion or mergers, or support cooperatives in directly managing export sales. In addition, limited effort was made to engage farming communities, support membership expansion, or advocate for fundamental policy changes. In practice, the approach entrenched dependency on external actors and aid and created barriers to cooperative empowerment.

Overall, current dynamics within the cooperative sector have prompted distrust among farmers and growing criticism among practitioners, highlighting the limitations of a cooperative support model built on proliferation (large number of cooperatives), typological replication (same type of cooperatives), and low-capital assistance (each given limited financial support). Yet examples of alternative interventions suggest that a fundamentally different development pathway is possible.

For example, the Fondazione Giovanni Paolo II (FGPII), through projects funded by the EU and Italy (2021-2025), is adopting an implementation strategy that combines farmer engagement and

cooperative empowerment with policy advocacy.[19] By shifting from low investment to capital-intensive and long-term engagement, the FGPII's approach represents a clear departure from low-impact intervention models that support many cooperatives while allocating a small budget to each. To function as effective economic entities, cooperatives require substantial upfront investment: "Investing US$10,000 in a cooperative produces only cosmetic change and fails to alter its economic trajectory."[20]

To rationalize higher capital requirements and address donor concerns, the FGPII uses a per capita investment model that caps investment at US$3,000 per farmer and anchors capital allocation to membership size. In fact, capital investment is not treated as a standalone input but linked to membership expansion and democratic management of the cooperative. The approach places community engagement and inclusion at the very entry point of cooperative development: "Rather than starting with existing cooperatives, many of which are inactive or functionally 'dead', interventions begin by engaging directly with farmers."[21] Through facilitated dialogue, farmers collectively identify and prioritize their shared challenges, forming the basis for renewed cooperative action. This farmer-first approach reinforces ownership and rebuilds trust in collective action: "Inclusion is not treated as a by-product but as a central objective."[22] Furthermore, the FGPII's approach emphasizes intensive, hands-on coaching and technical support. Continuous proximity is necessary to mediate conflicts, build trust, institutionalize procedures, and support decision-making before internal tensions undermine collective efforts. This sustained engagement is particularly critical during the early stages of transformation, when governance systems are fragile and member confidence remains low.

The FGPII calls for a fundamental shift in how public institutions conceptualize cooperatives: "They must change their perspective, viewing cooperatives as vibrant, competitive entities, rather than small organizations doing small local business."[23] This reframing has direct implications for policy design and investment priorities. The FGPII approach implicitly recognizes that advocacy and farmer mobilization should be an integral component of cooperative empowerment. It highlights the need to strengthen not only cooperatives' socioeconomic capacities but also their ability to organize, represent their interests, and challenge existing policy frameworks, thereby opening space for a potentially significant and unprecedented evolution within donor-funded programming.

The Current MoA: Symbolic Announcements and the Turn to the Private Sector

Following the 2025 appointment of a Minister of Agriculture with a strong background in rural sustainable development, agricultural development practitioners and donors perceived a window of opportunity for meaningful improvements in both agricultural policy and interventions. The new minister rapidly launched multiple initiatives and generated a strong momentum of action, signaling a clear intention to break with past practices. However, the current burgeoning of initiatives has not yet translated into a coherent, well-articulated, and transparent policy orientation with strategic choices for the future of Lebanon's agriculture. One year after the appointment, three key elements of MoA action can be identified.

First are the MoA's willingness and proactive efforts to regain sovereignty over aid and to coordinate donor-funded projects. This was clearly demonstrated at the beginning of the minister's tenure, notably through his personally chairing coordination meetings with donors and NGOs.

The second element is the multitude of announcements regarding the creation of new committees whose roles, mandates, and operational modalities often remain unclear. These include the National Strategic Committee for Agriculture, mostly composed of academics and representatives of the private sector; the Apple Committee; the Lebanon Advanced Rural Advisory Services; the Cannabis Cultivation Management Committee; and the Agriculture Investment Committee, to name a few. These types of announcements are typical of Lebanon's "active ministers". To a certain extent, these committees are seen as a platform for reinforcing stakeholders' engagement. However, their proliferation raises concerns regarding the creation of parallel structures and lobbying groups that can take over the role of the ministry itself, fragmenting its authority and accountability and undermining

policy coherence.

The third characteristic of MoA action, or underlying vision, is the significant role accorded to capital and the private sector as a key driver of agricultural development, as opposed to a farmer-centered sector and policy orientation. The professionalization of agriculture is not framed as a way to improve farmers' livelihoods or advance rural development, but rather as a means to encourage high levels of private sector investment, advanced technical innovation, and deeper integration of selected farmers with value chain actors: in other words, a shift toward high-capital agriculture.

This orientation is reflected across multiple committees. It is evident in the proposed model for medical cannabis production, which is likely to generate rents and value capture for large corporate actors, and in the promotion of export-oriented contract farming schemes. It is further institutionalized through the preparation of an agricultural investment strategy by a committee with strong private sector representation and reinforced by the prominent role of private "innovative" actors in drafting the seed law.

This emerging policy direction is already visible in elements of the new agricultural strategy, which point toward the development of "license to grow" regimes and contract farming arrangements as preconditions for production, mirroring the regulatory models used in tobacco and proposed for cannabis, but now extended to food production systems. Such frameworks structurally advantage large farmers and agribusinesses, while excluding those unable to access or comply with these contractual and licensing arrangements. The underlying objective is securing value appropriation for private businesses by creating protective regulatory environments that enable price control and market dominance, while establishing technical barriers to entry through licensing regimes.

A similar model is emerging in the draft fishery law, which seeks to legally protect fishery investment by imposing the same obligations on artisanal and industrial fishing or imposing technical and administrative requirements that small fishers cannot meet. This reproduces the regulatory logic of the proposed seed law that imposes technical and administrative standards that act as de facto exclusion mechanisms for farmers, small businesses, and community groups willing to engage in seed and seedling production.

This policy orientation, combined with the anticipated transformation of Lebanese agriculture in the context of upcoming economic changes in Syria and the likely decline in reliance on Syrian labor, signals a clear shift toward a more capital-intensive and corporate-oriented agricultural model, rather than a cooperative and family-farming model. It goes beyond the current system in which agriculture is subordinate to capital and trade to a model where capital appropriates agricultural production itself.

Conclusion

Donor interventions in Lebanon's agricultural sector have been shaped by shifting political priorities, operational convenience, and an underlying preference for working through private or non-state actors rather than strengthening public institutions. While donors have often justified their approaches in terms of humanitarian and social stability imperatives, efficiency, capacity gaps, or political constraints, the cumulative effect has been the reinforcement of a fragmented governance landscape characterized by parallel structures, projectized interventions, and a persistent marginalization of farmers in policy and program design.

Donor projects have repeatedly reproduced patterns that prioritize competitiveness, export markets, and private sector intermediation over domestic food systems and policy reform. In crisis moments, donors have reacted through emergency or input-driven modalities that stabilized production in the short term but entrenched existing power asymmetries in agricultural value chains. Even in the post-2019 turn toward agroecology, donor engagement has remained primarily technical and depoliticized. Nonetheless, several donor-funded projects, such as the FAO-supported Green Plan and the FGPII support for cooperatives, demonstrate that farmer-centered initiatives, when explicitly linked to policy reform, can serve as models for more meaningful and transformative interventions.

While the personal engagement of the current Minister of Agriculture with donors has signaled a desire for stronger state leadership, improved coordination of interventions, and greater openness to policy reform, the proliferation of initiatives and the absence of a transparent political strategy leave wide room for interpretation regarding the MoA's long-term direction.

Lebanon's agriculture hinges on a fundamental and

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increasingly visible choice between two competing models of development. On the one hand, there is a capital-driven, corporate-integrated model anchored in export markets, contract farming, and private investment. This trajectory prioritizes competitiveness, technological modernization, and integration into global value chains, but does so at the risk of further marginalizing small farmers, concentrating economic power in the hands of agribusiness actors, and deepening existing rural inequalities.

On the other hand, an alternative pathway remains possible: a farmer-centered, democratic, and agroecological model, grounded in principles of food sovereignty, strengthened public institutions, cooperative development, and meaningful farmer participation in policymaking. This model envisions agriculture not merely as a sector for investment or export, but as a foundation for rural livelihoods, territorial development, and national food security and sovereignty. It implies a reorientation of both donor support and state policy toward rebuilding public extension systems, supporting autonomous farmer organizations, regulating private sector power in value chains, and ensuring that agricultural development serves the socioeconomic rights of food producers.

This alternative pathway is not an abstract ideal. It speaks directly to the reality of Lebanon's rural communities. For South Lebanon, it is a concrete political imperative. Restoring sustainable agricultural systems is a must for population return and reversing the effects of the Israeli ecocide. Far from romanticization, prioritizing support for small-scale farming recovery, restoring traditional mixed farming and agroforestry systems, and supporting farmers' collective action form the material foundations of community identity, attachment to the land, resistance, and the prospect for long-lasting peace. Donors and the state must recognize these priorities explicitly and fund them accordingly.

Endnotes

* This study was first published on 24 June 2026, available at https://www.arab-reform.net/publication/donor-driven-agricultural-policies-in-lebanon-putting-farmers-last/

1 Zeead Yaghi, "Planning National Disunity: Modernization and Development in Rural Lebanon, 1958-1970", PhD dissertation, University of California, San Diego, 2024.

2 Franck Debié, Danuta Pieter, and Éric Verdeil, La paix et la crise: le Liban reconstruit?, Presses Universitaires de France, 2003 (Debié et al., La paix et la crise).

3 Lebanon's agricultural markets are oligopolistic, i.e., controlled by a limited number of wholesalers, retailers, distributors, and importers. Successful participation requires strong social networks and political connections, creating high barriers to entry that effectively exclude new or small-scale actors from competing on fair terms. These structural inequities are compounded by an unfair wholesale market. Wholesalers operate on a consignment basis, taking a 10% commission on sales, while farmers bear the full cost of transportation, unsold goods, and postharvest losses, retaining virtually no control over actual sale operations. The near-total absence of transparent pricing mechanisms means that most farmers have no access to daily market price information and are forced to rely solely on the goodwill of the wholesaler, placing them in a position of informational disadvantage. See Food and Agriculture Organization of the United Nations, Food Systems Profile – Lebanon: Catalysing the Sustainable and Inclusive Transformation of Food Systems, 2022, available at https://openknowledge.fao.org/items/c6cb0242-28e1-4ac4-8a51-361bb945a998

4 Debié et al., La paix et la crise.

5 For an analysis of pre–civil war agricultural dynamics, see Roger Owen, "The Political Economy of Grand Liban, 1920-70", in Roger Owen (ed.), Essays on the Crisis in Lebanon, Ithaca Press, 1976.

6 Prior to this period, only one major donor-funded program was implemented. The UN Development Programme supported an "alternative development" program in Lebanon's Beqaa Valley, seeking to replace cannabis with legal crops and rural infrastructure investments. The program was chronically underfunded – only about US$17 million of the originally estimated US$300 million was mobilized, and alternative crops proved less profitable. As a result, most farmers eventually reverted to cannabis cultivation. This information comes from personal communications between the author and former UN Development Programme staff.

7 EU, "Action Fiche for Republic of Lebanon", 2010, available at https://enlargement.ec.europa.eu/system/files/2017-04/aap_liban_2010_ad4.pdf

8 Kanj Hamade, "Agriculture as a Key to the Resilience of Lebanon Rural Areas to the Effect of the Syrian Crisis", in Crises et Conflits en Méditerranée: l'Agriculture comme Résilience, Cosimo Lacirignola, ed., La Bibliothèque de l'iReMMO, L'Harmattan, 2018.

9 The Humanitarian-Development-Peace Nexus is an internationally endorsed framework formally adopted at the 2016 Istanbul World Humanitarian Summit that called for coherent and simultaneous action across humanitarian relief, longer-term development, and peacebuilding, and for moving away from sequential or siloed responses. In the Lebanese context – where Syrian displacement has evolved into a protracted, multilayered crisis compounded by economic collapse and state fragility – the nexus is particularly critical. It provides a framework for addressing acute needs, investing in systems and livelihoods that serve both refugee and host communities, and managing the social tensions that prolonged displacement generates. Operationalizing the nexus in Lebanon requires aligning short-term assistance with structural and policy changes at the sectoral level and conflict-sensitive programming.

10 For example, an evaluation of the EU's Agricultural and Livelihood Strategy in Lebanon (2008-2023) found that "using 'development' interventions to address a humanitarian crisis and a 'humanitarian' approach to achieve development outcomes resulted in less-than-optimal development results". The report concluded with the need to integrate "a development approach to address agriculture, TVET, employment and entrepreneurship". See Rima Azar and Kanj Hamade, "Thematic Evaluation of the EU's Agricultural and Livelihood Strategy in Lebanon", EU Reference: Ares (2024) 999358, 2024.

11 Pascale Sawma, "Lebanon: Agricultural 'Religious Obligations'... Addressing the Economic Collapse with a Pot of Mint!", Daraj Media, 9 July 2020, available at https://daraj.media/en/lebanon-agricultural-religious-obligations-addressing-the-economic-collapse-with-a-pot-of-mint/

12 The Lebanese Agricultural Research Institute has, in a short period, received support from at least four different donors: the FAO's EU Food and Resilience Facility, funded by the EU (US$12.1 million); the UN Development Programme's Food Security Project, funded by Germany (US$6.5 million);

the CIHEAM Bari SEED Lebanon project, funded by Italy (US$1.1 million); and the FAO's Enhancing National Food Security and Supporting Sustainable Food Systems, funded by Japan (US$0.75 million).

13 Initial input-support projects were implemented in 2020; however, the provision of input supplier vouchers and/or in-kind support remained a core activity across several projects up to the 2025 agricultural season.

14 See, e.g., the TA'AMUNA sustainable and inclusive food system project funded by Italy (US$7.7 million) and the Aradina project funded by the Agence Française de Développement and implemented by CIHEAM Montpellier, Fair Trade Lebanon, and Acción contra el Hambre – Spain (US$7.7 million).

15 The EU Green Agenda is anchored in the European Green Deal adopted in December 2019, which sets the objective of achieving climate neutrality by 2050 and reducing greenhouse gas emissions by at least 55% by 2030. It provides the overarching policy framework for sectoral strategies on agriculture, biodiversity, circular economy, energy, and food systems. Within this architecture, the Farm to Fork Strategy (May 2020) defines the EU's comprehensive approach to transforming food and agricultural systems toward sustainability, resilience, and environmental performance across the entire food chain.

16 Julia Choucair, "Lebanon's Environmentalists and the Fight for Nature: Reflecting on Successes and Failures of Recent Mobilizations", Arab Reform Initiative, 4 January 2024, available at https://www.arab-reform.net/publication/lebanons-environmentalists-and-the-fight-for-nature-reflecting-on-successes-and-failures-of-recent-mobilizations/

17 The Agroecology Coalition in Lebanon (ACL) and Agrimovement have actively sought funding from alternative donors, which are perceived as more flexible and, more importantly, primarily interested in the movement's political action.

18 International Labour Organization, "The Cooperative Sector in Lebanon: What Role? What Future?", International Labour Organization Regional Office for Arab States, Beirut, 2018, available at https://www.ilo.org/publications/cooperative-sector-lebanon-what-role-what-future

19 The "Promoting the Local Economy in North-East Bekaa" project, funded by the EU (US$11 million, 2021-2025), implemented by a consortium of NGOs including the FGPII; the "Roots of Dignity in Lebanon: From the Land a Fair, Resilient and Inclusive Rural Economy" project, funded by Italy (US$2 million, 2022-2025), implemented by the FGPII.

20 Interviews with field practitioners and cooperative development experts (Interviews).

21 Interviews.

22 Interviews.

23 Interviews.



Iraqi rice farmer Jabar Atra on his farmland. The share of agriculture in Iraqi employment dropped to 9% in 2017 as soil fertility decline and aridification hit, June 2018 © Sebastian Castelier – Shutterstock.

