

Editorial

Sustainable Food Systems, Nutrition, and Food Security: Emerging Challenges and Opportunities in Latin America

Samuel Durán-Agüero ¹  and João P. M. Lima ^{2,3,4,*} 

¹ Escuela de Nutrición y Dietética, Facultad de Ciencias de la Rehabilitación y Calidad de Vida, Universidad San Sebastián, Providencia 7500000, Chile; samuel.duran@uss.cl

² H&TRC—Health and Technology Research Center, Coimbra Health School, Polytechnic University of Coimbra, 3046-854 Coimbra, Portugal

³ CERNAS—Research Center for Natural Resources, Environment and Society, 3046-854 Coimbra, Portugal

⁴ SUScita—Research Group for Sustainability, Cities and Urban Intelligence, Polytechnical University of Coimbra, 3030-199 Coimbra, Portugal

* Correspondence: joao.lima@estesc.ipc.pt

1. Introduction

Food systems are currently at the center of some of the most pressing global challenges, including climate change, food insecurity, malnutrition, biodiversity loss, and the growing burden of non-communicable diseases [1,2]. Increasing evidence suggests that nutrition can no longer be addressed solely from a biomedical perspective but must instead be understood within the broader framework of sustainable development and planetary health [3,4]. The landmark EAT–Lancet Commission proposed that achieving healthy diets from sustainable food systems is one of the greatest challenges of the twenty-first century, emphasizing the need to transform food production and consumption patterns to feed a projected global population of 10 billion people while remaining within planetary boundaries [5].

The urgency of this transformation is reinforced by recent evidence, which highlights that food systems simultaneously influence environmental sustainability, social equity, nutrition, and food security. Contemporary analyses suggest that climate change, biodiversity loss, and disruptions in food production increasingly threaten the availability, accessibility, and affordability of healthy diets worldwide [6]. Furthermore, the latest global assessments indicate that hunger, food insecurity, and malnutrition remain major public health concerns, despite substantial advances in food production [7,8].

Within this context, food systems interact through multiple dimensions, including food security, nutrition, environmental sustainability, and population health. The multicenter study by Parra-Soto et al. [9] demonstrated that plant-based dietary patterns, particularly vegan and vegetarian diets, were associated with significantly higher sustainability scores, whereas Western dietary patterns showed a consistent inverse association with sustainable lifestyles. These findings are aligned with international evidence indicating that dietary patterns rich in plant foods generally exhibit lower environmental footprints and contribute to more sustainable food systems.

Complementing these findings, Meza-Miranda et al. [10]. reported that higher consumption of ultra-processed foods was strongly associated with less sustainable lifestyles across Latin America and Spain. Individuals with greater intake of fast foods, sugary beverages, and processed snacks were significantly more likely to exhibit lower sustainability scores. These findings are particularly relevant given the rapid expansion of ultra-processed foods worldwide and their recognized contribution to obesity, cardiovascular



Received: 11 June 2026

Accepted: 22 June 2026

Published: 25 June 2026

Copyright: © 2026 by the authors.

Licensee MDPI, Basel, Switzerland.

This article is an open access article distributed under the terms and conditions of the [Creative Commons Attribution \(CC BY\)](https://creativecommons.org/licenses/by/4.0/) license.

disease, type 2 diabetes, and other chronic conditions [11–13]. Increasingly, ultra-processed foods are also being discussed as markers of unsustainable food systems characterized by intensive processing, aggressive marketing, and environmental burdens throughout the production chain [14,15].

2. An Overview of Published Articles

Food accessibility represents another critical dimension of sustainable food systems. Landaeta-Díaz et al. [16] demonstrated a significant relationship between urban food deserts and cardiovascular health among older adults in Santiago, Chile. Their findings suggest that limited access to healthy foods is associated with poorer health outcomes and reinforces the importance of considering spatial and socioeconomic determinants of nutrition. These observations are consistent with a growing body of literature showing that food insecurity and unhealthy food environments contribute to health inequities and increase the risk of chronic diseases, particularly among vulnerable populations [17–19].

Nutrition education remains a fundamental strategy for improving dietary behaviors and preventing diet-related diseases [20,21]. The scoping review by Mullaney et al. [22], found that school-based nutrition education interventions improve dietary knowledge, self-efficacy, and eating behaviors among adolescents, particularly when educational approaches are combined with supportive modifications to food environments. These findings support current recommendations advocating for integrated interventions that combine education, food literacy, and environmental changes to promote healthier and more sustainable dietary patterns throughout the life course [23,24].

The evidence presented in this collection highlights the interconnected nature of contemporary nutrition challenges. Sustainable diets, food security, healthy food environments, nutrition education, and the reduction in ultra-processed food consumption should not be considered isolated objectives but rather complementary pillars of a comprehensive food systems transformation. Latin America represents a particularly relevant context in which these issues converge, given the coexistence of obesity, food insecurity, dietary inequalities, environmental degradation, and climate vulnerability [25–27].

