

COMMENT

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Climate and conflict-induced child nutrition crisis in Sub-Saharan Africa

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Abstract

This commentary explores the intersection between climate, conflict, and child nutrition, highlighting the severe child nutrition crisis in Sub-Saharan Africa exacerbated by climate change and ongoing conflicts. Shifting climate patterns disrupt agricultural productivity and food security, while persistent conflicts displace populations and destroy infrastructure, significantly increasing food insecurity and malnutrition among children. Recent UNICEF data indicates that 1 in 4 children globally live in severe food poverty, with those affected up to 50% more likely to suffer from life-threatening malnutrition. Over half a billion children reside in areas prone to climate-related extreme weather events, challenging food production, distribution, and access. Extreme weather events have led to crop failures, food shortages, and price spikes, disproportionately affecting vulnerable populations. Changes in temperature and precipitation patterns also alter the nutritional content of crops, worsening nutritional challenges. Conflicts in SSA have led to a food crisis of unprecedented scale, with over 80% of the 137 million Africans facing acute food insecurity located in conflict-affected countries. The conflict between Russia and Ukraine has further disrupted global food and fertilizer supply chains, exacerbating food shortages and inflation in many African countries. Addressing this crisis requires a multifaceted approach integrating evidence-based, cost-effective strategies. This commentary advocates for the adoption of the 3 C approach—climate-smart school feeding programs, cultivation of edible insects, and community-based food hubs—as solutions to enhance child nutrition and build climate resilience.

Keywords Climate change, Conflicts, Child nutrition, Food insecurity, Sustainable development, Sub-Saharan Africa

Sub-Saharan Africa (SSA) is grappling with a major child nutrition crisis exacerbated by both climate change and ongoing conflicts. The region faces a dual threat: shifting climate patterns are disrupting agricultural productivity and food security, while persistent conflicts are displacing populations and destroying infrastructure. This combination has led to significant increases in food insecurity and malnutrition among children, who are particularly vulnerable to these disruptions [1]. Recent data released by UNICEF on June 5, 2024, indicates that 1 in 4 children globally live in severe child food poverty due to inequity, conflict, and climate crises, according to the global body, a new analysis has also shown that children experiencing

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this level of food poverty are up to 50% more likely to suffer from life-threatening malnutrition [2].

The accelerating effects of climate change on food systems and child health reveals a profound interplay with under-nutrition, as they co-occur and interact at biological, psychological, and social levels to create a crisis that needs urgent attention [3].

Over half a billion of the world's children reside in areas prone to climate change related extreme weather events which poses significant challenges to food production, distribution, and access, that directly affect child nutrition [4]. Extreme weather events, such as droughts, floods, and heat waves, are also becoming more frequent and intense, leading to crop failures, food shortages, and price spikes which disproportionately affect vulnerable populations, including children, who are more susceptible to malnutrition and its long-term consequences [5].

Furthermore, changes in temperature and precipitation patterns can alter the nutritional content of crops, leading to deficiencies in essential micronutrients and vitamins that exacerbate existing nutritional challenges, particularly in regions already facing food insecurity and poverty [6].

Beyond climatic factors, conflicts in various parts of SSA have led to a food crisis emergency of unprecedented scale. The instability and violence in these regions disrupt agricultural activities, displace populations, and hinder humanitarian aid efforts; as a result, over 80% of the 137 million Africans facing acute food insecurity are located in conflict-affected countries [7].

In addition, the ongoing conflict between Russia and Ukraine has also had a devastating effect on food availability for children in Africa. Ukraine and Russia are two major suppliers of food and fertilizer globally, and the war has significantly disrupted these supply chains, especially in SSA. This disruption has led to increased prices for critical commodities, further exacerbating food shortages and inflation in many countries. The resultant impact on vulnerable populations, particularly children, has been severe, with heightened risks of malnutrition and mortality in some regions [8, 9].

These factors have combined to exacerbate the food crisis in many countries. According to the Global Hunger Index 2023, which combined three indicators: under-nourishment, child underweight, and child mortality, the Central African Republic is the most affected by hunger and malnutrition, with an index of 42.3. Madagascar follows with an index of 41. SSA is the most affected region overall. In terms of individuals, however, South Asia has the highest number of undernourished people. Countries facing high levels of hunger include Afghanistan, Ethiopia, Nigeria, Somalia, South Sudan, and Yemen [10].

Recognizing the intersectionality of climate change, conflict, and child nutrition is crucial for addressing these

interconnected crises. However, taking decisive action to counteract their combined effects remains a significant challenge. Identifying effective starting points and strategies for intervention is essential to stem the growing tide of food insecurity and malnutrition impacting vulnerable populations.

The 3C evidence-based strategy

As climate debates and conflicts intensify globally, addressing the resulting child nutrition crisis demands urgent action. It is essential to promote cost-effective, evidence-based strategies that not only alleviate current suffering but also involve the active participation of affected communities. Nutrition plays a critical role in global health and development, and its challenges are compounded by the dual threats of climate change and ongoing conflicts. Effective solutions require a coordinated effort to mobilize resources, implement targeted interventions, and integrate community insights. Here we propose the 3 C approach:

The first 3 C approach for addressing the impact of climate change and conflict on child nutrition is the climate-smart school feeding programs. These programs not only provide nutritious meals to children but also prioritize locally sourced, climate-resilient ingredients. By supporting small-scale farmers and promoting climate-resilient crops, such as drought-tolerant grains and indigenous fruits and vegetables, these programs contribute to both child nutrition and climate adaptation efforts [11].

The second of the 3 C approach that is highly beneficial but often overlooked is the cultivation of edible insects. Insect farming, particularly for species such as crickets and mealworms, provides a sustainable source of high-quality protein and essential nutrients. Insects require significantly less land, water, and feed compared to traditional livestock, resulting in lower greenhouse gas emissions and reduced environmental impact [12].