Beyond Technocratic Solutions: Iraqi Farmers and Local Climate Adaptation

Taif Alkhudary

Introduction

Iraq is one of the most vulnerable countries to climate change globally.[1] According to the International Energy Agency (IEA), between 2000 and 2023, Iraq's average temperatures increased by 0.48 degrees Celsius (°C) per decade, significantly higher than the global warming average of 0.37 °C.[2] Temperatures are set to rise still and could, in a high-emissions scenario, rise by 5.6 °C compared with pre-industrial levels.[3] The country has also seen an increase in extreme weather events, such as droughts followed by periods of heavy rainfall and sandstorms.[4] In addition, drought, salinization, and land degradation have displaced rural agricultural communities, resulting in increased migration to cities. The International Organization for Migration (IOM) estimates that as of March 2024, over 140,000 individuals remain displaced across Iraq due to climate-related factors.[5] Farming communities in Northern and Central Iraq in particular, who faced mass displacement due to the rise of ISIS, have also been slow to return to agriculture due to financial constraints, difficulties in accessing land, and security concerns.[6] The Iraqi government's poor policy planning has exacerbated these issues, especially in relation to water management, resulting in poor water treatment facilities where water is often highly polluted, especially in the southern regions of Iraq.[7] What is more, Iraq continues to suffer from transboundary water-sharing challenges. This is because it lacks binding cooperation mechanisms, such as institutions or agreements, that might enable it to negotiate the shares of water it receives from neighboring states, such as Turkey and Iran, which house the tributaries for both the Tigris and Euphrates rivers on which 90% of Iraq's freshwater supply depends.[8]

Amid this bleak and unrelenting picture, much of the recent gray and academic literature on climate change in Iraq has focused on the macro-level causes and consequences of climate change. This study turns instead to local climate adaptation strategies of Iraqi farmers, exploring how they are surviving amid precarity and an increasingly inhospitable context – as well as how the Iraqi state and international organizations shape and constrain their actions.[9] This focus is inspired by the recent work of anthropologist Munira Khayyat who observes: "For a large number of those we share this planet with, who are less fortunate than us, the end of the world is nothing new."[10] Some people, usually those with the least access to economic, social, and political power, have had to live with precarity, changed climates, and upheaval for all their lives and find ways to survive in these environments.[11] The arguments presented in this study are partly framed by Khayyat's notion of "resistant ecologies", which she defines as "multi-species survival collectives that sprout around agricultural practices sustaining life" through conflict.[12] While Khayyat writes about multispecies survival in the context of war in Southern Lebanon – of relevance for Iraq, which has seen decades of active armed conflict – anthropologist Anna Lowenhaupt Tsing shows it is also an applicable framework for thinking about what happens in the aftermath of devastation, whether in the context of global warming or industrial disaster. As she puts it: "We are stuck with the problem of living despite economic and ecological ruination."[13] The solutions that people find in such contexts cannot protect communities from the effects of climate change in the long term, but they reflect the messy and complex ways in which people navigate staying alive in increasingly harsh contexts.[14] Documenting such experiential understandings of the environment is necessary because of the ways in which they differ from policy conceptualizations, as the literature on multispecies survival strategies also suggests. Policy work on climate change adaptation and mitigation, argue Andrea Joslyn Nightingale et al., often separates nature from society and from broader socioeconomic and political change.[15]

In line with this literature, this study finds that the Iraqi government's climate adaptation interventions have been purely technocratic, often centered on the provision of

sustainable technologies to farmers. They have been shaped by international donor organizations, who often steer and fund this work at the policy level, as well as deliver similar technocratic solutions themselves. For its part, the Iraqi government has sought to incentivize the uptake of sustainable agricultural techniques by farmers, primarily in the form of drip irrigation and solar energy systems. International organizations have complemented this strategy by, for the most part, distributing modern irrigation systems and other agricultural equipment and providing training to a small number of farmers. Yet for the farmers centered in this study, weather extremes are only one part of the broader political, economic, and social inequalities they have had to navigate to practice agriculture.[16] Socioeconomic inequalities and political hierarchies have hampered governmental and donor efforts that a technocratic approach to adaptation is unable to address. What is required, as Marcus Taylor argues, is a bottom-up approach to climate policies based on lived realities, as opposed to ideas about climate that continue to circulate at the level of governments and international organizations.[17] To do so would mean moving beyond technocratic solutions and towards a more equitable balance of social, political, and economic power in society.

This study also finds that faced with increased precarity, farmers in Iraq have undertaken spontaneous and unstructured behavioral changes to survive rapidly changing climates. However, as interviews with farmers highlight, these strategies have not only been aimed at managing extreme weather events but also at addressing issues entrenched in political corruption and neoliberalism that have increased their vulnerability to climate shocks. As such, these strategies need to move beyond technocratic fixes and towards a transformative understanding of adaptation, which centers and promotes their lived experiences, knowledge, and priorities.

Methodology

The findings of this study are primarily based on 34 interviews, conducted between April and May 2025, with farmers, civil society activists, civil society organizations (CSOs), government officials, and international organizations across Kurdistan (Erbil, Akre, Choman) and Northern (al-Hamdaniya, Mosul), Central (Baghdad, Fallujah), and Southern (Zubair, Madiana, Hartha, Basra City, Chibayish) Federal Iraq.[18] These locations were chosen to ensure that the study was as representative as possible, especially given the diverse effects of climate change and conflict-related pollution and displacement across different parts of the country.[19] Participants were included in this study on the basis of the following criteria: government officials working on agricultural issues, including provincial, ministerial, and executive levels; agricultural CSOs or associations or those that run agricultural programs; and smallholder and large commercial farmers with and without government contracts who grow different types of crops across different regions of Iraq. Data collection carried out for this study is contextualized by a further 30 interviews carried out with activists, CSOs, academics, and journalists as part of an earlier published report, Navigating the Challenges of Environmentalism in an Increasingly Authoritarian Iraq, as well as a literature review of policy reports, media articles, and academic papers on climate adaptation in Iraq.[20] To ensure the safety of participants, the names of all interlocutors in this study are anonymized.

The selection of participants was carried out through purposeful and gatekeeper sampling. For the most part, interviews were carried out one-on-one with organizations and individuals working on issues such as climate adaptation and agriculture in Iraq, already familiar to the author. Snowball sampling was used after initial contact to diversify the participants and to limit any biases in the author's network. To conduct interviews with farmers based in rural and hard-to-reach areas, local people and organizations from those areas in question put the author in touch with farmers. In these instances, interviews with farmers were often conducted in groups, allowing for more efficient data collection. In terms of the breakdown of the interviews, 10 were conducted in Northern Iraq and the Kurdistan Region, 19 in Southern Iraq, and five in Central Iraq. Handwritten notes were taken during all the interviews, and, upon the agreement of participants, some interviews were also audio-recorded. Interviewees were asked a similar set of questions, adapted based on their profession – for example, government official, farmer, or international donor – and the answers they gave. Broadly, the questions asked included how climate change had affected farmers' agricultural practice, how they had dealt with these challenges, whether they received support from the government or international organizations, and the extent to which this was helpful and why. The interviews were then transcribed and analyzed for common themes.

Technocratic Adaptation in the Agricultural Sector

In recent years, the government of Iraq has drafted various documents, which set out its climate resilience and adaptation strategies, particularly in high-risk sectors such as water and agriculture. Among the most important of these is its first Nationally Determined Contribution (NDC) plan, which was developed in collaboration with the United Nations Development Programme (UNDP) and submitted in 2022.[21] Iraq's NDCs lay out a variety of technical interventions to address how key sectors will adapt to climate change. In relation to farming, the government sets the aim of developing climate-resistant crops and encourages the use of modern farming techniques, including the use of plastic houses, with the aim of improving food security and with a view to economic diversification. In relation to water, the government's focus is to expand its water infrastructure through building dams, desalination projects, modern irrigation techniques, and ensuring sustainable groundwater use.

Among the major issues facing Iraq is that between 75% and 80% of all water used goes towards agriculture and yet this only makes up 2% of gross domestic product (GDP).[22] Farmers continue to use outdated and water-intensive irrigation techniques, such as flood irrigation using open canals. To reduce water use in agriculture, the Ministry of Water Resources imposed strict water quotas on farmers and introduced several schemes to encourage the uptake of modern irrigation to ensure greater efficiency.[23] In addition, the government subsidizes the purchase of modern irrigation equipment by 30% for farmers willing to invest in them, and buys wheat from them at a slightly higher price than from farmers who irrigate their crops using traditional methods.[24] In recent years, the government has also been testing a new variety of hybrid rice that can be watered using sprinklers, as opposed to flood irrigation. Following a two-year ban on rice cultivation due to water scarcity, the government plans to roll out these hybrids across the country as a means of increasing food security.[25]

In addition, the government gives out loans to farmers at low interest rates for agricultural purposes, including for the purchase of plastic houses, drip irrigation, and other agricultural equipment, and for the improvement or reforestation of orchards and date palm forests.[26] However, there is no publicly available data regarding how many farmers are part of this agricultural plan or how many make use of these services. Moreover, since 2022, the Ministry of Electricity has also run several schemes in cooperation with the Central Bank, giving out loans for solar panels used for operating irrigation machinery.[27] According to interlocutors, the Ministry of Agriculture also provides a few additional, very limited services to farmers at the provincial level, including advisory services, providing small amounts of pesticide, and distributing wheat kernels annually to farmers who are part of the agricultural plan at a subsidized rate of 70%.[28]

Similarly, the work of international organizations operating in the country, such as UNDP, the Food and Agriculture Organization of the United Nations (FAO), IOM, and the Norwegian Refugee Council (NRC), has mainly focused on equipping a limited number of farmers with tools to ensure more efficient water use and sustainable farming practices. The most common interventions are distributing drip irrigation systems and equipping farms with solar panels to power water pumps. According to staff at these organizations, this type of programming serves a twin purpose: decreasing farmers' costs by saving on diesel; and in areas liberated from ISIS, encouraging conflict-displaced farmers to return to their homes by showing them a source of income.[29]

International organizations have also provided farmers with additional equipment, such as plastic houses, fishing nets to discourage electrofishing, small tractors, pesticides, plastic water tanks for irrigation when rainfall is limited, and in marshlands in particular, they gave out fridges to ensure cheese and other produce from buffalo herders would not spoil due to a rise in temperatures.[30] Often, this equipment was left with the agricultural directorate or in newly created local centers, as a means of ensuring the largest number of farmers possible could borrow them for short periods of time.[31]

International organizations also play a large part in the provision of training and capacity building, especially among young people, including in the use of modern irrigation techniques, sustainable farming practices, the use of composting to create and sell fertilizer, and how to use and maintain solar energy systems.[32] To some extent, they also do some limited work in helping to rehabilitate water infrastructure,

through, for example, lining and extending water canals and reconstructing water treatment plants in areas liberated from ISIS.[33]

The final key area of intervention for international organizations working on climate adaptation in Iraq is in afforestation initiatives, particularly in the Kurdistan Region, where they have been instrumental in supporting campaigns to create substantial green belts in the region, including plans to plant 20,000 olive trees and 1 million oak trees.[34]

However, a substantial number of these projects have been left incomplete or have been halted altogether due to cuts in development aid, particularly by the United States following the closure of the US Agency for International Development (USAID) in January 2025.[35] This means that such projects are only set to shrink further in coming years, and it is difficult to replicate them given the huge costs they entail, particularly those that seek to implement modern irrigation methods and solar panels.

Limitations of the Technocratic Approach

The technocratic approaches to climate adaptation fail to take into consideration socioeconomic precarity. For example, farmers who take out loans to purchase modern irrigation systems often struggle to make monthly repayments.[36] Farmer precarity is exacerbated by the competition from imported goods and the increase in extreme weather events, which has meant that crops are more likely to fail. As a result, farmers are likely to sell off parts of these irrigation systems if their crops fail or they go through a period of low productivity. What is more, both irrigation and solar power systems are expensive to maintain and require a dedicated budget for their upkeep and repair. The Iraqi government's lack of quality assurance and regulation exacerbates these costs, which means that some of the equipment purchased by farmers is low quality and needs constant replacing.[37]

In some areas, farmers cannot afford the large solar panel systems needed to generate enough electricity for irrigation.[38] As a community leader in al-Hamdaniya, Northern Iraq, explained:

> There are some people [in the villages] who are using solar panels now, but this is very limited, and it has a lot of issues. They installed solar panels that were supposed to operate the water pump, but it didn't work. It needs 50 amps; the solar panels could only provide 15 amps. Just to generate this small amount cost them US$4,000 in terms of start-up costs. It is very expensive.[39]

He went on to explain that the cost to install drip irrigation in a medium-sized farm amounted to around US$45,000. While it is difficult to find accurate figures for the average salary made by farmers across Iraq, NRC conducted a survey in Basra in 2022 showing that on average farmers made 280,000 IQD (US$191) per month, a figure that falls far below the amount needed to install and use sustainable farming technologies.[40] Moreover, tenant farmers interviewed in Basra also complained that often there is no follow-up on loans given out by the government, which means landowners can take these loans and use them for other purposes. For example, they would build houses or start other businesses, instead of improving agricultural land or outfitting it with modern equipment or machinery.

As outlined in the previous section, international organizations have tried to redress socioeconomic inequalities to some extent through the provision of some equipment to farmers free of charge, as well as giving workshops in their maintenance. Nevertheless, these initiatives remain small-scale, short-term, and lack legitimacy among beneficiaries. In one case observed while conducting a field visit in Nasiriyah, a small-scale initiative entailed giving out around a dozen water tanks, which on the Iraqi market cost only around 20,000 IQD (US$15) each.[41] According to interlocutors, the aim of such projects was to give the appearance that the organizations were working in this area, without actually providing any substantive benefits.[42] An interlocutor who previously worked for an international organization argued that the drip irrigation equipment being distributed was also inadequate: "They gave out one-inch hoses which were six meters long, with 6-10 extra branches and no water pumps. How are people supposed to use these hoses for irrigation?"[43] In his view, although international organizations allocated large sums of money to climate adaptation projects, the vast majority of this funding ended up being spent on NGO staff accommodation and flights as opposed to helping beneficiaries, thus limiting the effectiveness of aid.

The farmers' ability to adapt to changed climates is also limited by the failure of technical interventions to address widespread, politically sanctioned corruption in Iraq. When the initial round of loans for solar panels was announced in 2022, only certain companies linked to political parties could purchase this equipment. This meant that much of it was of poor quality.[44] In fact, the head of the parliamentary electricity committee made a public statement in which he claimed that individuals within the Ministry of Electricity had purposefully attempted to delay the rollout of solar panels because they wanted contracts to go to companies with which they had ties. Due to this form of corruption – along with the hurdles posed by the complexity of the application process – of the one trillion dollars the Central Bank allocated for this project, only 250 million dollars had been spent by 2025.

Many of the farmers interviewed also suspected that subsidies and other government services were disproportionately awarded to farmers with political connections. According to them, farmers with such connections are able to use these advantages to cultivate large swathes of land, with the Iraqi government increasingly purchasing produce from them at the expense of the portions allocated to smaller farmers.[45] While there are syndicates that are officially meant to be independent representatives of farmers' interests, they are known to be closely aligned with various government ministries and use their positions to gain investment opportunities within the agricultural sector.[46]

The marginalization of Iraqi farmers has been exacerbated further through the neoliberalization of the Iraqi economy following the US- and UK-led 2003 invasion. Crucially, Iraq's post-2003 seed patent laws – originally brought in through an order by the Coalition Provisional Authority (CPA) that amended the patent law of 1970 – allowed international seed companies to patent seeds in Iraq and prohibited farmers from saving and multiplying their seeds.[47] While this law was repealed in 2013, it was replaced by a new one, which primarily protects the rights of seed breeders, and criminalizes farmers for exchanging and saving patented seeds.[48] Taken together, these factors have worked to perpetuate dependence on international companies that produce and import the seeds to Iraq and trap farmers in a cycle of debt accumulation. What is more, as Naomi Klein argues, the CPA sought to "remake" Iraq into "the widest-open market anywhere", opening its borders to unfettered trade within a month of the invasion, while dismantling national production and social safety nets.[49] Both Iraq's borders and the agricultural sector have since been captured by the country's political elite, who often have links to armed groups allied with neighboring countries, such as Iran, allowing them to import large amounts of agricultural produce that flood the Iraqi market.[50] As a result, depending on the area, there is either no market whatsoever for the produce of local farmers or they have to sell their produce at very low prices.