3. Conclusions

Future research should prioritize longitudinal and intervention-based studies capable of evaluating the effects of food system transformations on both health and environmental outcomes. Particular attention should be directed toward populations disproportionately affected by food insecurity, including children, older adults, and socioeconomically disadvantaged groups. Ultimately, achieving the Sustainable Development Goals will require evidence-based policies that simultaneously improve nutrition, strengthen food security, and promote environmentally sustainable food systems. As emphasized by the EAT–Lancet Commission and subsequent international reports, transforming food systems is not only a nutritional imperative but also a prerequisite for achieving planetary health and social equity in the decades ahead.

Author Contributions: S.D.-A.: writing—original draft preparation; J.P.M.L.: writing—review and editing. All authors have read and agreed to the published version of the manuscript.

Funding: This research received no external funding.

Conflicts of Interest: The authors declare no conflicts of interest.

References

1. Fanzo, J.C.; Downs, S.M. Climate change and nutrition-associated diseases. *Nat. Rev. Dis. Primers* **2021**, *7*, 90. [[CrossRef](#)] [[PubMed](#)]

2. Leydon, C.L.; Leonard, U.M.; McCarthy, S.N.; Harrington, J.M. Aligning Environmental Sustainability, Health Outcomes, and Affordability in Diet Quality: A Systematic Review. *Adv. Nutr.* **2023**, *14*, 1270–1296. [[CrossRef](#)] [[PubMed](#)]
3. Aydoğdu, G.S.; Gezmen Karadağ, M. The Two Dimensions of Nutrition for the Planet: Environment and Health. *Curr. Nutr. Rep.* **2025**, *14*, 49. [[CrossRef](#)] [[PubMed](#)]
4. Hemler, E.C.; Hu, F.B. Plant-Based Diets for Personal, Population, and Planetary Health. *Adv. Nutr.* **2019**, *10*, S275–S283. [[CrossRef](#)] [[PubMed](#)]
5. Tuninetti, M.; Ridolfi, L.; Laio, F. Compliance with EAT-Lancet dietary guidelines would reduce global water footprint but increase it for 40% of the world population. *Nat. Food.* **2022**, *3*, 143–151. [[CrossRef](#)] [[PubMed](#)]
6. Cattaneo, A.; Sadiddin, A.; Vaz, S.; Conti, V.; Holleman, C.; Sánchez, M.; Torero, M. Ensuring affordability of diets in the face of shocks. *Food Policy* **2023**, *117*, 102470. [[CrossRef](#)]
7. Moramarco, S.; Buonomo, E.; Andreoli, A.; Palombi, L. Tackling Global Malnutrition and Hunger in the Final Push Toward the 2030 Agenda. *Nutrients* **2025**, *17*, 3059. [[CrossRef](#)] [[PubMed](#)]
8. Burki, T. Food security and nutrition in the world. *Lancet Diabetes Endocrinol.* **2022**, *10*, 622. [[CrossRef](#)] [[PubMed](#)]
9. Parra-Soto, S.; Carpio-Arias, T.V.; Rios-Castillo, I.; Pérez-Armijo, P.; Landaeta-Díaz, L.; Murillo, A.G.; Araneda-Flores, J.; Cavagnari, B.M.; Gómez, G.; Morales, G.; et al. Dietary Patterns and Sustainable Lifestyles: A Multicenter Study from Latin America and Spain. *Foods* **2025**, *14*, 2065. [[CrossRef](#)] [[PubMed](#)]
10. Meza-Miranda, E.R.; Parra-Soto, S.; Landaeta-Díaz, L.; Rios-Castillo, I.; Pérez-Armijo, P.; Carpio-Arias, T.V.; Jara Nercasseau, M.; Gómez, G.; Cavagnari, B.M.; Araneda-Flores, J.; et al. Consumption of Ultra-Processed Foods and Sustainable Lifestyles: A Multicenter Study. *Nutrients* **2026**, *18*, 365. [[CrossRef](#)] [[PubMed](#)]
11. Temple, N.J. Making Sense of the Relationship Between Ultra-Processed Foods, Obesity, and Other Chronic Diseases. *Nutrients* **2024**, *16*, 4039. [[CrossRef](#)] [[PubMed](#)]
12. Rodriguez-Hilarion, J.A.; Ramos-Castaneda, J.A.; Duran Agüero, S.; Sanchez Camargo, C.L. Effect of Ultra-Processed Foods Consumption on Human Health Outcomes: An Umbrella Review of Systematic Reviews and Meta-Analyses. *Nutr. Rev.* **2026**, nuag076. [[CrossRef](#)] [[PubMed](#)]
