

From crisis to climate-resilient recovery: Rebuilding Syria's agri-food systems

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Key Messages

- **Conflict and climate act as threat multipliers:** Armed conflict has destroyed infrastructure and fragmented markets, while climate change has intensified droughts and floods. Together, they have dismantled Syria's agri-food systems in ways that neither factor alone could explain.
- **The collapse is systemic, not sectoral:** An estimated that 1.5 million olive trees were lost across Northwest Syria since 2011 (iMMAP, 2023); livestock herders report their herds are on average less than a third of their pre-conflict size; and the deficit in wheat production in 2025 was an estimated 2.73 million metric tons, enough to feed 16.25 million people (FAO, 2025). These are not isolated crises but interconnected failures across value chains, showing the need for integrated recovery strategies.
- **Women are sustaining agriculture, but without recognition:** With many men displaced or detained, women now assume greater responsibilities over cultivation, herding, and processing. However, they continue to earn 20–50% less than men and remain excluded from land, finance, and decision-making. Unlocking their potential is critical for equitable recovery.
- **Communities recognise that climate change is the greatest long-term threat they must confront, not armed conflict:** Farmers, livestock herders, and others involved in the agricultural and food production stages described climate change as the most pressing challenge for their present and future, with the greatest negative impact on their livelihoods. This reflects local awareness and readiness to adapt if the necessary support is provided. On the other hand, actors at more advanced stages of the value chain, such as olive press owners, mill operators, and dairy and cheese producers, acknowledged the threat posed by climate change but identified armed conflict as the most urgent challenge affecting their present and future. This highlights differing perspectives based on the actors' positions along the value chain
- **Resilience exists but requires investment to be scaled up:** From experiments with drought-resistant crops to solar-powered irrigation practices, communities have already begun to innovate. With flexible and long-term funding, these local initiatives could become the cornerstone of a climate-resilient agri-food sector recovery.

Taken by Violet Media Team
Idlib Syria - OCT 2025



Why this study matters

Syria's agri-food sector, once a cornerstone of national identity and economic stability, has been devastated by more than a decade of armed conflict. This comes against the backdrop of the accelerating pressures of climate change. Before 2011, agriculture accounted for nearly a quarter of Syria's GDP and sustained livelihoods for one in five Syrians (FAO, 2017). Today, wheat production has collapsed, livestock herds have been decimated, and olive groves — long symbols of cultural heritage — are in decline. This collapse is undermining not only food security but also livelihoods, social cohesion, and the natural resource base that recovery depends upon.

Conflict has destroyed irrigation networks, warehouses, and veterinary services, while also fragmenting markets through border closures, checkpoints, and informal taxation. At the same time, climate change has intensified drought cycles, heatwaves, and erratic rainfall, leaving rainfed crops to fail, pastures to shrink, and pests to spread unchecked. Neither climate nor conflict alone explains the depth of the collapse. It is their interaction as threat multipliers that has pushed Syria's agri-food systems almost past the limits of resilience.

Despite the scale of this dual crisis, most evidence to date has analysed conflict and climate separately. Humanitarian assessments highlight displacement and violence, while climate reports track rainfall deficits and rising temperatures. What has been missing is an integrated picture of how these two forces interact across value chains and shape daily realities. This research gap has limited the ability of policymakers and donors to design strategies that are both conflict-sensitive and climate-resilient.

This study is the first to fill that gap. By combining household surveys in Northwest Syria, interviews with context experts, and secondary data, it offers a uniquely grounded picture of how climate and conflict intersect to dismantle wheat, olive, and livestock systems. Crucially, it highlights the perspectives of communities themselves, voices too often absent in top-down planning. As Syria enters a fragile political transition, this evidence arrives at a pivotal moment. Recovery strategies shaped today will determine whether the country remains trapped in cycles of dependency, or whether agri-food systems can be rebuilt as engines of resilience,

How this study was conducted

The research underpinning this brief was carried out in Aleppo and Idlib governorates between 2024 and 2025. It combined structured surveys of more than 300 households, covering farmers, herders, and traders, with over 20 interviews with agricultural and livestock specialists, community leaders, NGO staff, and academics.

A participatory approach was central. Enumerators were recruited from within their own communities, ensuring trust and cultural sensitivity. This was essential to enable women and people experiencing displacement to share their experiences freely. The approach was deliberately adaptive, designed not only to collect data but to give farmers and herders, especially women, space to articulate their priorities and propose solutions.

This primary research was complemented by secondary data analysis, drawing on statistics and reports from the Intergovernmental Panel on Climate Change (IPCC), United Nations (UN) agencies reports and datasets, the Assistance Coordination Unit (ACU), and other global datasets. These sources provided critical baselines on rainfall, temperature, food security, and displacement trends, situating local dynamics within broader regional patterns.