The neoliberalization of Iraq's economy has also made agricultural workers and farmers increasingly precarious. However, interlocutors suggested that international organizations continue to fail to tackle the root causes of this. For example, as an interlocutor who previously worked with an international organization on agricultural issues explained:

> We have a project with an international organization on commercial fishing. As part of the project, we gave out 27,000 fishing nets and released 10,000 fish eggs. This is to stop people from using electrofishing, which depletes the stock of fish. We also did five awareness-raising campaigns. But what do you do when someone tells you: "You're telling me about the right way to fish, but how do I live? Electrofishing gives me 4-5 kilos of fish and using the net only gives me 3-4 kilos." Awareness is not enough for a person who is hungry, you can't educate him if he doesn't have food.[51]

As this account suggests, climate adaptation is less likely to be effective if it is conceptualized apart from political-economic issues that make some farmers more vulnerable to the impacts of climate change than others. As such, instead of simply providing beneficiaries with equipment, interventions should tackle the reasons why some farmers find themselves living in poverty in the first place and are forced to use environmentally harmful techniques to survive.

Local Adaptation Strategies

Through examining the local adaptation strategies adopted by Iraqi farmers, the links between nature and society become ever more present. While these strategies are to an extent in line with the government's and international organizations' technical

> **Climate adaptation is less likely to be effective if it is conceptualized apart from political-economic issues that make some farmers more vulnerable to the impacts of climate change than others.**

solutions, what really comes through in interviews with farmers is that for them these fixes are adopted both as a means of navigating extreme weather events and of negotiating social and political-economic inequalities that compromise their ability to survive changed climates.

Resisting Drought and Neoliberalism

As a result of the combined impacts of poor policy planning, climate change, and unfettered imports from neighboring states, many farmers have chosen to leave agriculture as their primary activity because they can no longer rely on it as the main source of their livelihood. Instead, they seek out government jobs, work as day laborers, or join the army.[52] However, even when they pursue these new occupations, interlocutors suggested that they do not necessarily abandon their land; instead, they often scale down their production and rely on the land for subsistence.[53] Thus, for example, in 2021 rice production in Akre – a city in Northern Kurdistan famed for its rice – fell by two-thirds due to diminishing water levels.[54] Water scarcity in the region has led some farmers to abandon the cultivation of rice, turning instead to growing a limited number of fruit trees, including figs, walnuts, and pomegranates, which they use to feed their families before selling the rest on the market. Interlocutors in these areas suggested that figs were particularly profitable because of their unique taste – achieved by growing them at high altitudes – making them competitive with imported produce.[55] In addition, they explained that figs are chosen because fig trees are particularly hardy and resistant and can withstand the increasingly frequent, extreme weather events in the area.[56]

In Southern Iraq, as areas in the marshlands have dried up, families who had previously relied on the marshes for their subsistence moved to areas such as Zubair in Basra.[57] There, they work as tenant farmers, using their agricultural skills to plant tomatoes and sharing the profits with landowners during the harvest, sometimes making as little as 750,000 IQD (US$570) per season. This is well below the national poverty line which, according to a 2021 World Bank survey, was 110,811 IQD (US$85) per month.[58] Other farmers in the area have begun to transform drought-stricken marshland areas into agricultural land, where instead of cultivating water-intensive crops that were previously grown there, such as different varieties of melon and rice, they started to produce vegetables that require relatively little water.[59] For example, in Chibayish, Dhi Qar province, and in Northern Basra, some farmers have begun to concentrate on planting okra. As an interlocutor explained, it only needs to be watered once every 72 hours when compared to every three to four hours for some varieties of fruit.[60] What is more, because of increases in temperature in both areas, farmers have begun to plant vegetables, such as okra, in the winter using low-tunnel farming systems and to harvest them in spring, allowing for an extension of the season.[61] This means that during the summer months, they can plant summer crops such as corn, which can be used for animal fodder.[62] In the marshes in particular, fodder is in high demand due to a decline in green pastures on which buffalo graze. This forces many locals to buy fodder at an inflated price, with many of them having to sell at least part

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of their livestock to afford it. The increased turn to agriculture in these areas has also provided a means of employment for the people of the marshlands who lost their traditional modes of subsistence, such as rearing buffalo, fishing, and hunting. This is particularly important for the women for whom it is especially difficult to find work in urban areas due to patriarchal gender norms.[63]

Increasingly, farmers in Southern Iraq are also turning away from the very water-intensive palm trees that also require a lot of investment and upkeep. Due to the destruction of palm trees native to Iraq and the rise in salinity and desertification, farmers are increasingly importing trees from the United Arab Emirates and genetically modified varieties from the US and the UK – believed to be more productive and more likely to withstand Iraq's changed climate.[64] While Iraq was once home to 600 varieties of date palms, these more recent practices have created a monoculture, which in turn has made Iraq's date palms more susceptible to epidemics.[65] Moreover, the rise in aridity and water scarcity has led to an increase in some diseases.[66] For example, many of the farmers interviewed explained that their palm trees had been infested with dust mites, which prevent infected fruit from growing or ripening and can lead to 50-80% loss of yield.[67] As one interlocutor put it: "We began to realize that the money we were spending on trying to keep the trees alive was much more [than] the profit that we were making from selling the dates."[68] As a result, many farmers in Southern Iraq have now turned to cultivating sidr trees instead, which according to interlocutors, tend to be more productive and make a better financial return than date palms.[69] In addition, they can be harvested within two years of being planted, whereas palm trees require five years for the trees to bear fruit. sidr trees can also better withstand salinization, which can even lead to better tasting fruit, and need less water compared to palm trees, which often end up dying because of high salinity levels and drought.

While both cases – the turn to agriculture in the marshlands and the move away from date palms in Southern Iraq – represent strategies for coping with changed climates, they also represent a loss of Iraq's cultural heritage. In the marshlands in particular, the change also represents a turn to settled modes of agriculture, a practice that people in this area have resisted at least since the early 20th century. This has long been seen as part of colonial and authoritarian attempts to destroy their way of life.[70]

The rise of extreme weather events has also reduced crop yields and made harvests increasingly unpredictable. To cope, some farmers in Basra, particularly tenant farmers, have turned away from crops such as tomatoes, which are costly to produce and often sold at low prices due to competition from imports, squeezing farmers' profit margins. Instead, some interlocutors explained that they began planting herbs because they are cheap to produce, can be sold all year round, and if one crop fails or the Iraqi market is suddenly flooded with a particular crop from abroad, they have others that they can rely on for their livelihoods.[71] The meager profits they

make from selling these herbs do little to combat their increased precarity – farmers stated that they made 2,000 IQD (US$1.5) for every 10 bunches of herbs sold. Nevertheless, this strategy seemed to be particularly useful for smallholder farmers and tenant farmers, who cannot compete with large farmers that mass-produce particular crops. Similarly, a farmer interviewed in Akre, Northern Iraq, explained that he had begun raising sheep as livestock so that he could sell their milk or meat in years when there was not enough rain for him to plant rice.[72] Other farmers explained that they supplemented their incomes through creating plant nurseries, which can provide a more reliable income for them than the sale of agricultural produce. Areas such as al-Gheraiat in Northern Baghdad – known for its date palm tree forests and for growing agricultural produce, such as ginger, carrots, aubergines, and tomatoes – have been totally transformed into plant nurseries.[73]

Navigating Water Scarcity and Political Hierarchies

Farmers have also adopted various techniques to conserve water and manage its scarcity. In Northern Iraq some farmers created rainwater harvesting pools for their livestock as a means of dealing with unreliable rainfall.[74] Others explained that they reused irrigation drainage water.[75] For example, the runoff from water used to irrigate rice is sometimes captured and mixed with fresh water and reused a second time.[76] Unlike recycled water, however, this water is not treated and can sometimes be contaminated or contain high levels of salinity, which may lead to reduced crop yields, pose a danger to the health of humans and livestock, or contribute to the pollution of water sources.[77]

However, the most common way of dealing with water scarcity among farmers is through digging water wells. As of 2023, Iraq had a total of 110,000 registered water wells.[78] A community leader in al-Hamdaniya, Northern Iraq, explained that people in the area know where and at which depth to dig through knowledge passed down over generations.[79] However, he also explained that initially wells were dug for the purpose of drinking water, and it is only in the last decade that they have been used for agricultural purposes.

In areas such as Najaf and Karbala, Central Iraq, the practice of using groundwater for irrigation has increased substantially, with the government leasing desert land to farmers at the price of US$4 per hectare to grow wheat.[80] The turn to groundwater is an interim solution that enables the price of staple foods such as bread to remain low and keeps farmers in work. However, for some farmers, it also represents a form of decentralization in so far as it means that they do not have to rely on unpredictable rainfall or government allocations of water. This is particularly important because decisions about who gets water allocations, and how much, are politicized and lie with politicians – sometimes portions of water are redirected to particular provinces as a means of calming unrest and appeasing their voters in the run-up to elections.[81] In fact, even the issue of whose wells are considered legal is often tied to farmers' connections with the country's political and financial elite. Yet the use of groundwater for irrigation is also a short-sighted strategy that has already resulted in over-extraction and decreased groundwater levels in some areas.[82] What is more, in areas such as Zubair, where farmers have always depended on wells for irrigation, hydrocarbon elements increasingly pollute the groundwater as a result of the oil industry's activities, making it unfit for human consumption.[83]

Towards a Transformative Approach?

In addition to the individual adaptation strategies outlined above, Iraqi activist networks working both locally and transnationally have collaborated with farmers to encourage the use of more sustainable and holistic farming practices. For example, through mobilizing Iraqi diaspora resources, a group of farmers and businessmen bought 20,000 acres of land in Samawah, Southern Iraq, and set up a pilot farm to test and demonstrate sustainable farming practices. Along with a number of farms in Baghdad, they utilize the principles of permaculture and organic farming as a means of encouraging more sustainable farming, including the use of organic fertilizers (composting) and livestock (camels) to regenerate soil and grow different types of trees, including support trees as a means of decreasing the salinity.[84] Other activists are working with local farmers on agroforestry, where in addition to planting crops, they also plant trees and shrubs on their land that can contribute to both improving soil health and

yield.[85] Farming practices such as agroforestry and permaculture might be thought of as transformative because rather than focus on efficiency and scale – as agricultural strategies tend to do – they focus on environmental health and resilience.[86] At the same time, these practices have socioeconomic benefits, including helping farmers to avoid debt in times of need through the sale of firewood, fodder, and fruit.[87]

What is more, a US bombing raid in 2003 destroyed Iraq's central seed bank, which held around 1,400 seed varieties. A collective of activists emerged to bring heirloom seeds into the country from seed banks all over the world.[88] They shared these with the farmers and exchanged knowledge about seed extraction and propagation, much of which had been lost as a result of agricultural centralization during Saddam Hussein's rule and the ensuing corporate control over agriculture after 2003.[89]

This bottom-up initiative provides a potential glimpse into what a transformative approach to climate adaptation might look like. It allows farmers to challenge hierarchies that might prevent them from accessing such resources, including a lack of political connections that have been – since at least the 1990s – central to survival in the agricultural sector, and imperialism that led to the destruction of Iraq's agricultural heritage. Crucially, it does so horizontally and outside a framework that leaves farmers dependent on the whims of the government, corporations, and market-driven value systems that commodify seeds. In this way, the initiative shifts power structures, reduces farmers' vulnerability, and addresses the socioeconomic inequalities farmers face. At the same time, it contributes to combating climate change as heirloom seeds reduce the need for the use of chemical pesticides and help increase biodiversity.

Recommendations

Based on the findings of this study, the following actions are recommended:

To the Government of Iraq:

- Work with farmer organizations and civil society to amend Article 11 of Law No.15 of 2013 on the Registration, Certification, and Protection of Agricultural Varieties so that it protects farmers' rights to exchange and save seeds.

- Embed, set targets for, and incentivize the uptake of generative approaches, such as permaculture and agroforestry, in the Ministry of Agriculture's annual plan.

- Strengthen domestic markets for Iraqi farmers, including reopening and utilizing national factories that were closed following the 2003 invasion.

To International Organizations:

- Invest in researching new adaptation strategies, including transformative adaptation, and utilizing long-term monitoring and evaluation processes to ensure the effectiveness of these strategies before they are implemented on a wide scale.[90]

- Leverage expertise to support the Iraqi government in amending Law No.15 of 2013 on the Registration, Certification and Protection of Agricultural Varieties and to bring it in line with international standards, including the International Treaty on Plant Genetic Resources for Food and Agriculture.[91]

- Act as a neutral third party to support in the identification of a feasible pathway towards the strict implementation of import bans on seasonal produce into Federal Iraq and the Kurdistan Region. Such a strategy should be developed in cooperation with all actors involved in controlling the country's borders and trade routes, including armed groups allied with Iran, merchants, senior security officials, and civil servants.[92]

To Civil Society Organizations and Researchers:

- Generate critical discussions about dominant value systems, rules, and practices, especially in relation to market systems and Iraqi society's relationship to nature, in order to open pathways for different types of adaptation and development strategies.

- Support the creation and strengthen farmer cooperatives, which may help the most marginalized farmers share both the monetary cost of purchasing sustainable agricultural systems as well as the risk burden of extreme weather events.

- Create a coalition of civil society, farmer

organizations, and academics in the field of agriculture, and reformist civil servants within relevant ministries to advocate for the amendment, adoption, and implementation of Law No.15 of 2013 in its revised form.

Conclusion

In the face of a rapidly changing climate, the government of Iraq and international organizations operating in the country have adopted a view of nature as separate from society. This has led them to approach adaptation in technocratic terms, often focusing on the provision of sustainable farming equipment, but without fully addressing how political, economic, and social issues shape agricultural practices. The government has provided incentives for farmers to adopt sustainable farming methods in the form of subsidies and loans for the purchase of drip irrigation systems and solar panels. The government also buys wheat at a slightly higher price from farmers who use sustainable farming techniques. For their part, international organizations have both shaped the Iraqi government's policies on climate adaptation and equipped small numbers of farmers with solar and drip irrigation systems. They have also endeavored to provide training to farmers in sustainable farming techniques and in maintaining renewable energy systems.

These technical approaches have failed to address the socio-economic inequalities and political hierarchies that farmers must navigate to practice agriculture, and which makes some social groups more vulnerable to climate change than others. Many farmers cannot afford to take out loans to purchase sustainable agricultural systems and corruption at various levels continues to hamper the efforts of both international organizations and the Iraqi government, limiting the effectiveness of these schemes. Moreover, the post-2003 neoliberalization of the Iraqi economy and the fact that the country's political elite and affiliated militias have captured the agricultural sector has left Iraqi farmers without a market for their produce.

In response, Iraqi farmers have adopted unstructured, spontaneous local adaptation strategies to try to navigate extreme weather conditions, political corruption, and neoliberalism. For example, to manage water scarcity, farmers have begun to dig wells and use groundwater for irrigation purposes. While well-digging risks depleting groundwater reserves, it is also a means for farmers to circumvent centralized, regularly politicized water allocations. In the face of extreme weather events, farmers have begun to grow new types of drought-resistant crops, planting more than one type of produce, so that if a particular crop fails during a season, they are still able to harvest and sell others. Yet often, they select crops they believe will be better able to compete with cheap imports from neighboring states.

The strategies adopted by farmers demonstrate that weather extremes are only one part of the broader structural inequalities that must be traversed to survive increasingly hostile environments.[93] This is why in their calculations, the adoption of climate-resistant crops cannot be thought about apart from a political-economic system, a system that has left farmers without a domestic market for their produce. Water scarcity cannot be addressed without tackling the corruption that has led farmers to look for maladaptive solutions. In recent years, various activist collectives have also emerged – both in-country and in the diaspora – attempting to rethink and put into practice alternative value systems and approaches to nature that challenge existing power structures that have made some farmers more vulnerable to climate change than others.