13. Gauci, S.; Lotfaliany, M.; Machado, P.; Hodge, A.; Gamage, E.; Levy, R.B.; da Costa Louzada, M.L.; Redfern, J.; O’Neil, A.; Marx, W.; et al. Exposure to ultra-processed food and risk of cardiovascular mortality: A prospective cohort study. *Eur. J. Prev. Cardiol.* **2025**, *32*, 1564–1572. [[CrossRef](#)] [[PubMed](#)]
14. Fardet, A.; Rock, E. Ultra-Processed Foods and Food System Sustainability: What Are the Links? *Sustainability* **2020**, *12*, 6280. [[CrossRef](#)]
15. Seferidi, P.; Scrinis, G.; Huybrechts, I.; Woods, J.; Vineis, P.; Millett, C. The neglected environmental impacts of ultra-processed foods. *Lancet Planet. Health* **2020**, *4*, e437–e438. [[CrossRef](#)] [[PubMed](#)]
16. Landaeta-Díaz, L.; Vergara-Perucich, F.; Aguirre-Nuñez, C.; Cancino-Contreras, F.; Correa-Parra, J.; Ulloa-León, F. Urban Food Deserts and Cardiovascular Health: Evaluating the Impact of Nutritional Inequities on Elderly Populations in Santiago. *Appl. Sci.* **2024**, *14*, 7575. [[CrossRef](#)]
17. Odoms-Young, A.; Brown, A.G.M.; Agurs-Collins, T.; Glanz, K. Food Insecurity, Neighborhood Food Environment, and Health Disparities: State of the Science, Research Gaps and Opportunities. *Am. J. Clin. Nutr.* **2024**, *119*, 850–861. [[CrossRef](#)] [[PubMed](#)]
18. Ziso, D.; Chun, O.K.; Puglisi, M.J. Increasing Access to Healthy Foods through Improving Food Environment: A Review of Mixed Methods Intervention Studies with Residents of Low-Income Communities. *Nutrients* **2022**, *14*, 2278. [[CrossRef](#)] [[PubMed](#)]
19. Seligman, H.K.; Laraia, B.A.; Kushel, M.B. Food insecurity is associated with chronic disease among low-income NHANES participants. *J. Nutr.* **2010**, *140*, 304–310. [[CrossRef](#)] [[PubMed](#)]
20. Eyles, H.C.; Mhurchu, C.N. Does tailoring make a difference? A systematic review of the long-term effectiveness of tailored nutrition education for adults. *Nutr. Rev.* **2009**, *67*, 464–480. [[CrossRef](#)] [[PubMed](#)]
21. Pérez-Rodrigo, C.; Aranceta, J. Nutrition education in schools: Experiences and challenges. *Eur. J. Clin. Nutr.* **2003**, *57*, S82–S85. [[CrossRef](#)] [[PubMed](#)]
22. Mullaney, K.; Mylotte, L.; McCloat, A. Examining the Efficacy of Post-Primary Nutritional Education Interventions as a Preventative Measure for Diet-Related Diseases: A Scoping Review. *Appl. Sci.* **2025**, *15*, 6901. [[CrossRef](#)]
23. Ares, G.; De Rosso, S.; Mueller, C.; Philippe, K.; Pickard, A.; Nicklaus, S.; van Kleef, E.; Varela, P. Development of food literacy in children and adolescents: Implications for the design of strategies to promote healthier and more sustainable diets. *Nutr. Rev.* **2024**, *82*, 536–552. [[CrossRef](#)] [[PubMed](#)]
24. Bastian, G.E.; Buro, D.; Palmer-Keenan, D.M. Recommendations for Integrating Evidence-Based, Sustainable Diet Information into Nutrition Education. *Nutrients* **2021**, *13*, 4170. [[CrossRef](#)] [[PubMed](#)]
25. Grajeda, R.; Hassell, T.; Ashby-Mitchell, K.; Uauy, R.; Nilson, E. Regional Overview on the Double Burden of Malnutrition and Examples of Program and Policy Responses: Latin America and the Caribbean. *Ann. Nutr. Metab.* **2019**, *75*, 139–143. [[CrossRef](#)] [[PubMed](#)]

26. Ferreira, S.R.G.; Macotela, Y.; Velloso, L.A.; Mori, M.A. Determinants of obesity in Latin America. *Nat. Metab.* **2024**, *6*, 409–432. [[CrossRef](#)] [[PubMed](#)]
27. Pérez-Ferrer, C.; Auchincloss, A.H.; de Menezes, M.C.; Kroker-Lobos, M.F.; Cardoso, L.O.; Barrientos-Gutierrez, T. The food environment in Latin America: A systematic review with a focus on environments relevant to obesity and related chronic diseases. *Public Health Nutr.* **2019**, *22*, 3447–3464. [[CrossRef](#)] [[PubMed](#)]

Disclaimer/Publisher’s Note: The statements, opinions and data contained in all publications are solely those of the individual author(s) and contributor(s) and not of MDPI and/or the editor(s). MDPI and/or the editor(s) disclaim responsibility for any injury to people or property resulting from any ideas, methods, instructions or products referred to in the content.