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EDITED AND REVIEWED BY
Kathleen L. Hefferon,
Cornell University, United States

*CORRESPONDENCE
Sumit Chakravarty
✉ c_drsumit@yahoo.com

†PRESENT ADDRESS
Gopal Shukla,
Department of Forestry, North Eastern Hill
University (Tura Campus), Tura, Meghalaya,
India

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Editorial: Food security: sustainability and accessibility

Sumit Chakravarty^{1*}, Arun Jyoti Nath² and Gopal Shukla^{1†}

¹Department of Forestry, Uttar Banga Krishi Viswavidyalaya, Cooch Behar, India, ²Department of Ecology and Environmental Science, Assam University, Silchar, Assam, India

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Editorial on the Research Topic

Food security: sustainability and accessibility

The enhancement of agricultural productivity in response to food crises poses severe environmental degradation, which has been undermined to feed the world's growing population. The State of Food Security and Nutrition in the World Report, [FAO \(2018\)](#) outlined the failures of human responses toward “Zero Hunger” and nutritional fulfillment. The Global Report on Food Crises (2023) estimates that over a quarter of a billion people were acutely food-insecure and required urgent food assistance in 58 food-crisis countries/territories in 2022. Similarly, the Global Hunger Index report (2022) highlighted the severe hunger in 44 countries, including 828 million people in the world; South Asia and parts of Africa south of the Sahara are highly susceptible to food crises in future ([Resnick et al., 2022](#)). The striking global food crisis is the integration of remnant disruption of socio-economic settings, inequalities, inaccessibility and ecological imbalance. The consequences of anthropogenic climate change have drawn attention and are a crucial driver of global food crises and malnutrition. Hence, enduring sustainability in food productivity with opportunities for accessibility plays a vital role in achieving long-term food security.

[Ajibade et al.](#) have highlighted the importance of Sustainable intensification of agriculture to meet the demand of growing populations' nutritional needs while limiting environmental degradation. The research analyzed the scientific output on sustainable agriculture for the last decade in the globe using bibliometric analysis, which revealed that (1,610) studies were conducted on sustainable agriculture by (6,346) authors belonging to (1,981) organizations over (115) countries. The number of publications and citations on sustainable agriculture increased in 2020, with 293 publications and 10,275 citations.

The effectiveness of artificial insemination concerning the food and nutritional security of smallholder pig production systems of the Indian Himalayas was discussed by [Singh et al.](#) The result shows an 87.33% increase in net returns per farrowing due to artificial insemination compared to natural breeding.

Coffee is the economy of Ethiopia and is well-known for its quality in the global market. Despite this, the study on food security in the coffee-growing communities in Yayu of Southwestern Ethiopia by [Jemal et al.](#) found that 83% of households were hunger-free in the shortage season but that dietary diversity was inadequate. The surplus season brought over 50% of children under five and women without heme iron-containing foods, while the shortage season brought 88%.

[Tian and Liu](#) explored China's agricultural investment along the Belt and Road, wherein the Zero-inflated Poisson Model was applied. The authors referred to the advancement in regional cooperation in farmland investment, livelihood security in less developed regions,

grain security in developing countries and conservation of water and land resources while valuing the distribution and sales of agricultural products in the Belt and Road countries.

Moore et al. highlighted the crucial role of women's decision-making as a point of entry to improving nutritional outcomes of children through changes in empowerment, as it can determine the resource allocation within the household.

Food insecurity and income inequality are critical issues in developing countries. A study on the impact of urban safety net on income, food expenditure and intake capacity of poor households in Addis Ababa city, Ethiopia, by Tareke outlined that the cash transfer program has potentially uplifted the economic condition of the marginalized communities and able to enhance the diet intake. Research suggested effective policy interventions to improve the regularity and amount of cash transfers and supplies of emergency aids by implementing skill development programs.

Conservation agriculture exhibits a more incredible response to the ill impact of weed and pest infestation. Raj et al. underlined how zero tillage-based triple cropping with residue management and herbicide help control weed and pest infestation. This conservation agriculture practice could be a possible alternative to puddled transplanted rice in India's North-wester Indo-Gangetic Plains and similar agroecological zones of the tropics and sub-tropics.

Ahmad Rizal and Nordin explored the critical determining factors for the adaptability of innovation by the farmers to combat the food crisis in Post COVID-19 era, considering the studies over the last 15 years using PRISMA-P based on the SCOPUS and Web of Science database. The authors underlined that technological adaptability in the farmland could increase productivity and help ensure food availability and nutrition.

Ukraine's war has resulted in mass displacement of the human population and disrupted the socio-economical settings of the communities, leading to a severe global food crisis. Hereafter, Russia and Ukraine's high dependency on food grains drives the Middle East countries to a critical food crisis. Al-Saidi highlighted that Lebanon, Sudan, and Yemen are highly exposed and politically fragile in the food sectors due to Russia and Ukraine wars. This resulted in the inaccessibility of food and nutrition in the Gulf countries. The authors outlined the immediate response to strengthening sustainable agriculture, enhancing storage capacities, and grain procurement strategies from international suppliers to mitigate the food crisis.

A community-based study on the Productive SafetyNet program in the South Gondar Zone of Northwest Ethiopia was accomplished by Engidaw et al., where authors underlined that the infants from households with Productive SafetyNet users had

a low minimum acceptable diet which is interlinked with marital status, father's educational status, child age, wealth index and place of delivery.

The cultivators of the South East Asian region are low in essential amino acids, particularly lysine and tryptophan content. Kaur et al. analyzed physical characteristics, proximate composition and flat bread (chapatti) making quality among seven genotypes comprising two QPM hybrids, two normal maize hybrids and three normal white maize landraces. The result showed that Landrace 593 has the highest protein and ash content, PMH 10 and IQMH 203 exhibited the highest and lowest hydration index, respectively. In contrast, two QPM hybrids showed significantly higher lysine and tryptophan content than other genotypes. Additionally, concerning chapatti making, QPM hybrids were identified as promising materials with improved nutritional quality.

This Research Topic will provide an overview of the present scenario on food security and potential adaptation in response to the global food crisis.

Author contributions

SC: Conceptualization, Writing – review & editing. AN: Writing – original draft. GS: Writing – review & editing.

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Conflict of interest

The authors declare that the research was conducted in the absence of any commercial or financial relationships that could be construed as a potential conflict of interest.

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