The individual survival strategies of farmers and activist collectives pursuing holistic approaches, then, push towards an understanding of the environment as co-produced with, as opposed to divorced from, society, revealing the need for more equitable economic, political, and social structures in Iraq. Thus, instead of merely adopting top-down technocratic approaches to climate adaptation, this perspective urges rethinking how Iraqi society itself is produced. In light of this, future research would do well to examine how other individuals and groups, particularly in the food sovereignty movement, are experimenting with the premises of transformative adaptation, and the feasibility and potential for cooperation and widespread adaptation of these approaches across the MENA region.

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The rose garden of Fidda, who returned to Syria and is fulfilling a dream to have her own farm and train other women in the production of natural herbal essences. © Ansar Jasim.

Syria's Seeds and the Politics of Care: A Materialist Feminist Perspective

Interview with Ansar Jasim by Rula Asad

Feminist journalist Rula Asad interviews Ansar Jasim, a political scientist and food sovereignty activist, on the impact of war, displacement, and centralized control on Syria's agricultural system, as well as the significance of grassroots seed-saving initiatives for cultural preservation and resistance. For years, Jasim has supported and connected grassroots agricultural initiatives across the region through networks that bring together farmers and community organizers committed to collective self-determination, local seed saving, agroecology, and farmer-led food systems. In this conversation, which centers on women as guardians of seeds and knowledge, Jasim offers a feminist reimagining of food systems grounded in care, collective ownership, and ecological responsibility. The interview was conducted on 25 July 2025.

Rula Asad (R.A.): To set the stage for our discussion, I would like to begin with a striking quote from Vandana Shiva, often referred to as the "Gandhi of grain":

Food sovereignty is sovereignty over your life, livelihood, and health. We are interconnected; therefore, food sovereignty is an ecological process of co-creation with other life forms. It begins with seed sovereignty: Saving and using living seeds. It involves care for the land and soil. We cannot have food sovereignty if we do not feed the soil organisms. Food sovereignty is based on organic farming and avoids chemicals and poisons. Food sovereignty includes knowledge sovereignty, economic sovereignty, and political sovereignty. [1]

How does this definition resonate with your understanding of food sovereignty, and what complexities do you think it might overlook?

Ansar Jasim (A.J.): Vandana Shiva's concept of food sovereignty is both poetic and powerful. She connects it to life, livelihood, and health, and highlights seeds and soil as key sites of ecological and political struggle. Her emphasis on living seeds and organic soil challenges the extractive logic of industrial agriculture and brings care to the forefront.

While I deeply value Shiva's framework, I would suggest extending it through a materialist feminist lens: care is not only ethical but also deeply tied to ownership, exploitation, and labor, which is often carried out by women in peasant communities. The idea of caring for the soil can obscure issues of dispossession and inequality; a materialist feminist approach seeks to unpack these power relations.

In Syria and Iraq, food and seed sovereignty are inseparable from war economies, authoritarian control, and the exclusion of women from land rights. Seeds are embedded in property regimes and legal infrastructures that enable both control and resistance.

Food sovereignty is often viewed through a nationalist lens, implying state-centered control and security. National approaches frequently overlook class and gender, as well as the local solidarities and informal networks that sustain food systems during times of crisis. A materialist feminist perspective instead emphasizes the redistribution of power over life, labor, and land, and advocates for grassroots, cross-border autonomy. True food sovereignty requires moving beyond nationalism and reframing it as a struggle for reproductive justice, ecological care, and class-based autonomy.

R.A.: Building on what you shared about the importance of power, autonomy, and local agency in food systems, could you elaborate further on how food sovereignty differs from food security?

A.J.: I would distinguish the two approaches by the different questions they ask. Food security asks: Is there any food? Food sovereignty asks: Who decides? Who owns? Who benefits?

Food security focuses on ensuring sufficient food, regardless of where it comes from, how it is produced, or who controls it. It is often framed in technocratic or humanitarian terms, emphasizing calorie counting, aid distribution, and access, without questioning underlying power structures.

Food sovereignty, by contrast, concerns who controls food systems, including land, seeds, labor, and knowledge. It centers on self-determination, collective ownership, and the right of communities to define their own agricultural practices. It prioritizes health over calories and emphasizes culturally appropriate food and dignity. It is also an analytical framework rooted in political ecology that helps us understand how food systems are structured through power. Seen this way, food sovereignty does not merely demand change; it provides the tools to analyze how agricultural infrastructures – land tenure, seed laws, irrigation systems, credit, and markets – are historically produced and politically contested. This analytical function strengthens political struggle: it clarifies where intervention is necessary and what kind of transformation is required to move beyond dependency toward collective autonomy.

In Syria, the humanitarian food regime – centered on standardized food baskets – illustrates the limits of a food security approach. Food baskets abstract food from the labor that produces it, the land on which it grows, and the gendered work of cultivation, processing, and care. They reduce food to calories while erasing the social relations that sustain life. In doing so, they risk transforming communities from producers of value into managed recipients of aid. Many food baskets were sourced from neighboring countries rather than from Syrian producers, even where local procurement would have been possible. This reflected donor logics and regional economic interests more than the needs of local agricultural economies. Instead of strengthening small farmers, aid often bypassed them, restructuring food provision around external supply chains. The food security approach in Syria, therefore, restructured local food economies, weakened small-scale producers, displaced questions of land and labor, and entrenched dependency on externally governed supply chains.

Centering dignity, a food sovereignty approach challenges whether distributing baskets to large populations constitutes adequate access to food. In the early years of the Syrian uprising, providing food was closely tied to the revolutionary demand for dignity. For local organizations such as Bahar in Afrin, where thousands of people had fled, reliance on donor-defined aid frameworks contradicted the ethos of self-determination. Their response in 2014 was modest but politically meaningful: they began planting in the camps. The scale was small, but the act of cultivation mattered; it was a refusal to remain mere recipients of humanitarian management. Such efforts were often dismissed by donors as "unsustainable", while food baskets were treated as the norm.

Food aid is never neutral. It reorganizes relations of labor, ownership, and dependency.

The question is not only whether people eat, but whether they retain the capacity to reproduce life on their own terms.

R.A.: Can home gardening contribute to food sovereignty? If so, in what ways? Are there other alternative approaches that support the pursuit of food sovereignty?

A.J.: Yes, home gardening can meaningfully contribute to food sovereignty, not necessarily because it feeds entire households, but because it cultivates a sense of agency, autonomy, and connection in a world that systematically separates people from the sources of their nourishment. During the war, our networks supported anyone who wanted to grow something, wherever possible; this act carried both symbolic and practical significance. In capitalist systems that separate people from food production, even small acts of cultivation can help break alienation and rebuild relationships with producers, reclaiming food as a social and political good rather than a commodity.

In contexts of displacement – where farmers suddenly find themselves in refugee camps and dependent on food baskets – this alienation becomes especially stark. Initiatives such as Syrian Eyes in Lebanon, which supported displaced people in growing food in the camps, did not eliminate dependency entirely. However, they opened up new possibilities – moments of dignity, capability, and resistance to the volatility of aid regimes, which may provide support one day and cancel it via text message the next. This is already a form of food sovereignty: not full self-sufficiency, but a refusal to be completely disempowered. Home gardening is valuable wherever it is possible.

Food sovereignty does not mean that everyone must grow their own food. Rather, it entails disrupting processes of commodification and reconceptualizing food as a relational practice grounded in care and solidarity. Alternatives include building direct relationships between consumers and producers, thereby bypassing exploitative markets. As a feminist practice, food sovereignty recognizes care work, reproductive labor, and the gendered dynamics of food production. It challenges the invisibilization of those who grow, cook, and care and instead centers them as political actors in the struggle for autonomy and justice.

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R.A.: Given your work examining how the former Syrian regime used siege tactics and starvation to control populations, as well as the deliberate targeting of farmland, do you think seed storage facilities were intentionally targeted or destroyed as part of this broader strategy?

A.J.: When farmers flee conflict, they often cannot take their seeds with them. Many seeds are left behind in the fields or lost entirely in the chaos of displacement. I recall a specific case from our network: we managed to recover an old, rare variety of wheat seeds (Snun al-Jamal) and brought them back to southern Idlib. For weeks, we were thrilled and spoke about it constantly. However, just as the wheat was planted, the offensive on southern Idlib began. When people had to flee, they could not take anything, and the seeds, rooted in the soil, were lost again.

This story points to a broader structural issue in Syria: seed storage has historically been highly centralized and under state control. When that infrastructure is put under stress, whether by war, sanctions, or administrative collapse, it becomes inaccessible to nearly everyone. We must think of seed sovereignty not just in terms of preserving biodiversity, but in terms of decentralization, autonomy, and resilience. If there had been local, community-run seed banks, this vulnerability wouldn't be as acute. Centralized systems collapse hard.

As for the International Center for Agricultural Research in the Dry Areas (ICARDA), while it played an important global role in preserving seeds by evacuating them to Lebanon, Morocco, and other countries, it was never an accessible resource for individual farmers inside Syria. There is a critical question here: What is the value of seeds if they are kept in distant storage or used only in research facilities, never returned to

the hands of those who cultivate them? Seeds live fully only when they are sown by farmers, shared, and adapted, rather than planted solely for research.

What we know with certainty, and what is well documented, is that grain facilities were routinely seized as spoils of war each time territorial control shifted. This occurred across all regions of Syria. Food systems, including grain, flour, and possibly adjacent seed stocks, became embedded in the political economy of war.

R.A.: In what ways did farmers, particularly women, manage to obtain and secure seeds throughout the war years?

A.J.: One concrete and inspiring example comes from Faiqa, a woman originally from a village near Saraqeb in Idlib, Syria. She now manages the seed library at Buzurna Juzuruna in Lebanon. Through her, I came to understand the beauty of seeds not only in their diverse shapes and colors, but also in the possibilities they carry and the worlds they hold within them. This is the politics of care that defines the work of the seed library.

What makes Faiqa's role so significant is that she herself is a refugee, yet she holds primary responsibility for organizing and safeguarding a shared, living resource: a seed collection that sustains both memory and future cultivation. In the context of war and displacement, where so much has been lost or uprooted, this work constitutes a form of resistance and reconstruction. In the absence of state support or stable markets during the war, it was often women like Faiqa who became custodians of agricultural continuity – quietly, carefully, and politically.

During a recent visit to villages across Syria, we spoke with younger farmers who are now engaged primarily in industrialized agriculture. Many told us about their grandparents – often grandmothers – who reproduced seeds across generations. Once they passed away, however, the practice died with them. This underscores the importance of intergenerational knowledge transmission and demonstrates that seed saving is not only a technical practice, but also a deeply embedded social and familial bond.

In the town of Duraykish, we were fortunate to meet an elderly woman who, though unmarried, cared for the children in her extended family. She had transformed her home into a living archive of care and cultivation: a front garden filled with vegetables and a backyard brimming with flowers. The back garden was open to neighbors and planted in old televisions and computer monitors – a joyful reclamation of the afterlife of those objects. While not everything she grew came from her own seeds, she relied entirely on her planting for her livelihood and to feed her family. This, too, is a form of the politics of care grounded in reproductive labor and community support. When we visited her, we shared seeds from Faiqa's seed library, creating a new connection between displaced knowledge and local practice, and between women cultivating in vastly different circumstances but guided by a shared logic of care and generosity.

R.A.: Could you explain why you refer to it as a seed library rather than a seed bank?

A.J.: The language we use is intentional; it reflects a desire to move away from transactional, commodified relationships and instead foster reciprocity, sharing, and community stewardship. It is not about storing seeds as assets; it is about circulating life and keeping seeds alive through use, care, and trust.

R.A.: How have the complex and harsh realities of the war, including the use of siege as a weapon and form of collective punishment, shaped seed storage and local seed production across different regions of the country?

A.J.: My answer is necessarily partial because I have not been a farmer on the ground, and I am still learning so much about how farmers resisted. But from what we've seen and experienced, two political-economic aspects are particularly important when thinking about seed production in wartime Syria: state centralization and market dependency on hybrid seeds.

Even before the siege on Eastern Ghouta began in 2013, farmers were already struggling to access so-called improved varieties, namely hybrid seeds sourced from the Damascus market. Once the siege was fully in effect, these seeds became completely inaccessible. At that point, some open-pollinated, reproducible seeds were smuggled in, and local communities began developing informal systems of seed saving, exchange, and reproduction. However, this fragile autonomy was often undermined.

In many opposition-held areas, agricultural governance structures were rebuilt in direct continuity with regime-era institutions. The products distributed included hybrid seeds, pesticides, and chemical fertilizers supplied by multinational corporations such as Syngenta, DuPont, Bayer, Sumi Agro, and BASF. These are not neutral interventions; they introduce comprehensive technological packages into contexts of extreme vulnerability, locking farmers into systems of dependency and undermining efforts to rebuild agroecological autonomy.

This reflects what Naomi Klein has called "shock doctrine" logic: crisis moments are exploited to introduce new products and market relations, while communities have little power to refuse. In such situations, local seed knowledge is not supported but displaced, and new input-based dependencies take root. Farmers are not encouraged to develop their own pest control solutions using local resources, nor to rebuild seed reproduction practices that once ensured long-term sovereignty.

Western donors often deemed seed reproduction unsustainable in war-torn countries, reinforcing aid systems that perpetuate control and dependency. We have seen how, in Syria, as in Iraq and Palestine, reconstruction plans typically maintain market-driven dynamics. War and siege therefore disrupt seed systems not only through destruction and displacement, but also by imposing hierarchical, market-based structures at precisely the moment when local autonomy is most needed.

R.A.: How would you describe the current situation of seed storage and saving practices in Syria?

A.J.: The situation varies significantly from region to region. In areas like Idlib, rural Aleppo, and parts of northeastern Syria, farmers have had to develop their own alternative seed systems over the past years, especially in the absence of state infrastructure. This has included informal networks of seed saving, exchange, and local experimentation, sometimes supported by grassroots initiatives or solidarity networks.

However, the situation is markedly different in areas such as Darayya, which experienced multiple sieges and extensive destruction before returning to government control. From conversations with farmers there, many describe being in a state of waiting and expectation, hoping the government would resume distributing agricultural inputs after the fall of the regime. This mindset contrasts with that of farmers in areas outside regime control, who have been compelled to become more self-reliant and, in many cases, have developed a deeper capacity for autonomous seed practices.

It is important to emphasize that seed saving does not occur in isolation. Seeds are embedded in broader systems of agroecological knowledge. Just as hybrid seeds are part of high-input, chemically dependent farming systems, open-pollinated and heirloom seeds are embedded in low-input, knowledge-intensive, and often collective farming practices.

That said, there is growing interest in seeds across Syria, particularly following the weakening or collapse of central state authority. In part, this interest is driven by a desire to reclaim lost cultural and agricultural heritage and to restore what was deliberately destroyed, including trees, crops, and landscapes. I also view this growing seed consciousness as part of a deeper dynamic: what we might call "the seed of autonomy".

R.A.: In what ways does reclaiming heirloom seeds serve as both an act of cultural preservation and resistance?

A.J.: In agriculture and in practices of care, reproduction, and adaptation, we sometimes encounter forms of resistance and imagination that are not visible within the sphere of formal politics in Syria today. Seeds carry the labor and knowledge of generations of farmers, particularly women, who selected and adapted them to thrive in specific ecological conditions. Heirloom seeds are archives of care: they have endured droughts, disease, and shifting climates. They "know" how to survive. Hybrid seeds, by contrast, are designed for stability and uniformity under ideal input conditions; they do not carry the memory of adaptation.

This matters profoundly in Syria, where the war did not merely destroy infrastructure but also targeted ecosystems. Trees were not only cut, but uprooted, as seen in both Idlib and Afrin. Agricultural life was not collateral damage; it was often deliberately attacked.

Today, the growing tendency among Syrians to reclaim seeds, restore biodiversity, and work with the land can be understood as a form of healing and grassroots reconstruction. From a materialist feminist perspective, this is also a form of politics of care: a commitment to life-making and collective survival amid loss. It is not abstract resistance; it is resistance rooted in seeds and soil.