Despite challenges, including restricted access to some areas, insecurity, and longstanding gaps in Syria's national statistics, this methodology has produced a uniquely grounded and credible picture of how conflict and climate shocks intersect to affect agri-food systems at the community level. By anchoring the analysis in local realities, it ensures that the recommendations emerging from this study are practical, relevant, and shaped by the voices of those most affected.

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Findings: Climate and conflict through an agriculture value chain lens

By examining Syria's agri-food systems through wheat, livestock, and olive value chains, it becomes clear that climate and conflict pressures do not simply damage individual crops or herds. Instead, they cascade across entire value chains, creating systemic risks. This perspective provides a more granular understanding of how shocks at the input stage ripple through production, processing, and markets, leaving households trapped in cycles of vulnerability.

Inputs and production under stress. Farmers and herders at the production end of the chain are under mounting, overlapping pressures. Wheat production has been undermined by successive droughts and erratic rainfall, while irrigation systems, which farmers would turn to in cases of unreliable weather, have been severely damaged or become unaffordable due to the rising cost of fuel. Fertiliser and seed prices, inflated by sanctions and currency collapse, push inputs beyond the means of most farmers. As a result, 70% of wheat farmers reported many incidents of selling at prices allowing no profit.

For herders, drought has degraded pastureland, forcing reliance on purchased feed that has become prohibitively expensive. These losses have been accelerated by the collapse of veterinary services, leaving herds exposed to disease. Across the Northwest, herd sizes have shrunk considerably, with 82% of herders who reporting that their herd sizes had fallen from pre-war averages of 50–100 animals to only 10–30 animals today. This has wiped out one of the most important livelihood sources for rural households.

Olive producers also face compounding pressures. Higher temperatures and prolonged dry spells have weakened trees, while pest infestations have spread unchecked without extension services to provide advisory services and input support. Conflict has displaced farming families, leaving many orchards abandoned. 69% of interviewed olive farmers linked the compounding stresses to visible reductions in yield and oil quality.

In each case, causality matters: climate change creates the stress through droughts, pests, degraded pastures, while conflict prevents adaptation by stripping away irrigation, feed, and basic services.

Processing and storage as broken links - Even when crops and livestock are produced, they often fail to reach consumers as usual because the infrastructure that links production to markets has been destroyed. Conflict has left mills, olive presses, warehouses, and cold stores bombed, looted, or abandoned. Where they do still operate, they run at less than half their former capacity.

The result is mounting losses and declining quality. Flour is now of lower grade and olive oil, once highly regarded in international markets, is now acidic and of little value. Without cold storage, meat spoils quickly, compounding the loss for herders.

Markets fragmented and politicised - Markets that once connected Syria's producers with consumers are now fractured, costly, and often dangerous. Checkpoints, border closures, and informal taxation make trade unpredictable. Producers report that moving goods between governorates or across borders often costs more than the value of the goods themselves.

Herders sell animals locally at distressed prices to avoid theft or kidnapping during transport. Olive oil and wheat remain stuck in oversupplied local markets, driving down returns.

A deeply gendered crisis - The value chain lens also reveals how women's roles have shifted across the sector. With many men displaced, detained, or unemployed, women have become central to sowing, harvesting, herding, and processing activities. Yet their contributions remain informal and undervalued: women in wheat and olive sectors report earning 20–50% less than men and are excluded from cooperatives, credit, and land ownership. Their labour sustains production, but without recognition or access to resources, their potential as agents of recovery is left untapped.

As one farmer put it:

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Women handle seed cultivation, harvesting, and processing; their roles increased due to male migration, but wages are lower due to the 'nature of work'.

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Unless women are recognised as legitimate actors in the sector, recovery risks reproducing exclusion and inefficiency

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Intersecting risks and compounded impacts - The evidence shows that climate and conflict reinforce one another at every stage of the chain. Droughts shrink grazing land just as conflict drives up feed costs. Irrigation becomes essential as rainfall declines, but canals lie in ruins and diesel is unaffordable. Pest outbreaks spread under hotter conditions, but extension systems that could provide remedies no longer function. These combined pressures explain the drastic losses across all value chains.



War took our workers and infrastructure; drought and heatwaves shrank pastures, making recovery impossible – *Livestock herder*



Despite this grim picture, there are also signs of resilience and ingenuity. Farmers are trialling drought-tolerant varieties; herders are diversifying incomes; women are forming informal co-operatives; and communities are piloting solar-powered irrigation to replace expensive diesel pumps. These examples show readiness to adapt, and with targeted and sustained investment, they could become the foundations of a climate-resilient recovery.

