Food Security Resilience in Somalia through Multi-Shock Analysis

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This document is one of a series of reports from the Food Security Portal regarding the latest research on emerging topics in agriculture and food security policy.

Introduction

Somalia faces one of the most complex and persistent food security environments in the world, characterized not by isolated crises but by the repeated and overlapping occurrence of droughts, price inflation, livestock disease, conflict, population displacement, and health shocks. These risks rarely occur independently. Instead, they accumulate and interact, gradually eroding livelihoods, assets, and coping capacity until households cross the threshold of food crisis or emergency food insecurity.

Although national monitoring systems led by the Food Security and Nutrition Analysis Unit (FSNAU), the Food and Agriculture Organization (FAO), and the Integrated Food Security Phase Classification (IPC) provide strong outcome-based assessments of food consumption, hunger, and nutrition status, these frameworks primarily describe conditions after deterioration has already occurred. They are less able to identify which households are most vulnerable to future shocks or to explain how simultaneous exposures compound risk. As a result, responses often remain reactive, triggered only after food security outcomes worsen.

This research brief presents evidence that shifting attention from single shocks and population averages toward cumulative, multi-shock exposure can substantially improve anticipatory action, targeting, and the effectiveness of scarce humanitarian and development resources.

Context and Methodology

Recent household-level analysis using survey data from the FAO Data in Emergencies (DIEM) Information System demonstrates that food insecurity in Somalia is both widespread and structurally entrenched. Most households exhibit low to moderate dietary diversity, indicating insufficient intake of nutrient-dense foods, and more than half experience severe food insecurity. At the same time, the majority of Somali households rely on negative emergency coping strategies, such as reducing meal frequency, selling productive assets, or borrowing food and cash under unfavorable conditions. These behaviors help households survive in the short term but undermine longer-term resilience, trapping families in cycles of vulnerability.

Yet the burden of risk is not evenly distributed. While average levels of reported shock exposure appear moderate at the national level, closer analysis shows substantial dispersion, with a minority of households experiencing repeated and overlapping shocks that drive disproportionate

food insecurity. This concentration of risk highlights the limits of policies that rely on broad averages or uniform geographic targeting. Effective responses must instead identify where compounded exposure is most intense and which households face the highest probability of deterioration.

The central insight emerging from this analysis is that compound shocks matter more than single events. Drought alone may reduce crop production, and rising food prices alone may strain purchasing power, but when these shocks occur simultaneously—particularly alongside livestock disease or job loss—their combined effects are markedly larger than the sum of their parts. These interactions generate nonlinear declines in food consumption and sharper increases in distress coping. Households facing overlapping shocks experience lower Food Consumption Scores, reduced dietary diversity, and greater reliance on emergency strategies than those exposed to isolated events. These findings challenge conventional approaches that treat shocks independently and underscore the need for integrated, multisectoral responses.

To operationalize this understanding, this study introduces a Multi-Shock Index (MSI), a composite measure that aggregates exposure to different shock types and provides a standardized way to identify households facing concentrated vulnerability. Rather than replacing existing food security indicators, the MSI complements them by serving as a diagnostic and predictive tool. While indicators such as the Food Consumption Score or IPC Phase capture realized outcomes, the MSI measures risk exposure and thus signals vulnerability before outcomes collapse. In this sense, it functions as an early warning and targeting mechanism, enabling proactive rather than reactive programming.

Two complementary versions of the MSI are applied. A non-parametric approach captures households experiencing clustered or overlapping shocks without imposing distributional assumptions, making it well suited for identifying broader groups with moderate but accumulating risk. A parametric approach standardizes and weights exposures to highlight households with extreme cumulative burdens, isolating those facing the most severe and concentrated vulnerability. Together, these approaches provide a tiered picture of risk that aligns closely with differentiated policy responses.

Results

Empirical results show that approximately one quarter of Somali households fall into a high-risk category characterized by overlapping moderate shocks, while roughly 15-16 percent face extreme cumulative exposure. These households account for a disproportionate share of severe food insecurity and crisis coping. The non-parametric MSI is particularly effective at identifying widespread clusters of vulnerability that require preventive, community-level action, whereas the parametric MSI isolates a smaller subset of households that require intensive, resource-heavy assistance.