R.A.: Given the evolving circumstances, ongoing challenges, and Syria's political transition, how do farmers make decisions today when choosing between hybrid seeds and heirloom varieties?

A.J.: The situation has not changed dramatically since the fall of the former regime in December 2024. The current seed market remains in poor condition, and the state

is not functioning meaningfully in this sector. There was never an official market for open-pollinated or heirloom seeds. What we do know is that organizations such as the Food and Agriculture Organization of the United Nations (FAO) have continued distributing F1 hybrid seeds in certain regions, particularly in the northeast, as part of agricultural support projects.

Access to non-hybrid seed varieties, however, comes almost exclusively through activist networks. Many farmers continue to rely largely on themselves. When speaking with farmers, it becomes clear that opinions are divided regarding which forms of agriculture are viable or desirable today.

On the one hand, drought and extreme weather are affecting nearly everyone this year. On the other hand, some farmers, particularly those along the coast near Tartus, remain connected to national and international markets. For them, productivity and profit are key: they grow what sells. This is important to acknowledge; we must avoid romanticizing. For many, seed choices are not only about tradition or ecology, but also about livelihood and survival.

Farmers have also told us that the way they have been farming in recent years has left their soil depleted and lifeless. Their land is no longer fertile without significant external inputs. This reveals the unsustainability of the current model and makes clear that "business as usual" is no longer an option.

R.A.: How are Syrian farmers responding to the challenges of soil depletion and limited access to resilient seed varieties, and what role do grassroots networks play in promoting alternatives to conventional agriculture?

A.J.: There is a growing group of farmers who recognize that change is necessary and are increasingly open to exploring alternatives to conventional agriculture. Heirloom and open-pollinated seeds, while more difficult to access, have demonstrated greater resilience in the face of climate-related extremes. However, these seeds are not available through state or official channels, but only through grassroots and activist-organized systems.

Even this season, we have seen farmers begin to organize, reproduce seeds, and share them through informal exchange networks. This kind of horizontal seed work creates new options over time. With each season, the pool of available local seed increases, as does the possibility for farmers to move beyond dependence on high-input industrial models.

R.A.: As we look to the future and consider paths forward, particularly in the context of reconstruction, what are the most promising avenues for rebuilding Syria's heirloom seed sector?

A.J.: In many conversations with farmers in recent months, particularly those who

lived in regime-held areas and did not experience siege or the deliberate destruction of their land, I observed a recurring response. When I raised the effects of war and crisis on agriculture, they would say: "Ah, you are talking about the crisis in former opposition areas, but now there is no crisis anymore."

In this context, heirloom seeds are not merely a nostalgic reference to the past; they represent a form of productive autonomy. These seeds have been selected and adapted by farmers over generations to survive in varied and often difficult conditions. Their use challenges the extractive logic of input-intensive agriculture and offers a material alternative to cycles of dependency and depletion.

The reality of climate change adds another layer. Syria, like many places, is already experiencing more severe weather extremes, droughts, and ecological disruption. In this context, heirloom seeds, with their genetic diversity and historical capacity for adaptation, are not merely a cultural legacy, but a primary tool for sustaining agriculture under changing climatic conditions.

However, for farmers to regain and expand their capacity to use, reproduce, and exchange these seeds, structural protection is necessary. I believe that a legal framework may be required, one that explicitly protects heirloom seeds, guarantees farmers the right to reuse and reproduce them, and defends seed sovereignty against future enclosures.

We have seen the danger of the opposite path: in Iraq, the post-2003 Coalition Provisional Authority Order No. 81 made it illegal for farmers to reuse patented seeds. The law was not designed to protect farmers or biodiversity, but rather to protect the seed products of international corporations from farmers. Such legal regimes, concerned solely with the interests of international capital, must not be replicated in Syria.

Many of us believe that reconstructing the local seed system is part of a broader reconstruction from below: a political, ecological, and social reimagining of how food, land, and labor are organized. Seeds are not merely inputs; they are the starting point of any just and sovereign agricultural future. Rebuilding the seed system is one element of a much larger transformation that includes land justice, ecological care, and the revaluation of reproductive labor.

R.A.: To bring our conversation full circle, as we have discussed the important role of grassroots action and alternatives in rebuilding Syria's agricultural future, how might a feminist approach further transform the pursuit of food sovereignty? What deeper changes in land ownership, labor structures, and ecological stewardship are required, not merely to increase women's participation, but to fundamentally reimagine and reshape the entire system for lasting justice and resilience?

A.J.: From a materialist feminist perspective, the environment is not a neutral backdrop; it is the foundation of reproductive labor, including food cultivation, water collection, and care work. These forms of labor are often carried out by women, yet they remain structurally undervalued and invisibilized. In the agricultural sector in particular, women's contributions are often classified as "unpaid family labor", even though they generate clear use value and frequently contribute to commodity production. In Marxist terms, this labor is both socially necessary and surplus-generating, yet it is not recognized as wage labor, thereby allowing capital to extract value without remuneration. This devaluation is embedded in the very functioning of capitalist and patriarchal systems of accumulation.

Food sovereignty from a feminist perspective is achieved, first, by reclaiming control over land, seeds, and labor as collective and non-commodified resources. We see this happening on the ground: for example, displaced people returning to their land, women claiming roles different from those they held before displacement, and communities occupying former military bases along the coast to house those who lost homes and livelihoods during the recent coastal massacres in 2024. These are not merely acts of survival; they are political claims to space, life, and autonomy.

Second, it is achieved by valuing reproductive and care labor as central to food systems rather than peripheral. This requires recognizing that food systems do not depend solely on markets and inputs, but also on everyday acts of care, planting, watering, feeding, preserving, and sharing that are often feminized and unpaid.

Third, it is achieved by challenging extractive agricultural models that separate production from social and ecological well-being. A significant example comes from villages near al-Safsafa, where farmers and activists from nearby cities have begun coming together to form local councils and organize collectively. These spaces remain nascent, but they offer the beginnings of a shared political consciousness, a refusal of extractivism, and an effort to rebuild agriculture around relational rather than profit-driven logics.

Finally, it is achieved by building horizontal, solidarity-based relationships among farmers, communities, and ecosystems, grounded in reciprocity rather than competition. This is already happening, even if still on a small scale. It may remain limited, particularly in the face of ongoing large-scale violence and renewed displacement that make it more difficult to visit one another and to organize. Yet the continuation of these efforts is itself a form of resistance: against authoritarianism and sectarianism, against neoliberal reconstruction, and against the return of extractive, centralized models associated with the former regime.

From this perspective, feminist food sovereignty is not a utopian dream; it is a daily practice. It involves reclaiming the means to reproduce life on our own terms and refusing to separate agriculture from care or labor from dignity.

Endnotes

* This interview was first published on 27 February 2026, available at https://www.arab-reform.net/publication/syrias-seeds-and-the-politics-of-care-a-materialist-feminist-perspective/

1 BBC, "Vandana Shiva on Why the Food We Eat Matters", 28 January 2021, available at https://www.bbc.com/travel/article/20210127-vandana-shiva-on-why-the-food-we-eat-matters



A man’s hands holding barley seeds, Tunisia. © Majopez – Shutterstock

Seeds Beyond Submission: Quiet Resistance in Rural Tunisia

Yasser Souilmi

In recent decades, Tunisia has undergone profound changes, affecting all sectors of agriculture, from production methods to seed supply systems to the relationship between farmers and the land itself.[1] Since the late 1960s, agricultural policies have shifted towards an intensive production model based on high-yield hybrid seeds, relying heavily on chemical fertilizers and pesticides. This model has been associated globally with the so-called Green Revolution. However, this shift was not merely a technical modernization or an agricultural development method, but rather a turning point that changed the essence of the relationship between Tunisian farmers and the land, climate, and seeds, opening the door to new forms of dependence on global companies that now control agricultural supply chains.[2]

With the introduction of structural adjustment programs and market liberalization in the 1980s, these transformations accelerated. Under pressure from donors and under the banner of "agricultural modernization", the state allowed global companies to enter the Tunisian market in force, marketing hybrid varieties linked to a costly production system dependent on imported inputs. At the same time, public investment in local varieties dropped,[3] leading to a decline in the amount of land devoted to local seeds, which, until recently, had been the basis of food security for rural communities. This process culminated with the adoption of Law No. 99-42 of 10 May 1999, on seeds, seedlings, and plant propagules. The law imposed a strict registration system for plant varieties, linked marketing to technical standards that did not take into account local specificities, and granted legal protection rights to breeders. These factors pushed native seeds to the margins, gradually removing them from the legal sphere. The official discourse presented hybrid seeds as the optimal scientific solution to the problem of low production,[4] which encouraged their widespread use, especially in grain production.

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However, this shift did not go unchallenged. Beyond official discourse and legal documents, silent resistance emerged in various forms, restoring seeds to their original role as bearers of sovereignty and a resource that cannot be reduced to market logic or constrained by laws written in offices far from the land.

Silent Resistance to Preserve Native Seeds

Tunisian farmers developed forms of silent resistance to the law of 10 May 1999, which regulated the registration and circulation of seeds. Instead of complying fully with it, they continued to produce their local seeds based on their inherited expertise, believing that their agricultural and symbolic value exceeded that of commercial varieties. This allowed them to circumvent legal restrictions without directly confronting the state. Such practices represent a means of protecting native seeds, and this resistance reflects the farmers' ability to reinterpret the law in accordance with their agricultural traditions and to invest their social capital in confronting the legal and economic hegemony imposed on them.

The Tunisian farmers' resistance to hybrid seeds was not driven merely by nostalgia but was based on deep agronomic knowledge and cultural, social, and economic motivations. Over time, most farmers found themselves trapped in a cycle of dependence on global markets. Hybrid seeds cannot be reused and must therefore be purchased every season, in addition to the constant need for chemical fertilizers and pesticides. This system has forced farmers to bear high costs, especially during dry seasons. As one farmer put it: "Hybrid seeds work for one season and lose you three seasons," referring to the unbalanced economic cycle imposed by these seeds.

Tunisian farmers did not accept being stripped of their seeds, as seeds are not just a means of production for them, but part of the land's memory and their inherited knowledge. With a ban on commercial exchange, cooperative methods emerged and gave these seeds new paths to life. One of the most important paths is the undeclared cooperation between farmers and the National Gene Bank. This national institution, responsible for preserving genetic heritage, does not own land on which to reproduce local varieties. To overcome this constraint, the bank relies on a network of farmers who agree to grow what it collects during field campaigns across various regions. Farmers receive a quantity of seeds to grow during the season. At the end of the cycle, they return an equivalent quantity to the bank, keeping any surplus for their use at no cost. As one farmer in the governorate of Kairouan explained: "We grow the seeds and return the deposit, and the rest is God's provision." This simple system ensures that the bank maintains the viability of its seed stock and renews it periodically, while giving farmers partial legal access and direct benefit from the seed. At its core, this cooperation represents dual resistance: the institution protects genetic memory, and farmers protect their independence.

On another level, resistance takes shape in a collective social space: seed festivals organized by environmental and farming associations and organizations. Widespread across the northwest, center, and south, these gatherings are becoming unofficially recognized free markets for seeds. Farmers bring bags and small offerings of their local seeds, exchanging them in a festive atmosphere, without any declared sales or contracts. These exchanges are not only economic but also symbolic – a collective declaration that seeds belong to everyone, and that the law cannot erase collective knowledge or stop centuries of living practice. At these festivals, seeds become social bonds and reclaim their value as a shared resource, rather than a commodity governed by international technical standards.

Farming Outside the System: A Shadow Economy that Protects Seeds

Resistance is not limited to institutions or regulatory spaces; rather, most of it grows within the informal economy that prevails in rural Tunisia. Despite successive attempts at "modernization" and the imposition of tracking and digitalization mechanisms, agriculture has remained beyond the state's effective capacity for comprehensive regulation. Since independence, the state has been unable to integrate small farmers into a formal agricultural system that can be measured and monitored because agriculture is essentially based on flexible social networks that are difficult to control and grounded in a parallel economic logic that is not subject to taxes or production records. This "non-system" is not a loophole, but a deeply rooted economic structure that constitutes what many researchers call "the backbone of the real economy",[5] that is, an economy that continues to function when state institutions fail.

In this parallel space, local seeds move freely because the state itself has failed to build a system

“While the law requires each variety to be registered as a discrete economic unit, farmers operate within a system that does not recognize this logic. Here, you hear them say: “Farming isn’t written on paper… It’s written in the soil.”

capable of monitoring them. When production chains are informal and transactions – whether buying, selling, or bartering – take place off the state’s books, the law is ill-equipped to impose its logic. Seeds are transferred from hand to hand through seasonal offerings, unrecorded bartering, or family networks that connect villages and regions. While the law requires each variety to be registered as a discrete economic unit, farmers operate within a system that does not recognize this logic. Here, you hear them say: “Farming isn’t written on paper… It’s written in the soil.”

Seeds are stored in homes, earthen warehouses, and barns, just as they always have been – no official process requires otherwise. The agricultural economy has remained untraceable: no invoices, no production permits, and no accurate data on the quantities planted or traded. This makes the circulation of local seeds a natural feature of an economic system that remains “invisible” to the state, yet functions very effectively for farmers who depend on it. The state may see this as disorganization, but farmers see it as guaranteeing continuity. Thus, the informal economy becomes not only a space for survival but also one for political resistance because it keeps seeds outside the authority of corporations and international laws. The state’s inability to “frame” farming, to turn it into a formal system that is monitored from planting to sale, has created an environment that allows local seeds to survive. When the legal framework fails to penetrate the reality of daily production, informality becomes an incubator for biodiversity and a shield that protects agricultural heritage from extinction. Whether formal or parallel, seeds continue to circulate, carrying with them a sovereignty that neither the state nor corporations have been able to transform into controllable data.

Memory Sprouts Anew: Stories of Farmers with Native Seeds

The Tunisian farmers’ resistance is not merely a technical objection to a new production model, but a multi-layered struggle where the economy intersects with culture, and society with ecology. This resistance stems from a deep understanding that native seeds are not merely biological units but tools of sovereignty and a condition of agricultural independence. Through their daily experience, farmers have realized that abandoning local seeds means abandoning their decision-making power and their ability to control resources away from corporate monopolies and ruthless market conditions. Therefore, seed recovery has become an act of self-defense and a means of redefining the relationship between humans and the land outside the logic of dependency.

This awareness has made farmers’ daily experiences a source for reviving varieties that were on the verge of extinction and building a new vision of

food sovereignty based on inherited knowledge and respect for the country's environment and climate. Thus, resistance has proven that Tunisian farmers are not merely executors of state plans or donor roadmaps but social actors with deep-rooted experience and an ability to protect their agricultural heritage and sustain their land. These experiences today are one of the most important practical responses to Law No. 99-42 and the commercial logic that seeks to turn seeds into exclusive property.

One of the most notable examples is the case of A.A., a local farmer in southern Tunisia, who has become a symbol of resistance to hybrid seeds. He has reintroduced 67 varieties of local wheat, some of which had disappeared decades ago, and has demonstrated, through his experience, that these varieties are resistant to drought and pests and are at least as productive as commercial varieties. He always says: "The land is the first school, and local seeds are its soul. The law may prevent you from selling, but the experience of our ancestors cannot be denied." This sentence sums up an entire philosophy in the face of commodification: the land is a source of knowledge, and local seeds are a living extension of this inherited knowledge.

In the Monastir region, H.K. also stands out as an example of a farmer who has revived varieties that were on the verge of extinction. He focused on saving Taj al-Malik watermelon seeds and local barley varieties, distributing them free of charge to farmers, regardless of market logic or quick profits. In doing so, he has helped build a vast social network for preserving agricultural heritage, in which seeds are passed from hand to hand, just like stories and customs. "Every native seed we preserve is a message to our children: this is our identity, this is our land," he says. It is a gentle form of resistance, but one that is powerful enough to break this cycle of extinction.

