

Food Security and Health Outcomes: Supporting Climate Change Adaptation in Sub-Saharan Africa

Nathalie Gatti and Lilla Eperjesi

Issue

Despite the widespread recognition of the intersectional dimensions of food security and malnutrition, Canada's development initiatives in Sub-Saharan Africa (SSA) remain siloed and compartmentalized, failing to capture key intersections between gender, food security and health outcomes. To meaningfully protect communities from malnutrition in a changing climate, it is essential that Global Affairs Canada (GAC) support initiatives that prioritize women smallholder producers, to build local capacity for improving nutrition and health outcomes.

Background

The Food and Agriculture Organization (FAO) defines food security as the circumstances “when all people, at all times, have physical and economic access to sufficient, safe and nutritious food to meet their dietary needs and food preferences for an active and healthy life” at the individual, household, national and global level (FAO 2006, 1). In SSA, malnutrition and food insecurity are widespread and urgent public health challenges. In 2020, an estimated 264.2 million people living in SSA were undernourished, representing 24.1 percent of the population (Owolade et al. 2022). Globally, women, infants, children and adolescents are at a higher risk of malnutrition, which manifests in wasting, stunting and nutrient deficiencies (World Health Organization 2024).

For individuals and households in SSA, the risk of food insecurity and malnutrition is heightened by social, economic and environmental factors including poverty, income, education level, household size, employment status, and the age and gender of the head of the household (Drammeh, Hamid, and Rohana 2019). Women are disproportionately affected by food insecurity; they are two percent more likely to experience some form of food insecurity than their male counterparts. This is largely due to social norms, which determine the distribution of food within communities and households: men in SSA receive the best food because they are perceived as having more productive roles, while women are subjected to eating lower quality food or leftovers (Odey et al. 2022).

Despite the disproportionate effect of food insecurity experienced by women, women smallholder producers are the key to strengthening food and nutrition security capacity in SSA. Women play an essential role in small-scale agriculture, farm labour and day-to-day family subsistence, producing a large percentage of food across SSA and comprising an estimated 50 percent of those employed in the agricultural sector (ibid.). Due to gendered social and economic inequalities, however, there is a large productivity gap between women and men in the agricultural sector, underpinned by gendered norms and practices, unequitable power relations and rigid gender divisions of labour. Gendered agricultural productivity gaps manifest through lower access to agricultural inputs,

lower returns on inputs used, less secure land rights and gender-based market distortions (Rodgers and Akram-Lodhi 2019), in addition to higher burdens of care work and household management responsibilities (Brixi and Van Nieuwkoop 2022). As such, transformative gendered approaches are essential to bolster women's agricultural productivity in SSA.

Canada's Role

In recent years, the importance of global health has become increasingly apparent. Global outbreaks have exemplified how the interconnected nature of our social, economic and political systems have significant effects on worldwide health (Elliott 2022). Addressing health outcomes such as malnutrition, therefore necessitate a global health approach, requiring global attention and support. Similarly, it is widely accepted that food security cannot be achieved unless it is universal, meaning that it is achieved for all individuals, households, communities and nations (FAO 2006, 1). Therefore, Canada has a responsibility to contribute to progress towards the goals of global health and food security.

This responsibility aligns with Canada's commitments to the Feminist International Assistance Policy, the Sustainable Development Goals and the G7 (Group of Seven) Adaptation Accelerator Hub. Canada's Feminist International Assistance Policy highlights the importance of gender equality and the empowerment of women and girls in a variety of areas, including health and nutrition, sustainable agriculture and climate adaptation (GAC 2017). Canada's commitment to the Sustainable Development Goals, particularly the goals of zero hunger, good health and well-being, and gender equality, similarly exemplify Canada's involvement in supporting the agricultural production of women in SSA (Employment and Social Development Canada 2021). Lastly, as part of the G7 Adaptation Accelerator Hub, Canada commits to strengthening support and enhancing the adaptive capacity of countries most affected by climate change, which includes SSA (G7 Italia 2024).

Case Studies

Canada's main priorities in Africa include "increasing economic cooperation, strengthening partnerships, providing international development assistance, and promoting peace, security, democracy and human rights" (Government of Canada 2025, para. 1). Canada's Feminist International Assistance is the foundation for the delivery of

Canada's international assistance. Between 2017-2018 and 2022-2023 the Canadian government provided CDN\$18.4 billion in international assistance to SSA to improve the livelihoods of people through better health, nutrition, food security education and economic well-being (ibid.). Commercial exchanges between Canada and Africa have grown significantly since 2020, with exports from Canada increasing by 13 percent and imports from Africa by 130 percent (ibid.). To support future trade and commercial ties, it is crucial to support the stability of African nations in the context of food security and health.