Importantly, the two measures do not identify identical populations. Relying on only one would either overlook extreme cases or over-include moderately affected households. Using both in tandem enhances precision and ensures that assistance intensity matches need. This differentiation is especially critical in Somalia's resource-constrained environment, where funding shortfalls make efficient targeting essential.

Results also show that risk exposure is also uneven across space and social groups. Certain regions exhibit consistently higher concentrations of vulnerable households, including Woqooyi

Galbeed, Lower Shabelle, Mudug, and Lower Juba. These areas experience recurrent climatic, economic, and security disruptions that compound over time.

Socially, vulnerability is strongly associated with female-headed households, displaced populations such as internally displaced persons (IDPs) and returnees, households with limited formal education, and those dependent on mixed crop–livestock livelihoods. These groups tend to have fewer assets, weaker access to markets and services, and reduced capacity to smooth consumption during shocks. Consequently, they are more likely to experience rapid deterioration when exposed to repeated stressors. Targeting strategies that ignore these structural characteristics risk missing those most in need.

Policy Implications

These findings carry several significant implications for policymakers. First, food security interventions must move beyond population averages toward concentrated risk. Moderate national averages conceal extreme vulnerability within specific households and communities. Targeting should therefore prioritize those identified through MSI thresholds rather than applying uniform assistance across regions.

Second, a national dual-index strategy should be adopted. The non-parametric MSI can guide broad, preventive programming aimed at building resilience across communities experiencing clustered shocks, while the parametric MSI can direct intensive emergency resources toward households facing the most acute cumulative exposure. This tiered approach would ensure both coverage and depth, balancing food crisis prevention with protection for households already in crisis.

Third, program design should be explicitly differentiated by risk level. Households facing moderate but overlapping shocks benefit most from scalable interventions that strengthen resilience before crises emerge. Such interventions include expanded safety nets, livelihood diversification initiatives, risk insurance mechanisms, and community-based early warning systems. By contrast, households categorized as extreme-risk require immediate, high-impact support to prevent irreversible asset loss and food consumption collapse. For these families, unconditional cash transfers, asset protection measures, emergency food assistance, and livelihood rehabilitation are more appropriate policy measures. Aligning intervention intensity with exposure severity increases effectiveness while optimizing limited resources.

Fourth, policies must address the specific shock combinations shown to be most harmful. Integrated packages that combine food or cash assistance with veterinary services, employment support, or price stabilization measures are likely to be more effective than isolated sectoral responses. Addressing livestock disease without addressing rising food prices, for example, leaves households vulnerable to continued food security deterioration. Coordinated responses that tackle interacting risks simultaneously are essential for breaking cumulative vulnerability cycles.

Fifth, regional targeting should guide geographic prioritization. Regions with high concentrations of MSI-identified households warrant scaled preventive programming and early action investments, while areas with smaller but highly exposed populations require focused, intensive support. Such differentiation improves efficiency and ensures that both widespread and severe needs are addressed. Similarly, interventions must explicitly prioritize socially vulnerable groups,

including female-headed and displaced households, whose structural disadvantages magnify the effects of shocks.

Finally, embedding MSI monitoring within existing national systems can strengthen anticipatory action. Integrating shock exposure tracking into FSNAU and IPC processes would enable earlier detection of rising risk and facilitate pre-agree-upon triggers for financing and response. Acting before households exhaust assets or adopt harmful coping strategies reduces both human suffering and long-term recovery costs.

Conclusion

Food insecurity in Somalia is fundamentally cumulative, persistent, and concentrated among households facing overlapping shocks. Traditional outcome indicators remain essential but are insufficient on their own for proactive risk management. The Multi-Shock Index offers a practical, evidence-based tool that complements existing systems by identifying vulnerability earlier, targeting assistance more precisely, and guiding differentiated interventions that match the severity and nature of risk.

By shifting policy from reactive crisis response to anticipatory resilience building, MSI-informed approaches can help protect livelihoods, safeguard nutrition, and strengthen long-term food security. In a context where shocks are inevitable, improving how risk is measured and targeted may be one of the most effective strategies available for reducing vulnerability and supporting sustainable recovery across Somalia.

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