From these experiences, it becomes clear that resistance cannot be understood without recognizing the deep symbolic dimension of native seeds. The true farmer does not see the seed as merely a means of production, but as part of the family history and collective memory of the countryside. Each local variety carries a story: a drought it survived, a woman who preserved its seeds in her attic, a man who carried it from one village to another. Planting local varieties is a form of honoring ancestors and part of what could be called "rural cultural capital", which farming communities are keen to pass on without interruption.

With a rise in the discourse of food sovereignty in civil society, this cultural dimension has taken on a new political dimension. Preserving native seeds has become an act of resistance, demanding the return of control over agricultural resources, and linking local knowledge to environmental and social sustainability. When indigenous farmers plant seeds, they are not just performing a technical operation; they are making a quiet but firm statement: "We plant what we want… not what is imposed on us."

Endnotes

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A scene from Al-Inmaa Market in Aden's Al-Buraiqah District, Yemen, March 2025. © Amat Al-Rahman Al-Afouri, Photojournalist – ARI Image Allies (AIA).

The Political Geography of Seed Sovereignty: A Regional Perspective

Julia Choucair Vizoso

Introduction

The question of who owns and controls seeds is a critical component of food sovereignty. More than 80% of the world's food supply comes from plants,[1] so to understand what has happened to the way we eat, we have to understand how the systems through which seeds are produced, reproduced, exchanged, and controlled have changed.

But given that food systems are global, why examine these transformations through a regional lens? This article argues that the Middle East and North Africa (MENA) is particularly instructive because it brings into view two dimensions of contemporary food systems that are less visible in analyses organized primarily around global markets or national states: the role of military violence in shaping food and seed systems, and the increasingly multipolar geography of agrarian capital.

MENA is part of the broader global story of diminishing seed sovereignty, understood as people's right and capacity to save, replant, breed, and share seeds, as well as to participate meaningfully in the decision-making processes that shape the laws, policies, and regulations governing their access to and use of seeds. The commercialization and commodification of seeds, concentration of the seed industry, and transformation of seeds into intellectual property have shifted control away from farmers and communities toward corporations and states. A regional scale makes possible a more granular view of how these processes unfold while retaining a comparative lens.

At the same time, MENA brings into relief dimensions of seed sovereignty that have received less attention in analyses of food systems. First, while food sovereignty scholarship rightly emphasizes intellectual property and market concentration, it is insufficient in a region where military violence also shapes who can access, reproduce, conserve, and circulate seeds. Because many communities are situated on the front lines of imperial and colonial violence, their food systems, and even seeds themselves, have become targets of military destruction and control. Israel's genocide and ethnic cleansing in Gaza, southern Lebanon, and the West Bank – an assault on both life in the present and the possibility of life in the future – heighten the urgency of the struggle for seed sovereignty. Israel has brutally weaponized a truth long recognized by farmers and food sovereignty activists: "Because seeds are so central to people's cultures and food systems, to control seeds is to control life."[2] In response, farmers and food sovereignty activists are working to keep seeds in the hands of cultivators as an act of material and cultural resistance against erasure.

Second, the emergence of the Gulf states, particularly the United Arab Emirates and Saudi Arabia, as major agricultural investors highlights the increasingly multipolar geography of agrarian capital, alongside the growing influence of China and other actors beyond the Global North.

Methodologically, a regional perspective also guards against the pitfalls of methodological nationalism – the tendency to treat the nation-state as the primary unit of analysis. For questions of food sovereignty, moving beyond this scale makes visible the cross-border processes of capitalist accumulation, trade, and imperial war, as well as the transnational actors through which food systems are organized and contested.

This article analyzes the main threats to seed sovereignty and their consequences for biodiversity, ecological knowledge, and survival in MENA. It then turns to how cultivators and food sovereignty activists across the region are opposing the enclosure of seeds and defending their right to seeds.

The research draws on four complementary sources of information: academic and open-source literature and materials from international organizations, agricultural ministries, seed banks, and food sovereignty and agroecology networks; international seed-trade data and specialized trade publications; participant observation at 15 conferences, workshops, and meetings between 2022 and 2026; and 20 interviews conducted between 2024 and 2026 with farmers, seed-bank staff, and food sovereignty activists across Egypt, Jordan, Lebanon, Morocco, Palestine, and Tunisia.

What Does It Mean to Control Seed?

To analyze seed sovereignty, I develop a conceptual framework distinguishing seven dimensions of seed control, outlined in Table 1.

Table 1: Dimensions of seed control

Dimension	Question	Main categories
Varietal/ reproductive type	What is the seed?	Local/Traditional/Native/Landraces/Heirloom/Farmers' variety/Peasant/Baladi (all often open-pollinated) Formally improved open-pollinated variety Hybrid (produced by crossing parent lines) Genetically Modified Organisms (GMOs)
Breeding control	Who developed it?	Farmer/Community Public institution Private company
Provenance	Where did it come from?	Domestic Imported
Legal status	Who legally controls it?	Commons/Open-source Proprietary/Patented Registered/Certified
Mode of acquisition	How did the farmer obtain it?	Saved Farmer-to-farmer exchange Community seed system Public distribution Commercial purchase
Reproductive autonomy	Can the farmer reproduce it autonomously?	Freely reproducible Technically reproducible but legally constrained Biologically difficult to reproduce
Material and political conditions of reproduction	Can the farmer physically and materially reproduce it?	No significant disruption Displacement/loss of access to land and seed stocks Restriction of movement and circulation Destruction or seizure of seed stocks, farms, or agricultural infrastructure Direct targeting of agricultural/seed systems

The first six dimensions are analytically distinct but empirically interdependent and can combine in different configurations. For example, a seed may be locally adapted yet commercially purchased, formally registered, or developed through a public breeding program. Yet seed sovereignty advocates often combine these dimensions into ideal-typical configurations to distinguish between broadly sovereign and non-sovereign forms. In an ideal-typical sovereign pathway, a locally maintained variety is

farmer- or community-developed, domestically sourced, treated as a commons, acquired through exchange or community seed systems, and freely reproducible. In an ideal-typical non-sovereign pathway, a hybrid or GMO is privately developed, often imported, proprietary, commercially purchased, and biologically difficult or legally constrained to reproduce.

It is difficult to establish the proportion of seed reproduced or obtained through each pathway in individual countries, let alone across MENA as a whole. Available data do not capture these multidimensional configurations. Instead, studies typically distinguish between "farm-saved" and "commercially supplied" seed, or between "informal" and "formal" seed systems, using inconsistent definitions and measures. As one approximation, the Organisation for Economic Co-operation and Development (OECD) estimated in 2016 that farm-saved seed (which it defined as seed for which the plant breeder is unknown) accounted for more than 60% of seed use in the Middle East and Africa combined, a proportion similar to that in Asia and substantially higher than in Latin America and Europe (both close to 30%) and North America (less than 10%).[3] Importantly, the prevalence of farm-saved seed varies substantially across crops, ranging from close to zero for sugar beet to more than 60% for wheat and barley, rice, and potato.[4] Country-level evidence likewise indicates that farmer-controlled and informal forms of seed provision remain significant across the region. For wheat, for example, reported shares from farm-saved or informal sources are approximately 80% in Tunisia,[5] 78% in Morocco,[6] and 46% in Egypt.[7]

The seventh dimension captures an aspect of seed sovereignty largely absent from conventional classifications: the material and political conditions that enable seed reproduction. Legal rights and technical capacity alone do not guarantee the ability to reproduce seed. Farmers may possess locally adapted, freely reproducible seeds, and the legal right to save and exchange them, yet be unable to exercise these capacities if they are displaced from their land, prevented from moving seeds or agricultural inputs, or if seed stocks, farms, or agricultural infrastructure are destroyed or seized. This dimension is particularly important in MENA, where war, occupation, and displacement have directly shaped access to land, mobility, agricultural inputs, and seed infrastructure.

How Did Control Shift Away from Farmers?

Seeds are the product of thousands of years of collective experimentation by cultivators who have selected, adapted, exchanged, and stored planting material since the domestication of crops began approximately 12,000 years ago. For much of agricultural history, seed reproduction remained embedded within farming communities: Cultivators commonly saved seed from their harvests and obtained additional varieties through gifting, exchange, barter, or local markets. Over the twentieth century, however, the expansion of industrial agriculture through the Green Revolution increasingly shifted seed production away from farmer-managed systems toward specialized breeding institutions and commercial suppliers. This transformation followed two mutually reinforcing paths: a technical one and a legal-institutional one.[8]

The technical path was shaped by advances in genetics and plant breeding, including the development and commercialization of hybridization. Hybrid breeding produces first-generation (F1) seeds that combine desirable characteristics of their parent lines and often offer advantages such as higher yields, uniformity, and predictable performance. Crucially, however, because F1 hybrids generally do not reproduce their characteristics consistently in subsequent generations, farmers have incentives to purchase new seed rather than save it. Hybrid systems can also reinforce dependence on associated chemical inputs. This breaks the traditional cycle of farmers saving their own seeds and makes farmers dependent on seed-breeding companies for a crucial agricultural input.

Profits from hybrid seeds – the global commercial seeds market size was valued at US$85.4 billion in 2024 and is projected to reach US$138.3 billion by 2030[9] – financed the expansion of the private seed industry, reinforcing the shift from farmer-managed seed systems toward centralized commercial production.

A second path separating cultivators from autonomous reproduction was the development of legal and institutional mechanisms governing the ownership and circulation of plants. Countries typically regulate seeds through two main types of legislation:

plant-variety protection laws, which establish and regulate plant breeders' rights, as discussed in the following section; and seed laws, which govern the production, marketing, and trade of seeds (discussed in the subsequent section).

How Seeds Became Property

During the twentieth century, intellectual property regimes increasingly extended exclusive rights over particular plant varieties and aspects of their reproduction and commercialization. Initially developed primarily in industrialized countries, these regimes were subsequently incorporated into agricultural and trade frameworks affecting developing countries, as well as into national legislation and bilateral agreements. Seed thus transformed into an object that could be subject to exclusive rights.

The World Trade Organization's (WTO) 1994 Agreement on Trade-Related Aspects of Intellectual Property Rights (TRIPS) requires member states to provide intellectual property protections for plant varieties – laws that give exclusive legal rights to reproduce, sell, or commercially distribute the plant variety for a period of time. Article 27.3(b) of TRIPS allows countries to do so through patents, an effective sui generis or "of its own kind" system, or a combination of the two. By leaving the design of an effective sui generis system largely to national governments, TRIPS theoretically gives countries considerable latitude in determining how to protect plant varieties and farmers' interests.[10]

Yet rather than develop distinct national systems, many countries have adopted the framework of the International Union for the Protection of New Varieties of Plants (UPOV), an intergovernmental organization based in Geneva. As of 2025, UPOV had 80 members, including five in MENA (Table 2).[11] First negotiated in 1961 by plant breeders in six Western European countries, and substantially expanded in 1991, the UPOV Convention establishes a standardized system of plant breeders' rights that gives breeders control over the production and commercialization of protected varieties for periods ranging from 20 to 25 years.

The UPOV framework constrains farmers' traditional practices of saving, exchanging, and replanting seed. To qualify for protection, a variety must satisfy three technical criteria known as DUS: distinctness, uniformity, and stability. These requirements can disadvantage farmer varieties that evolve through ongoing cultivation and contain substantial genetic diversity. Farmers may deliberately maintain heterogeneous populations because variation can enhance adaptation to changing environmental conditions, making such varieties poorly suited to a system organized around uniformity and stability.

UPOV also requires "novelty", defined as whether a variety has already been commercially sold or officially registered. By focusing on commercial novelty rather than whether a variety has long been cultivated and shared within farming communities, the system can recognize the commercial breeder while failing to recognize communities that conserved and developed the underlying genetic resources and knowledge. A breeder may therefore use an unprotected farmer variety as breeding material and, if the resulting variety meets UPOV criteria, obtain breeders' rights without mechanisms for recognition, disclosure of origin, or benefit-sharing. Critics describe such appropriation as biopiracy.

In developing countries, adoption of UPOV-style protection has often occurred through trade agreements with the European Union (EU), United States (US), Japan, and the European Free Trade Association (EFTA), a trade organization made up of Iceland, Liechtenstein, Norway, and Switzerland. As Table 2 shows, the accession of the five Arab UPOV members followed trade commitments to the EU and US. EU Association Agreements with Tunisia, Jordan, Morocco, and Egypt and US Free Trade Agreements (FTAs) with Jordan, Morocco, and Oman explicitly committed these countries to UPOV accession. Morocco and Oman joined UPOV the same year as the US FTA entered into force. A US trade-industry report described Morocco's accession to UPOV 1991 as beneficial to the US seed industry and expected the strengthened protections to encourage US-Moroccan industry collaboration.[12]

In Egypt, the 2007 EFTA–Egypt agreement committed the country to UPOV accession, which occurred in 2019, after more than a decade of legal and technical assistance from UPOV. The government framed membership as a means of attracting investment in seed production and plant breeding,[13] while opponents, including some MPs, argued that it conflicted with Article 79 of the 2014 Constitution, which requires the state to "ensure sustainable food sovereignty" and preserve agricultural biodiversity and local plant varieties.[14]

> **EU Association Agreements with Tunisia, Jordan, Morocco, and Egypt and US Free Trade Agreements (FTAs) with Jordan, Morocco, and Oman explicitly committed these countries to UPOV accession. Morocco and Oman joined UPOV the same year as the US FTA entered into force.**

Table 2: The link between UPOV accession and trade agreements

State	UPOV accession	EU Association Agreement entry into force	Accession to UPOV required in EU Association Agreement?	US Free Trade Agreement entry into force	Accession to UPOV required in US FTA?
Tunisia	2003	1998	Yes, by end of fourth year after entry into force	No US FTA	N/A
Jordan	2004	2002	Yes, by end of fifth year after entry into force	2001	Yes
Morocco	2006	2000	Yes, by end of 4th year	2006	Yes, by 2006
Oman	2009	No EU agreement	N/A	2009	Yes, by 2009
Egypt	2019	2004	Yes, by end of 4th year	No US FTA	N/A

By promoting UPOV as the preferred framework for plant-variety protection, these agreements narrowed the policy space that TRIPS formally leaves governments to design alternative systems. In the words of the former UN Special Rapporteur on the Right to Food, Michael Fakhri, "This type of pressure hardly presents the countries of the Global South with a real choice".[15]

Most MENA countries that provide intellectual property protection for plant varieties do so through plant breeders' rights. Iraq, however, stands out as the only Arab country that treats plants, plant varieties, and seed-related biological material as

patentable subject matter. Following the 2003 US invasion, the Coalition Provisional Authority's Order 81 (2004) amended Iraq's intellectual property law to introduce protection for new plant varieties and strengthen the legal framework governing plant-related intellectual property – despite Iraq not being a WTO or UPOV member. Subsequent Iraqi legislation, including Law No. 50 of 2012 and Law No. 15 of 2013, further developed the regulatory framework governing seeds and agricultural varieties. Patents grant time-limited exclusive rights over commercial use and, for plants, can impose broader restrictions on the production and commercialization of varieties than plant breeders' rights, making them particularly contentious from a seed sovereignty perspective.[16] In Iraq, these reforms strengthened the position of commercial breeders while constraining farmers' customary practices of saving, exchanging, and reproducing seed.[17]

Other Legal Restrictions on Seed Sovereignty

In addition to intellectual property laws, other seed laws and regulations can restrict seed sovereignty by determining which seeds may legally circulate, be sold, exchanged, or planted according to pre-established standards. Table 3 summarizes the types of laws and their potential effects.