Given the diversity between countries within SSA, this brief focuses on two countries for analysis: Burkina Faso and Ghana. GAC provides comparable international assistance to both nations, which confront similar challenges regarding food security and health outcomes. In Burkina Faso, out of 22.5 million people, 40 percent live below the poverty line (World Food Programme 2025, 1). The majority of the population is dependent on rain-fed agriculture, leaving them vulnerable to climate-related shocks (ibid.). Food insecurity, therefore, is a critical issue with a reported 2.7 million people facing acute food insecurity between June and August of 2024, an increase of 687,000 from the same period in 2019 (ibid.). Additionally, while Burkina Faso is on course to meet its maternal, infant and young child nutrition targets, progress is slow in reducing anemia among women of reproductive age and stunting among children under the age of five (Global Nutrition Report n.d.b).

Similarly in Ghana, hunger and malnutrition remains an issue, especially in the north, where 90 percent of families rely on agriculture as their main source of income (World Food Programme 2024, 1). Over one million people in Ghana are food insecure; chronic malnutrition of children aged six to 59 months is at 17 percent (ibid.). Ghana has been on course to meet targets for maternal, infant and young child nutrition, however anemia among women of reproductive age is still at 35.4 percent, while stunting is at 17.5 percent (Global Nutrition Report n.d.a).

Women and children are disproportionately affected by food insecurity and its negative health effects. The World Food Programme reports that the economic toll of child malnutrition accounts for a 6.5 percent loss of Ghana's GDP annually (World Food Programme 2024, 1). Women continue to face social, economic and political barriers, including the lack of control and mobilization of assets, access to education, the exercise of local indigenous

knowledge and access to scale-appropriate technology that significantly impacts food security.

GAC is already very active in supporting initiatives in Burkina Faso and Ghana related to food security and health. In the past five years, between 2019 and 2024, GAC contributed international assistance to Burkina Faso and Ghana through a focus on food security, health and climate-resilient agriculture. Highlights include a CDN\$1.5 million and a CDN\$12.7 million food security project in Ghana and a CDN\$20 million health project servicing Ghana, Burkina Faso, and other Sub-Saharan countries. (Government of Canada n.d.a; GAC 2022; World Food Programme 2023; Government of Canada n.d.b). In terms of support on health, both countries received grants which significantly improved issues like sanitation, reproductive healthcare access and disease control (ibid. n.d.a; n.d.b). With respect to climate resilient agriculture, our research did not find publicly available programs in Ghana past 2018. In Burkina Faso, three climate resilience projects were carried out to support the development of coping strategies for vulnerable populations and develop agro-ecological farms (ibid.).

International assistance provided by GAC somewhat aligns with the national policy targets of Burkina Faso and Ghana. Nutrition targets in national policies in Burkina Faso and Ghana include reducing anemia among women, child stunting, childhood wasting and creating a comprehensive multi-sectoral nutrition plan (Global Nutrition Report, n.d.b; n.d. a). While food security, health and climate-resilient agriculture are intertwined in achieving these targets, a holistic approach in addressing these issues is lacking. Canada falls short of supporting Burkina Faso and Ghana in a fully rounded way as it does not account for the intersectional dimensions of food insecurity and malnutrition that result in disproportionate impacts on women and women smallholder producers.

GAC can amplify its contributions by taking a holistic approach in addressing food security, health and climate adaptation. Supporting women smallholder producers in combatting malnutrition for themselves and their communities necessitates approaches that target inequitable social and economic relationships and structural discrimination. Progress towards the UN Sustainable Development Goals 2 (Zero Hunger) and 3 (Good Health and Well-being), requires collective action toward Goal 5 (Gender Equality). Therefore, the recommendations in this

brief focus on initiatives, mechanisms and measures that prioritize social transformation and holistically support the agency of women smallholder producers in addressing malnutrition in their communities.

Recommendations

Canada must engage in transformative projects, specifically those that target women smallholder producers, to build local capacity in the fight against malnutrition. Transformative gendered approaches that dismantle systemic barriers rather than reinforce them, are essential in the strengthening of women's agricultural productivity in SSA. Such transformative programs must be centred around the elimination of social, economic and political barriers for women smallholder farmers, including the control and mobilization of assets and farm inputs, access to education, the exercise of local indigenous knowledge, access to and adoption of scale-appropriate technology, and other unequitable gendered divisions that have large effects on farm productivity. Through the transformation of gender dynamics and the empowerment of women, projects and programs targeted at increasing societal equity will be far more impactful than standard development interventions. As Canada continues to engage with SSA through targeted projects and programs, societal transformation must be a central aim.