Why an integrated approach is key in more effective recovery planning

Looking at subsectors in isolation risks piecemeal interventions: seed aid specifically for wheat or cash-for-work only in olive groves. Instead, the evidence shows that Syria's agri-food system is integrated and interdependent:

- Drought destroys both grazing land and rainfed wheat.
- Market disruptions affect olives and livestock alike.
- Gendered exclusion cuts across all subsectors.

An integrated recovery approach must therefore restore critical cross-cutting systems (irrigation, veterinary, storage, and energy). Across all value chains, reconnecting local markets with national, regional, and international markets is critical and should be done inclusively. Most importantly, they should invest in women- and youth-led enterprises as anchors of recovery across multiple chains.

Only by viewing Syria's agri-food sector as a system of interconnected value chains can recovery efforts achieve scale, efficiency, and resilience.

What needs to be done: Pathways for recovery

The evidence shows that Syria's agri-food systems have suffered systemic collapse. Reversing this requires a sequenced, integrated recovery pathway that stabilises livelihoods, restores systems, and enables long-term climate adaptation.

Stabilise livelihoods (0–2 years)

The immediate priority is to protect remaining assets and prevent further erosion of livelihoods. This means ensuring affordable access to seeds, fertiliser, animal feed, and water, alongside emergency vaccination campaigns for herds. Rehabilitation of basic irrigation and storage infrastructure should be linked to cash-for-work schemes, prioritising women, youth, and displaced households. These interventions bridge humanitarian aid with recovery efforts by safeguarding the foundations on which future production depends.

Rebuild systems (3–5 years)

Medium-term recovery requires restoring the institutional and infrastructural systems that underpin entire value chains. Veterinary and extension networks must be rebuilt, with women employed to extend reach. Producer cooperatives should be strengthened to improve bargaining power and ensure fairer market access. Support for women- and youth-led agribusinesses can diversify rural incomes and create jobs. At the same time, investment in early-warning systems and local climate data hubs can help farmers and herders plan more effectively for shocks.

Enable climate-smart transformation (5+ years)

The long-term priority is to transform Syria's agri-food sector into a climate-resilient system. This involves scaling up renewable-powered irrigation and processing facilities, expanding certified seed and fodder systems, and promoting conservation agriculture and sustainable grazing. Investments in market re-linkages, certification systems, and trade facilitation will be essential to rebuild competitiveness once domestic food security is assured.

Crucially, women's participation must be institutionalised in governance and resource allocation, with secure access to land, credit, and cooperatives. Only then can producers rebuild competitiveness, including in export markets, once domestic food security is assured.

The role for donors and policymakers

Donors have a strategic opportunity to align Syria's recovery with global resilience and climate adaptation agendas. This requires moving beyond short-term humanitarian project cycles towards flexible, multi-year financing that can bridge relief and development. Coordination between humanitarian, recovery, and climate funds (including Foreign, Commonwealth, and Development Office (FCDO), Food and Agriculture Organisation (FAO), International Fund for Agricultural Development (IFAD), the Green Climate Fund, and the World Bank) is critical to avoid duplication and ensure coherence. Supporting locally led institutions and community organisations will be key to ensuring legitimacy and sustainability.

Conclusion and call to action

Syria's agri-food systems stand at a crossroads. Wheat, olives, and livestock — once the backbone of the economy and symbols of cultural identity — now illustrate how conflict and climate together can dismantle resilience. However, communities are not passive victims. They are already adapting, often with little outside help.

Donors and policymakers face an important choice. Continue with fragmented, short-term aid, and Syria risks locking millions into permanent dependency. By instead investing in integrated, climate-smart, and gender-responsive recovery, agriculture and food systems can once again become engines of stability, renewal, and peace.

Recovery will not begin in ministries or donor offices. It will begin in the Syrian fields where people are already planting, herding, and experimenting with new solutions.

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About SPARC

Climate change, armed conflict, environmental fragility and weak governance, and the impact these have on natural resource-based livelihoods, are among the key drivers of both crisis and poverty for communities in some of the world's most vulnerable and conflict-affected countries.

Supporting Pastoralism and Agriculture in Recurrent and Protracted Crises (SPARC) aims to generate evidence and address knowledge gaps to build the resilience of millions of pastoralists, agro-pastoralists and farmers in these communities in sub-Saharan Africa and the Middle East.

We strive to create impact by using research and evidence to develop knowledge that improves how the UK Foreign, Commonwealth & Development Office (FCDO), donors, non-governmental organisations, local and national governments, and civil society can empower these communities in the context of climate change.

For further insights, please refer
to the full research report