Table 3: Types of seed laws and their effects

Type of seed legislation	What it controls	Potential negative effect on small farmers	Systemic risks
[Intellectual Property] Plant breeders' rights / UPOV	Exclusive rights over protected varieties	Restrict reproduction, sale, and exchange Make farmer varieties difficult or illegal to market Impose administrative and financial costs Make farmer varieties economically unviable Criminalize farmer-to-farmer exchange	Biopiracy Loss of biodiversity Loss of ecological knowledge and culture Decreased resilience to climate change and military violence Greater dependence on chemical fertilizers and pesticides Concentration of seed markets
[Intellectual Property] Patents	Exclusive rights over patented inventions/material		
Variety registration	Which varieties may legally enter the market		
Certification	Seed quality standards for marketing		
Seed marketing laws	Who may sell/distribute seed and under what conditions		
Phytosanitary laws	Movement of seed and plant material		
Biosafety laws	GMOs and other regulated biological material		
Labeling/packaging laws	How seed may be marketed		

Although intellectual property laws receive more attention, certification and quality standards have also expanded across the Global South in recent decades, often creating barriers for small farmers and favoring seed industries able to meet registration and certification requirements.[18]

In Tunisia, for example, Law No. 99-42 of 1999 requires plant varieties to be registered in the official catalog in order to be cultivated, exchanged, or marketed. Registration requires compliance with the DUS standards discussed above, which can disadvantage heterogeneous farmer varieties. The majority of registered seeds in Tunisia's official catalog are F1 hybrids. The result is a regulatory system in which unregistered varieties cannot legally circulate,[19] potentially excluding farmers who reproduce or exchange locally maintained seed from subsidies,

credit, insurance, and other formal agricultural institutions.[20]

In Lebanon, a draft law introduced in 2025 would require farmers producing, saving, transporting, or distributing seed to have varieties tested and registered, with significant financial penalties and possible imprisonment for non-compliance. For small-scale farmers who routinely save and exchange their own seeds, the requirements would create administrative and financial barriers they may struggle to meet. Whereas commercial seed companies can absorb the costs of testing, certification, packaging, and registration, these requirements may be prohibitive for farmers exchanging seed locally. The inclusion of DUS requirements has also raised concerns that locally adapted varieties could be displaced by registered commercial varieties.[21]

Such regulations can therefore transform seeds from collectively maintained agricultural resources into more tightly regulated commodities, increasing dependence on commercial seed suppliers and imported inputs. The broader threat to seed sovereignty lies in the power of regulatory standards to determine which seeds are considered legitimate and which forms of farmer-led production and exchange may continue.

How Seed Enclosure Is Enforced

Seed enclosure is increasingly being enforced worldwide through punitive measures, including seizure of planting material, civil litigation, financial penalties, criminal prosecution, and imprisonment.[22] Although UPOV and representatives of the plant-breeding industry maintain that enforcement is not intended to target family farmers, evidence from different countries shows that farmers can nevertheless face significant consequences.[23]

In MENA, Tunisia provides one of the clearest examples of enforcement. Law No. 99-42 subjects regulated planting material to registration and certification requirements and provides criminal penalties for certain violations, creating a legal basis for state intervention in seed circulation. In April 2022, Tunisian authorities reportedly seized approximately 30 varieties from a small-scale farmer known for preserving and sharing locally adapted seed. The farmer was held for several hours and reportedly required to sign a declaration promising not to distribute seeds in the future. Authorities presented the intervention as a sanitary and regulatory measure, while the farmer and supporters viewed it as an attempt to discourage conservation and informal exchange. According to activists interviewed for this study, similar incidents may be underreported because farmers may be reluctant to challenge or publicize encounters with regulatory authorities.[24]

“Seed enclosure is increasingly being enforced worldwide through punitive measures, including seizure of planting material, civil litigation, financial penalties, criminal prosecution, and imprisonment.”

While Tunisia passed its seed law in 1999 and joined UPOV in 2003, the timing of the crackdown in 2022 is linked to the country's participation in the African Continental Free Trade Area (AfCFTA), according to Imen Louati, a Tunis-based food sovereignty activist and researcher (and the author of the Tunisia study in this series).[25] AfCFTA is closely aligned with UPOV principles. "This treaty requires the liberalization of nearly all trade, creating an urgent push for Tunisia to align its domestic laws with international agribusiness standards," says Louati. The Alliance for Food Sovereignty in Africa, the continent's largest civil society platform on food, opposes AfCFTA as a threat to small farmers and seed sovereignty.[26]

The potential for enforcement may itself have a disciplinary effect, creating uncertainty around practices that have historically operated outside the formal seed market. In 2022, the Tunisian Permaculture Association canceled its annual fête des semences paysannes, citing uncertainty over the legal risks of exchanging or selling unregistered seed. The festival was reinstated in later years and, according to available accounts, took place without significant interference. As Yasser Souilmi, a Tunisian researcher specializing in food sovereignty, put it, "That is precisely why many people see the law not only as a tool of direct enforcement, but also as a permanent threat hanging over these practices."[27]

Egypt provides a contrasting example in which enforcement has operated through private litigation, licensing, and export controls. In 2022, Sun World International, a California-based fruit genetics and licensing company, brought proceedings against Egyptian growers accused of producing its Sugrathirteen black seedless grape variety without authorization. Three Egyptian economic courts issued injunctions against four growers. The growers subsequently obtained licenses to plant and propagate the variety and to market the resulting fruit under the authorized Midnight Beauty brand.[28]

A second Egyptian case involving Ekland Marketing Company of California (EMCO CAL), the exclusive Egyptian agent for the University of Florida's strawberry breeding program, illustrates the use of export controls. In 2011, EMCO CAL worked with EU customs authorities and legal teams to block more than 30 shipments of Egyptian strawberries allegedly produced from unauthorized planting material. Affected growers and exporters subsequently regularized their operations through licensing agreements, with more than 40 Egyptian companies reportedly obtaining licenses for the 2011/12 season. A further intervention in 2022 reportedly blocked Egyptian frozen strawberry shipments at European ports over alleged use of protected varieties without payment of relevant fees.[29]

These cases show that enforcement can operate not only through courts or state authorities but through the commercial infrastructure on which agricultural producers depend. By intervening at the point of export, private rights-holders can turn disputes over unauthorized cultivation into restrictions on access to international markets. Enforcement therefore does more than punish individual infringement. It can reshape the conditions under which farmers and exporters participate in agricultural value chains. This matters particularly in Egypt, the world's leading exporter of frozen strawberries, for which the EU is an important market.[30] Combined fresh and frozen strawberry exports were worth approximately US$520 million, making strawberries one of the country's highest-value horticultural exports.[31]

When Seeds Become Military Targets

In spring 2024, six months into Israel's genocide in Gaza, international aid workers reportedly resorted to removing the pits from dates after Israeli authorities rejected a shipment because X-ray imaging identified the pits as a "suspicious object".[32] Date seeds thus joined the ever-expanding, arbitrary, and cruel list of goods barred or restricted from entering Gaza – from essential medical supplies, anesthetics, and cancer medications to ventilators, crutches, water-purification tablets, and maternity kits, among many others. These restrictions formed part of the broader system through which Israel has systematically deprived Palestinians of the material conditions necessary to sustain life as part of its engineering of the genocide and famine in Gaza.

The blocking of date pits is but one episode in a long history of Israel targeting seeds as part of its assault on Palestinian life. Long before October 2023, Israel had restricted the entry of agricultural inputs and food into Gaza, constraining Palestinians' capacity to sustain local food production.[33] This was the system in which Israeli authorities engaged in macabre calculations of the minimum caloric intake required to keep Palestinians hungry but not (yet) starving.[34]

During the genocide, these restrictions intensified as Israel subjected Gaza to a near-total and eventually total starvation siege.[35] In the summer of 2025, as famine loomed in Gaza[36] and the UN reported that 98.5% of cropland was damaged, inaccessible, or both,[37] Israeli forces bulldozed the seed-multiplication unit of the only official seed bank in the West Bank. The Union of Agricultural Work Committees' seed bank in al-Khalil (Hebron) had safeguarded over 70 local varieties.[38]

Israel's war on Lebanon has likewise disrupted the land, infrastructure, and seed systems through which farming communities reproduce their livelihoods. Israeli forces bulldozed thousands of olive, avocado, and nut trees, crops, irrigation systems, agricultural equipment, and other infrastructure, including heritage seeds preserved and passed down across generations. Israeli airstrikes also put Lebanon's centralized seed banks at risk. In September 2024, the Lebanese Agricultural Research Institute (LARI) in Riyaq, situated in the heart of the Beqaa Valley, was damaged by nearby Israeli attacks. Through the Lebanese National Gene Bank, LARI collects, preserves, and records the genetic diversity of indigenous plants, helping protect them from extinction. Organizations such as Agrimovement contribute local seed varieties to the facility, whose collection has grown to more than 2,000 varieties.[39]

Iraq, Syria, and Sudan further demonstrate the vulnerability of seed infrastructure to war. In Iraq, the country's National Seed Bank at Abu Ghraib, established in 1977, was destroyed during the 2003 US-led invasion, reportedly resulting in the loss of locally conserved varieties and other agricultural genetic resources.[40] In Syria, the outbreak of war placed the gene bank of the International Center for Agricultural Research in the Dry Areas (ICARDA) at Tel Hadya near Aleppo at risk in 2012, prompting the organization to relocate duplicate collections of wheat, barley, lentils, and faba beans. By 2020, Syria's capacity to provide certified wheat seed had fallen from up to 300,000 tons annually before the crisis to approximately 50,000 tons, enough to plant only 15% of the area planned for wheat cultivation and increasing farmers' reliance on saved and informally sourced seed.[41]

In Sudan, the war that began in 2023 has destroyed much of the country's agricultural input system, including storage and warehouses, but also laboratories, seed banks, and research institutions. In Darfur, Kordofan, and Gezira, the Rapid Support Forces has prevented farmers from cultivating their land, and forced agricultural workers to flee or be recruited. Destroyed cultivation areas mainly produced sorghum and millet, the two crops which, before the war, accounted for nearly two-thirds of the country's cereal consumption.[42]

In Yemen, the war that escalated in 2015 has demonstrated how the targeted destruction of agrarian infrastructure and the economic weaponization of food systems induce mass starvation and erode local seed autonomy. Rather than treating agrarian disruption as collateral damage, analysis reveals a deliberate "food war" strategy: the Saudi-led coalition systematically targeted agricultural land, irrigation infrastructure, food storage and processing facilities, and local markets, turning smallholder food production into an explicit military target.[43] These physical assaults were exacerbated by a naval and aerial blockade on critical ports such as Hudaydah, which restricted the entry of fuel, fertilizers, and agricultural inputs, alongside the 2016 strategic relocation of the Central Bank of Yemen, which weaponized the financial sector by halting civil service wage payments and triggering catastrophic currency hyperinflation. In a country that relied on imports for over 80% of its staple foods prior to the conflict, the resulting collapse of household purchasing power pushed millions into acute food insecurity and famine conditions.[44]

Amid and in the aftermath of war, humanitarian aid and post-conflict reconstruction can contribute to the erosion of seed sovereignty when agricultural recovery is organized around externally supplied inputs rather than the restoration of locally controlled seed systems. In Iraq and Syria, interventions framed as necessary responses to crisis have promoted hybrid varieties alongside chemical inputs, reinforcing farmers' dependence on external suppliers. In Iraq, reconstruction programs led by the US Agency for International Development (USAID) encouraged the adoption of imported hybrid seeds as part of broader packages of mechanization and chemical inputs, at a time when war, displacement, and the destruction of the Abu Ghraib gene bank had already severely weakened farmers' access to local seed varieties.[45] In Syria, as Ansar Jasim discusses in her contribution to this series, humanitarian and agricultural programs distributed hybrid seeds, pesticides, and chemical fertilizers, often treating locally managed seed reproduction as impractical or unsustainable in wartime.[46] By privileging standardized, externally supplied inputs

“Control over seeds is exercised not only through markets and intellectual property regimes but also through military force, destruction of infrastructure, displacement, blockade, the interruption of agricultural reproduction, and humanitarian aid itself.”

over the recovery and reproduction of local seeds, such interventions displace local seed knowledge and practices precisely when communities are most vulnerable and in need of greater autonomy. Humanitarian and reconstruction programs can thus become mechanisms of dependency, narrowing the space for locally controlled seed systems and weakening the foundations of seed sovereignty even as they seek to restore agricultural production and enhance food security.

Taken together, these cases demonstrate that control over seeds is exercised not only through markets and intellectual property regimes but also through military force, destruction of infrastructure, displacement, blockade, the interruption of agricultural reproduction, and humanitarian aid itself. Political-economic analyses tend to ask who owns seed, who breeds it, who sells it, and which legal regimes govern its reproduction. War and occupation introduce additional questions: Who can physically access seeds? Can seed-multiplication facilities continue operating? Can farmers reach their fields? Can seeds cross borders and checkpoints? Can public institutions conserve and distribute genetic resources? And can farmers reproduce locally adapted varieties from one season to the next? As the weaponization of hunger becomes an increasingly prevalent strategy of conquest and control,[47] these questions must be placed at the heart of seed and food sovereignty.

Who Decides? Unpacking the Multipolar Food Regime

Old And New Oligopolies

One of the starkest developments in the global seed sector has been the concentration of control among a small number of transnational corporations. The expansion of industrial agriculture, biotechnology, and intellectual property protection has produced an increasingly capital-intensive seed industry, concentrating breeding, genetic resources, multiplication, and distribution among a few firms. This consolidation reached a new scale in 2016-2017, when Dow and DuPont merged, ChemChina acquired Syngenta, and Bayer acquired Monsanto, reducing the previous “Big Six” to four major agrochemical and seed corporations: Bayer, ChemChina-Syngenta, DowDuPont (now Corteva Agriscience), and BASF. The “Big Four” now control more than half of the global seed and pesticide markets, making both markets oligopolistic; adding Limagrain and KWS brings the share to almost two-thirds. The concentration is even more pronounced in genetically modified crops.[48]

The contemporary seed industry also reveals two further transformations: the growing importance

of state-capital hybrids and the rising influence of states outside the Global North. ChemChina's acquisition of Syngenta (the Chinese government's largest foreign acquisition to date and the largest ever acquisition by a Chinese company) brought one of the world's largest agricultural input companies under Chinese state ownership, while the subsequent merger of ChemChina and Sinochem further consolidated China's position in the sector.

Gulf states have likewise begun moving upstream into seed and agricultural technology. In 2025, Abu Dhabi's state-owned investment company ADQ acquired a 35% stake in Limagrain's vegetable-seed division, alongside a proposed R&D partnership on genetics adapted to heat, drought, and salinity.[49] In 2023, ADQ portfolio company Silal partnered with Bayer to test more than 30 vegetable varieties under desert conditions.[50] In 2021, ADQ also acquired 45% of Louis Dreyfus Company,[51] one of the world's largest agricultural commodity traders, marking the first time in the private company's 170-year history that ownership extended beyond the founding family.[52] Saudi Arabia has pursued a similar strategy through the Saudi Agricultural and Livestock Investment Company (SALIC), the agricultural investment arm of the Public Investment Fund (the country's sovereign wealth fund), which invests across the global agrifood value chain;[53] in 2025, SALIC and Syngenta signed a letter of intent covering potential projects including crop and seed solutions.[54]

These investments reflect the broader transformation of the Gulf states' food-security strategies. Importing around 90% of their food (US$83.5 billion in 2024),[55] Gulf states' high demand and purchasing power have given them considerable influence over the organization of food production beyond their borders.[56] The Gulf states have increasingly moved from securing commodities to investing in overseas production, trading, processing, logistics, and now agricultural technologies. Gulf investors have acquired agricultural land, farms, processing facilities, and agribusinesses across countries including Egypt and Sudan,[57] while ports, shipping, storage, and distribution networks give them strategic positions within regional food chains.[58] As one measure of the Gulf's rising influence: In 2000, all of Egypt's main trading partners were Western states. By 2008, India and China were added to the list of top trading partners, and in 2019, three Gulf countries joined three Western countries plus Turkey, China, and Russia.[59] The result is a food system in which Gulf capital, demand, and logistics increasingly use the land, water, and agricultural production capacity of other Arab countries.[60] Investment in seed companies and agricultural R&D extends this influence upstream, toward the genetic and technological foundations of production.

The seed sector therefore complicates conventional accounts of agricultural power as simply a domain dominated by private corporations headquartered in North America and Western Europe.[61] State-owned enterprises, sovereign wealth funds, multinational corporations, and agricultural cooperatives increasingly interact across borders, combining commercial, food-security, technological, and strategic objectives. The seed sector thus provides a revealing site for examining the emergence of new state-capital configurations and the changing geography of power within the global economic system.[62]

Domestic Companies in Dependent States

Between global firms and farmers lies another layer of power: national agribusiness companies, large landowners, commodity traders, input distributors, processors, and politically connected business groups. These actors exercise substantial control over seed production and distribution even where agricultural production remains dependent on imported technologies and inputs.