Canada must shift programming and funding efforts to be more holistic and interdisciplinary. As noted in this brief, current GAC initiatives in SSA are fairly siloed and compartmentalized, separated into key issue areas: gender, food security, health and climate adaptation. Interdisciplinarity, especially in these key areas, allows for deeper insight and could identify potential policy convergence, further enabling projects to be more effective in their application and implementation (Mahringer et al. 2023). Holistic approaches that incorporate gender, food security, health and climate adaptation can have long-lasting and further-reaching impacts. Such approaches are more attuned to local social, economic and political dynamics, intersectionality and the ways in which gender, food security, health and climate adaptation interact and manifest at the local level. Thus, the adoption of holistic and interdisciplinary approaches, such as the methodology for interdisciplinary research framework (Tobi and Kampen 2018) would be incredibly beneficial for Canada's engagement in SSA.

Canada must continue collaborating with local governments to support both existing and new policy developments. GAC should maintain close relationships with governments across SSA to develop, support and align policy goals. The cases of Burkina Faso and Ghana demonstrate that national policies are being implemented by local governments to address food insecurity and malnutrition. While GAC aligns with these policy goals, it also has a responsibility to work with governments to address policy gaps. For example, GAC should enhance its support for food security among women of child-bearing age in Burkina Faso to close the government's policy gap in reducing the incidence of low birth weights among infants. It is essential that Canada continues to align its funding with local policy goals and work collaboratively to provide additional support where needed.

Canada must enhance funding to support and maintain free primary education. Women are disproportionately affected by food insecurity and malnutrition, yet they are the key to strengthening food and nutrition security capacities in their families and communities. School fees in SSA are a significant financial burden. Even in countries where free primary education is offered, parents are still required to pay ancillary school expenses (Klapper and Panchamia 2023). Childcare in SSA is limited. The most common strategy — used by 57 percent of mothers with children under the age of three — is to care for their children while working (Waterhouse, Hill and Hinde 2017, 773). The simultaneous task of work and childcare negatively affects women's well-being, including their ability to provide for their families (ibid., 771). Providing programs that enable children to attend school at no cost strengthens women's well-being and enhances their ability to improve food and nutrition security of their families and communities.

About the Authors

Lilla Eperjesi is a student in the University of Waterloo's Master of Arts in Global Governance program, based at the Balsillie School of International Affairs.

Nathalie Gatti is a student in the University of Waterloo's Master of Arts in Global Governance program, based at the Balsillie School of International Affairs.

Acknowledgements

The authors would like to thank their mentors, Professor Susan Elliott and Professor Helena Shilomboleni and co-mentor Anastasia Papadopoulos for their guidance and mentorship throughout the course of the fellowship program.

Works Cited

- Brixi, Hana and Martien Van Nieuwkoop. 2022. "Empower HER to Address Food and Nutrition Security in Africa." *World Bank Blogs*. 2022. <https://blogs.worldbank.org/en/voices/empower-her-address-food-and-nutrition-security-africa>.
- Drammeh, Wuyeh, Noor Aman Hamid and A. J. Rohana. 2019. "Determinants of Household Food Insecurity and Its Association with Child Malnutrition in Sub-Saharan Africa: A Review of the Literature." *Current Research in Nutrition and Food Science Journal* 7 (3): 610–23.
- Elliott, Susan J. 2022. "Global Health for All by 2030." *Canadian Journal of Public Health* 113 (2): 175–77. <https://doi.org/10.17269/s41997-022-00623-x>.
- Employment and Social Development Canada. 2021. "Canada and the Sustainable Development Goals." Program descriptions. February 16. www.canada.ca/en/employment-social-development/programs/agenda-2030.html.
- FAO. 2006. "Food Security." Agricultural and Development Economics Division. https://www.fao.org/fileadmin/templates/faoitaly/documents/pdf/pdf_Food_Security_Cocept_Note.pdf.
- G7 Italia. 2024. "The G7 Countries Join Forces to Strengthen Adaptation Actions in Support of the Most Vulnerable Countries." G7 Italia. www.g7italy.it/en/the-g7-countries-join-forces-to-strengthen-adaptation-actions-in-support-of-the-most-vulnerable-countries.
- GAC. 2017. "Canada's Feminist International Assistance Policy." GAC. February 21 www.international.gc.ca/world-monde/issues_developpement-enjeux_developpement/priorities-priorites/policy-politique.aspx?lang=eng.