The final 3 C approach is the implementation of community-based food hubs which can provide a decentralized system of food production, processing, and distribution. These hubs bring together local farmers, food producers, and community members to support sustainable food systems while reducing reliance on long-distance transportation and associated carbon emissions [13].

To ensure that the 3 C strategy shown in Fig. 1 produces the required mitigational effects, a robust implementation mechanism is necessary. This can involve initiating pilot projects in regions heavily impacted by climate change, conflict, and high child malnutrition rates, in collaboration with local governments, NGOs, and community leaders to ensure cultural and contextual relevance. Establishing robust monitoring systems to assess the impact of 3 C interventions on food security

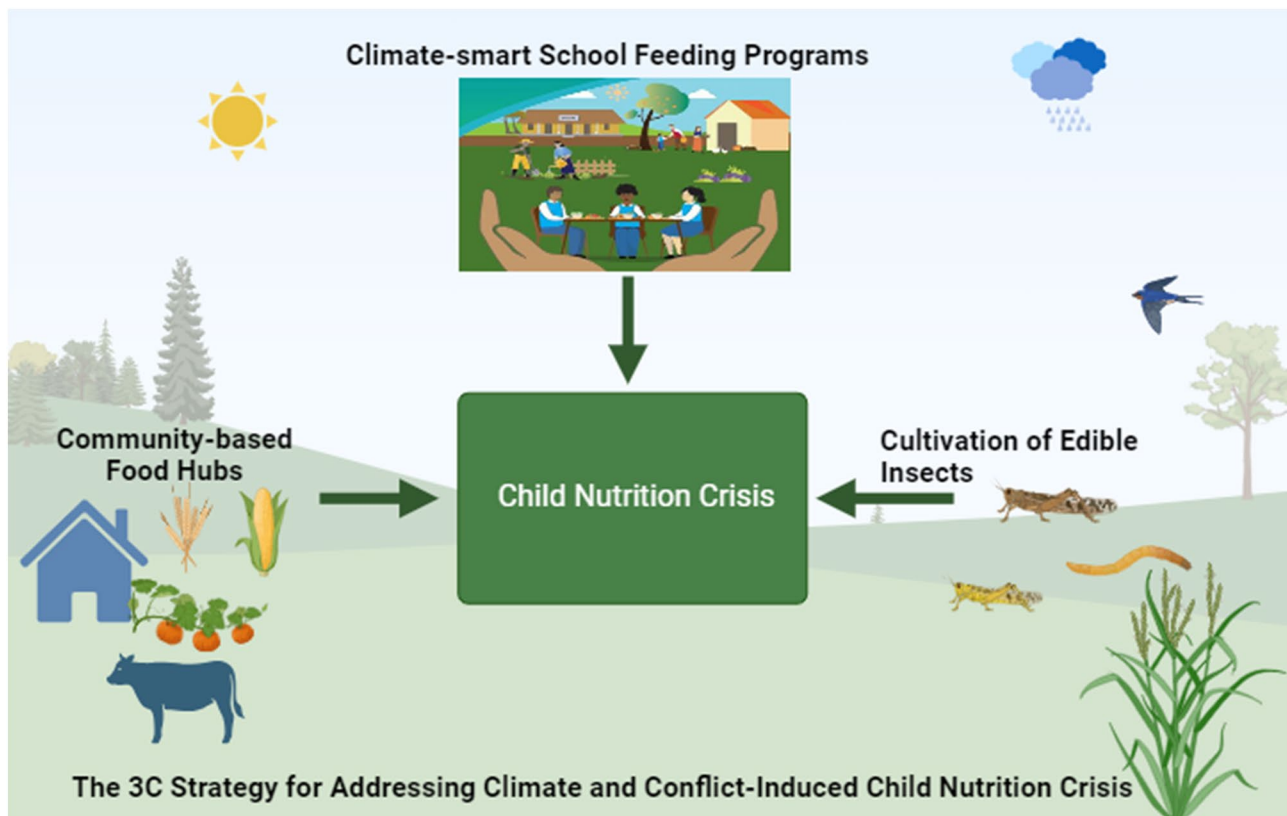


Fig. 1 Illustrating the 3 C approach to addressing the child nutrition crisis

and child nutrition is crucial, as it allows for the refinement of practices and the scaling of successful models.

Conclusion

SSA is facing a major child nutrition crisis driven by the dual threats of climate change and ongoing conflicts. These intertwined factors disrupt agricultural productivity, displace populations, and destroy infrastructure, leading to significant increases in food insecurity and malnutrition among children. Recent UNICEF data highlights the severity of this issue, revealing that 1 in 4 children globally live in severe food poverty, with those affected being up to 50% more likely to suffer from life-threatening malnutrition. Climate change exacerbates this crisis by intensifying extreme weather events, which hinder food production and access, while conflicts further compound the problem by destabilizing regions and obstructing humanitarian efforts.

Addressing this existential crisis requires a multifaceted approach that integrates evidence-based, cost-effective strategies into national and international policies. The proposed 3 C approach—climate-smart school feeding programs, cultivation of edible insects, and community-based food hubs—offers viable solutions to enhance child nutrition and build climate resilience. Implementing pilot projects in collaboration with local stakeholders

and establishing robust monitoring systems are crucial steps for assessing the effectiveness of these interventions and refining them for broader application.

Author contributions

OJO and ATA conceptualized the current study. OJO and AMY wrote the first draft manuscript. All authors edited and reviewed the manuscript. All authors have read and agreed to the published version of the manuscript.

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Data availability

No datasets were generated or analysed during the current study.

Declarations

Ethics approval and consent to participate

Not applicable.

Competing interests

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