Egypt illustrates this domestic mediation of global agricultural capital. Since the 1970s, family business groups, financial firms, and agricultural importers and exporters have expanded through close relationships with the state and transnational corporations, particularly in the highly commercialized horticultural sector.[63] Potato production is especially revealing. Egypt depends heavily on imported seed potatoes, with approximately 38% of imports coming from the Netherlands and 30% from Scotland in 2022.[64] Seed imports account for almost half of production costs, yet domestic distribution is itself concentrated: Four actors – Domiatec Group, AgroFood, Daltex, and UPEHC – account for almost 60% of annual imports, with Domiatec alone accounting for around 20%.[65] The dependence is even greater for vegetable seeds. By 2019, private companies produced or imported approximately 97% of registered vegetable varieties, while Egypt's public Agricultural Research Center accounted for 3% or less.[66] Around 98% of vegetable seeds are imported, with more than 80% originating in six countries: the United States, China, Thailand, India, Brazil, and Chile.[67]

Domestic agribusiness interests were active in Egypt's move toward UPOV accession. Before accession, private seed companies participated directly in government-industry discussions promoting plant variety protection and attended UPOV-organized workshops intended to prepare Egypt to join UPOV.[68]

Lebanon illustrates similar dynamics. The Food and Agriculture Organization of the United Nations (FAO) reported in 2011 that the country relied almost completely on imported planting seed, particularly for vegetables, with the EU constituting the principal source. Local production existed for only a limited number of vegetable varieties, cereals, pulses, and potato planting material, and local varieties accounted for no more than 3% of the seed market.[69] Lebanon also provides evidence of domestic business actively advocating seed legislation criticized as UPOV-inspired.[70]

State control Over Staple Crops

The political economy of seed differs significantly between horticultural and staple crops. Whereas vegetable sectors often connect transnational seed companies to domestic agribusiness through commercial markets, staple cereals – particularly wheat – are more deeply embedded in state food-security strategies. Governments therefore play a larger role in breeding, multiplication, certification, procurement, and distribution, shifting some control from private firms toward state agencies and public research institutions, while often leaving farmers dependent on formally certified seed systems.

In Egypt, wheat breeding and seed production remain strongly associated with the public Agricultural Research Center, while ICARDA collaborates with Egyptian institutions on breeding, germplasm exchange, varietal development, and seed system strengthening. The state therefore occupies a much more central position in the wheat seed system than it does in the country's highly commercialized vegetable sector. Yet this public role coexists with dependence on external genetic resources, technologies, and inputs, illustrating that state involvement does not necessarily eliminate broader forms of dependency.

In Morocco, only five private companies participated in the certified seed market, accounting for 19% of certified seed use, while the state-linked national seed company, Société Nationale de Commercialisation des Semences (SONACOS), supplied approximately 81%. Yet private companies have also obtained licenses to commercialize varieties developed by Morocco's public agricultural research institute, the National Institute for Agricultural Research (INRA). In some cases, firms holding licenses did not commercialize the varieties, potentially restricting competitors' access to publicly developed genetic material. Public breeding can therefore generate genetic resources that subsequently become subject to private control through licensing and commercialization.

These cases complicate a simple opposition between corporate and state control. In staple crops, the state often remains the central actor in seed production and distribution, but public research, private companies, international research institutions, and global markets remain deeply intertwined. The result is not farmer control over seed, but a different configuration of control in which states mediate access to genetic resources and certified planting material while private and international actors participate at different points in the seed system.

Reclaiming Seed Sovereignty

Although seed sovereignty was once largely taken for granted, it has increasingly become a political project requiring defense and reconstruction. The term emerged from the transnational peasant movement La Via Campesina circa 2007,[71] but like "food sovereignty" is also a multidimensional, evolving project.[72] In interviews with cultivators, farmers, seed savers, activists, and others engaged in seed-related struggles in MENA, seed sovereignty emerges as a multidimensional concept encompassing interconnected political, economic, ecological, cultural, and agrarian rights and practices.

Cultivators' autonomy: At its most fundamental level, seed sovereignty is a call to restore cultivators' autonomy over the seeds they grow, reproduce, exchange, and use – the right and capacity to save, replant, breed, share, exchange, and sell seeds, and participate meaningfully in decisions governing their access to and use of them.

Collective control over genetic resources: Seed sovereignty recognizes seeds as living resources collectively developed, selected, adapted, and maintained by farming communities over generations, rather

than simply commodities or technological inputs. In this sense, seed sovereignty is concerned not only with who owns seeds, but who has authority over their future.

Biodiversity and ecological resilience: Extreme corporate control over seeds has contributed to declining biodiversity, as standardized production and marketing favor genetically uniform varieties. The FAO estimates that 75% of crop genetic diversity has been lost since the beginning of the twentieth century.[73] Of the 6,000 plant species cultivated for agriculture, fewer than 200 contribute substantially to global food production, while just nine crops account for over 60% of global crop production (and just four of these crops account for two-thirds of the calories consumed by humans).[74] Across MENA, older generations recall heirloom foods that have become difficult or impossible to find. In Tunisia, local seeds reportedly declined from 65% of all seeds in the 1970s to just 5% today;[75] 50 indigenous seeds across 14 governorates are at risk of extinction, and 11 have already disappeared.[76]

The loss of biodiversity also reduces resilience. Agricultural diversity provides traits that can help crops withstand pests, disease, drought, and soil degradation.[77] The decline of farmer varieties also entails not only genetic loss but the erosion of context-specific knowledge about adaptability, drought tolerance, and pest resistance.

Cultural continuity and significance: Seeds are also repositories of cultural memory, embedded in the histories, identities, practices, and relationships of the communities that cultivate them. They are often passed between generations alongside knowledge of planting, harvesting, preservation, preparation, and exchange. Preserving locally adapted seeds can therefore maintain connections between communities, land, and agricultural heritage. Their disappearance can mean the erosion of cultural practices, local knowledge, and collective identity.

Resistance and sumud: In Palestine and Lebanon, seeds are also understood as material expressions of sumud – steadfastness, rootedness, and the determination to remain connected to land and community, against or despite Israeli violence and occupation. Saving, reproducing, exchanging, and replanting locally adapted seeds become ways of keeping land, knowledge, food cultures, and collective identity alive under threats of erasure.

Consumer choice and food sovereignty: Seed sovereignty also challenges the idea that seed control is solely a farmers' concern. Concentration in seed and agricultural markets can raise prices[78] and reduce incentives to invest in research that lacks strong commercial returns.[79] More fundamentally, when a small number of companies control genetic resources, consumers' choices may narrow: what foods are produced, which varieties remain available, and whether diverse, nutritious, culturally meaningful, and locally appropriate foods can be accessed.[80]

Agroecology and alternative agricultural practices: Agroecology seeks to work with ecological processes to enhance biodiversity, reduce dependence on synthetic fertilizers and pesticides, and sustain soil fertility, crop protection, and productivity. Seed sovereignty and agroecology therefore reinforce one another: The former seeks to restore control over agriculture's genetic foundations, while the latter transforms the ecological and social relations through which those resources are cultivated and sustained.

Far from representing abstract principles, these dimensions of seed sovereignty are pursued, defended, and reconstructed through concrete struggles and practices.

Struggles for Seed Sovereignty

In response to seed enclosures, loss of agrobiodiversity, and military violence, a diverse and growing constellation of communities, organizations, networks, and coalitions in MENA is engaged in the pursuit of seed sovereignty. This pursuit takes multiple forms depending on how actors relate to prevailing structures of power and the institutional spaces in which their practices unfold. Some strategies directly confront dominant actors and seek to transform existing institutions; others operate alongside or outside those institutions, building alternative systems of seed production, exchange, and knowledge. Table 4 maps these practices according to two dimensions: whether they operate within or outside existing institutional spaces of power, and whether they directly engage prevailing power relations or instead build alternatives relatively independently of them.[81]

Table 4: Practices of seed sovereignty

	Does the action unfold within or outside existing institutional spaces of power?	
Orientation to prevailing power	Outside state institutions	Within state institutions
Engage the dominant powers	• Public protests and demonstrations against restrictive seed laws or corporate control of seeds • Public naming and shaming of corporations involved in seed privatization, biopiracy, or restrictive licensing • Media campaigns exposing corporate concentration, seed patents, or the effects of restrictive seed regulations • Public awareness campaigns to mobilize farmers and consumers against corporate control • Transnational solidarity campaigns linking local struggles against seed privatization to broader movements challenging corporate agricultural power	• Legal activism: Challenging laws that privatize genetic resources or restrict seed saving, while advocating legal protections for customary practices • Advocacy: Pursuing broader agricultural transformation that recognizes access to culturally appropriate and sustainably produced food as a human right rather than merely a commodity • Establishing seed banks through public institutions • Registering traditional varieties in public conservation systems
Orthogonal to the dominant powers	• Informal seed exchange • Seed libraries/seed archives/community seed banks • Documenting and transmitting traditional seed knowledge • Creating alternative seed distribution networks • Deliberately preserving and circulating seeds despite wartime restrictions imposed by occupying or governing authorities • Smuggling or covertly transporting seeds across checkpoints or borders when their movement is prohibited or obstructed • Rebuilding local seed systems after the destruction of formal agricultural infrastructure	• Seeking official recognition or permission for seed festivals • Developing open-source approaches that establish protected commons for genetic resources • Working with universities on participatory breeding • Documenting and publicly exposing the destruction, confiscation, or appropriation of agricultural genetic resources during conflict

The practices outlined above are being mobilized across the region, with actors and collectives often moving between them and combining different forms. The following examples illustrate some of the ways in which seed sovereignty is being pursued in MENA today. They focus on practices that have become visible sites of contemporary mobilization: public campaigning and legal activism within and against state institutions, and seed saving and circulation as forms of autonomy and resistance in wartime.

Advocacy and public campaigning: In Lebanon, an emergent food sovereignty movement is acting as a watchdog over agricultural policy, mobilizing against a 2025 draft law regulating the trade of seeds, seedlings, and propagation materials. The proposed legislation became a focal point for contestation because activists argued that, although presented as a technical measure intended to regulate seed quality and trade, it could fundamentally reshape who is able to produce, reproduce, exchange, and control seeds, and also threaten agricultural biodiversity.[82] Farmers' organizations, agroecology groups, and civil society actors engaged directly with the Ministry of Agriculture, participated in consultations, and sought amendments to the proposed legislation[83] – while at the same time mounting a public campaign to expose the political implications of the proposed law.[84] At the time of writing, their advocacy appears to have successfully halted the passage of the proposed legislation—at least for now.

Legal activism: In Tunisia, which was the first MENA country to become a UPOV member (2003) but which started experiencing enforcement only a few years ago, civil society activists and researchers are currently pursuing legal reform to exempt farmers' varieties from conventional registration and certification requirements, establish alternative systems for recognizing and registering locally maintained varieties, protect customary seed saving and exchange, and create mechanisms for farmers to participate in decisions concerning plant genetic resources. The efforts include proactively drafting and proposing legislation and lobbying MPs – while making visible the gaps between international recognition of farmers' and peasants' rights and domestic implementation.

Legal activists call attention to three specific international instruments: the Convention on Biological Diversity, the International Treaty on Plant Genetic Resources for Food and Agriculture, and particularly the 2018 UN Declaration on the Rights of Peasants and Other People Working in Rural Areas (UNDROP), which goes furthest in firmly positioning peasants' rights, including their right to seeds, as human rights[85] and was voted for by all MENA countries.[86] They also look to states that have experimented with frameworks that recognize both plant breeders' and farmers' interests, challenging the assumption that national seed legislation must simply reproduce the UPOV model. These include India, Ethiopia, Kenya, Malaysia, and the Philippines.[87]

Seed saving as wartime resistance: Where war disrupts state institutions, humanitarian supply chains, and commercial markets, the conservation and circulation of seeds through on-farm collections, community seed banks, seed libraries, and informal exchange networks have become critical forms of agricultural resilience and autonomy.

During the Syrian war, activists smuggled open-pollinated seeds into besieged areas and distributed them to residents who cultivated them in whatever spaces they could, including windowsills, balconies, and rooftops.[88] In the midst of the total destruction of all life in Gaza, baladi seeds have become a lifeline, as have the skills to select and propagate them, reconnecting Gaza to its agrarian traditions. In 2024, Salama Ayesh Muhanna and his daughter, Hanadi, relocated their seed-saving activities after their facility in al-Qarara was destroyed, continuing to cultivate and distribute locally adapted baladi seeds from Deir al-Balah. Other initiatives have developed rotating seed-sharing systems among farmers, allowing saved seed to circulate between farms and reducing the risk that the destruction of an individual farm or seed collection will eliminate an entire variety. Before the genocide, 89% of input-dependent hybrid seeds supplied were from Israel – a dependency that increased farmers' costs of production while ensuring that Palestinian farmers remained almost wholly reliant on Israel for all the essential components of agricultural life.[89] In Lebanon, grassroots organizations like Agrimovement and Buzuruna Juzuruna are preserving and circulating local seed varieties, helping farmers maintain access to seeds even when war damages agricultural infrastructure or disrupts supply chains.

Sudan demonstrates the importance of such informal seed systems at a larger scale. Before the current war, approximately 86% of seeds used in crop

farming were either saved from previous harvests or purchased through local markets. Amid the breakdown of formal supply chains and the insecurity, displacement, and shortages caused by the conflict, farmers relied heavily on seeds saved from previous harvests, exchanges with other farmers, and local markets. These practices provided an important buffer against the effects of war, particularly where certified or commercially supplied seed became unavailable or unaffordable, allowing farmers to maintain access to planting material despite disruptions to formal and commercial supply channels.[90]

Food sovereignty activists have long advocated decentralized seed saving as a way to reduce vulnerability to climate and market shocks. In wartime, the logic becomes more urgent: Distributing seed stocks across farms and communities reduces the risk that a single attack will destroy a region's capacity to reproduce its crops. This logic can be seen in southern Lebanon, where farmers have responded to the vulnerability of agricultural infrastructure by maintaining duplicate stocks of seeds in different locations.[91]

Conclusion: What Remains to Be Understood

Across MENA, the conditions under which cultivators grow food are shaped by oligopolistic seed markets, legal regimes imposed through trade agreements, and war. Increasingly, these forms of power intersect with one another and with the growing influence of Gulf sovereign wealth funds. The cases examined here also show that farmers, seed savers, and food sovereignty organizations are actively rebuilding forms of collective control through seed saving, exchange, community seed banks, participatory breeding, legal advocacy, and alternative distribution networks – which take on an additional significance when agricultural systems become targets of war.

Several areas require further research. First, much better empirical data are needed on how seed systems are actually configured across MENA. Existing statistics rarely distinguish adequately among farm-saved, farmer-exchanged, publicly distributed, and commercially purchased seed, or capture how varietal type, breeding control, legal status, provenance, and reproductive autonomy intersect. Systematic country- and crop-level research could reveal where farmer control remains strong and where it is being most rapidly eroded.

Second, the political economy of seed needs to be examined in relation to the region's increasingly multipolar agrifood system. Greater attention should be paid to how Gulf sovereign wealth funds, Chinese firms, European and North American corporations, domestic agribusinesses, public research institutions, and international agricultural organizations interact within particular seed markets. Such research would help clarify how different forms of public, private, and state-capital power combine to shape access to genetic resources and agricultural technologies.

Finally, the relationship between conflict, humanitarianism, and seed sovereignty merits deeper investigation. Existing accounts document the destruction of farms, seed banks, and agricultural infrastructure, but less is known about the longer-term effects on genetic diversity and farmers' ability to reproduce their own planting material. Comparative research should examine how occupation, blockade, displacement, and restrictions on movement reshape seed systems, as well as when humanitarian and reconstruction programs reinforce dependency.

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