- . 2022. “Canada’s Funding Responds to Food and Nutrition Crisis in Sahel and Lake Chad Regions.” Government of Canada. April 6. www.canada.ca/en/global-affairs/news/2022/04/canadas-funding-responds-to-food-and-nutrition-crisis-in-sahel-and-lake-chad-regions.html.
- Global Nutrition Report. n.d.a. “Country Nutrition Profiles — Ghana.” <https://globalnutritionreport.org/resources/nutrition-profiles/africa/western-africa/ghana/>.
- . n.d.b. “Country Nutrition Profiles — Burkina Faso.” <https://globalnutritionreport.org/resources/nutrition-profiles/africa/western-africa/burkina-faso/#:~:text=Burkina%20Faso%20has%20shown%20limited,women%20and%209.2%25%20for%20men.>
- Government of Canada. 2025. “Canada and Africa.” March 6. https://www.international.gc.ca/world-monde/international_relations-relations_internationales/africa-afrique/index.aspx?lang=eng.
- . n.d.a. “International Assistance Projects Funded by Global Affairs Canada — Burkina Faso.” <https://w05.international.gc.ca/projectbrowser-banqueprojets/filter-filtre>.
- . n.d.b. “International Assistance Projects Funded by GLObal Affairs Canada — Ghana.” <https://w05.international.gc.ca/projectbrowser-banqueprojets/filter-filtre>
- Klapper, Leora and Mansi Vipin Panchamia. 2023. “The High Price of Education in Sub-Saharan Africa.” *World Bank Blogs*. March 13. <https://blogs.worldbank.org/en/developmenttalk/high-price-education-sub-saharan-africa#:~:text=Even%20in%20countries%20like%20Uganda,%24420%2D680%20for%20private%20schools.>
- Mahringer, Christian A., Franziska Baessler, Martin F. Gerchen, Christoph Haack, Katharina Jacob and Simone Mayer. 2023. “Benefits and Obstacles of Interdisciplinary Research: Insights from Members of the Young Academy at the Heidelberg Academy of Sciences and Humanities.” *iScience* 26 (12): 108508. <https://doi.org/10.1016/j.isci.2023.108508>.
- Nunbogu, Abraham Marshall and Susan J. Elliott. 2022. “Characterizing Gender-Based Violence in the Context of Water, Sanitation, and Hygiene: A Scoping Review of Evidence in Low- and Middle-Income Countries.” *Water Security* 15 (April): 100113. <https://doi.org/10.1016/j.wasec.2022.100113>.
- Nyantakyi-Frimpong, Hanson, Joseph Kangmennaang, Rachel Bezner Kerr, Isaac Luginaah, Laifolo Dakishoni, Esther Lupafya, Lizzie Shumba and Mangani Katundu. 2017. “Agroecology and Healthy Food Systems in Semi-Humid Tropical Africa: Participatory Research with Vulnerable Farming Households in Malawi.” *Acta Tropica, Ecohealth: An African Perspective* 175 (November): 42–9. <https://doi.org/10.1016/j.actatropica.2016.10.022>.
- Odey, Goodness Ogeyi, Moriam Adesola Adegbite, Salomey Asaah Denkyira, Samar Mohammed Alhaj and Don Eliseo Lucero-Prisno. 2022. “Chapter Two — Women and Food Security in Africa: The Double Burden in Addressing Gender Equality and Environmental Sustainability.” In *Advances in Food Security and Sustainability*, edited by Marc J. Cohen, 7:35–59. Elsevier. <https://doi.org/10.1016/bs.af2s.2022.07.001>.
- Owolade, Adedoyin John-Joy, Ridwanullah Olamide Abdullateef, Ridwan Olamilekan Adesola and Esanju Daniel Olaloye. 2022. “Malnutrition: An Underlying Health Condition Faced in Sub Saharan Africa: Challenges and Recommendations.” *Annals of Medicine and Surgery* 82 (October): 104769. <https://doi.org/10.1016/j.amsu.2022.104769>.
- Rodgers, Yana and Haroon Akram-Lodhi. 2019. “The Gender Gap in Agricultural Productivity in Sub-Saharan Africa: Causes, Costs and Solutions.” UN Women Policy Brief Series. UN Women. www.unwomen.org/en/digital-library/publications/2015/12/un-women-policy-brief-series.
- Tobi, Hilde and Jarl K. Kampen. 2018. “Research Design: The Methodology for Interdisciplinary Research Framework.” *Quality & Quantity* 52 (3): 1209–25. <https://doi.org/10.1007/s11135-017-0513-8>.

Waterhouse, Philippa, Allan G. Hill and Andrew Hinde. 2017. "Combining Work and Child Care: The Experiences of Mothers in Accra, Ghana." *Development Southern Africa* 34 (6): 771–86. <https://doi.org/10.1080/0376835X.2017.1323627>.

World Food Programme. 2023. "Canada Funding Strengthens Delivery of Vital Food Assistance in Burkina Faso." February 15. www.wfp.org/news/canada-funding-strengthens-delivery-vital-food-assistance-burkina-faso.

———. 2024. "Ghana." <https://www.wfp.org/countries/ghana>.

———. 2025. "WFP Burkina Faso Country Brief." www.wfp.org/countries/burkina-faso.

World Health Organization. 2024. "Malnutrition." www.who.int/news-room/fact-sheets/detail/malnutrition.