

An Analysis of Food Consumption patterns and determinants in developing countries.**Chhavi Verma¹, Dr. Mamta Kumari², Garima Dixit³, Anjali⁴, Dr. Dhirendra kumar⁵**^{1,3,4} Ph.D Research Scholar, Department of Food and Nutrition, ANDUAT, Kumarganj, Ayodhya- 224229² Associate Professor Department of Food and Nutrition, ANDUAT, Kumarganj, Ayodhya- 224229⁵ Ph.D Research Scholar, Department of Crop Physiology, College of Agriculture, Chandra Shekhar Azad University of Agriculture & Technology, Kanpur U.P.- 208002**Abstract**

Food consumption patterns in developing countries are undergoing significant transformations, driven by a multifaceted interplay of economic growth, urbanization, globalization, sociocultural change, and policy dynamics. Traditionally plant-based diets are increasingly giving way to energy-dense, processed, and animal-based foods, a shift commonly referred to as the nutrition transition.” This paper explores the key determinants of these changing patterns- including rising incomes, urban living, cultural and religious influences, and the impact of trade and policy liberalization-and assesses their regional manifestations in Sub-Saharan Africa, South and Southeast Asia, Latin America, and the Middle East and North Africa. While economic development and urbanization have enabled greater dietary diversity and reductions in undernutrition, they have also contributed to a rapid rise in overweight, obesity, and non-communicable diseases, particularly among urban populations. Furthermore, increased consumption of resource-intensive animal products and reliance on global food markets raise concerns about environmental sustainability and food security. Global drivers such as climate change, technological advancements, and market integration further complicate these trends. The paper concludes with policy recommendations emphasizing the need for nutrition-sensitive agriculture, food system reforms, responsible marketing, and investment in public health education to foster equitable, sustainable, and health-promoting dietary outcomes.

Keywords: Food consumption, sociocultural change, economic development and nutrition transition.

Statements and Declarations

I hereby declare that the work entitled “An Analysis of Food Consumption Pattern and Determination in Developing Countries” is my original work and has not been submitted for publication anywhere else.

Abstract

Food consumption patterns in developing countries are undergoing significant transformations, driven by a multifaceted interplay of economic growth, urbanization, globalization, sociocultural change, and policy dynamics. Traditionally plant-based diets are increasingly giving way to energy-dense, processed, and animal-based foods, a shift commonly referred to as the nutrition transition.” This paper explores the key determinants of these changing patterns- including rising incomes, urban living, cultural and religious influences, and the impact of trade and policy liberalization-and assesses their regional manifestations in Sub-Saharan Africa, South and Southeast Asia, Latin America, and the Middle East and North Africa. While economic development and urbanization have enabled greater dietary diversity and reductions in undernutrition, they have also contributed to a rapid rise in overweight, obesity, and non-communicable diseases, particularly among urban populations. Furthermore, increased consumption of resource-intensive animal products and reliance on global food markets raise concerns about environmental sustainability and food security. Global drivers such as climate change,

technological advancements, and market integration further complicate these trends. The paper concludes with policy recommendations emphasizing the need for nutrition-sensitive agriculture, food system reforms, responsible marketing, and investment in public health education to foster equitable, sustainable, and health-promoting dietary outcomes.

Keywords: Food consumption, sociocultural change, economic development and nutrition transition.

1. Introduction

Food consumption patterns in developing countries are undergoing profound transformations, shaped by a complex interplay of economic, demographic, sociocultural, and environmental factors. Traditionally, diets in these regions were predominantly plant-based, rich in coarse grains, legumes, and locally sourced fruits and vegetables, with limited intake of animal-source foods, processed products, and added sugars [14,25]. However, rapid economic development, urbanization, globalization, and the liberalization of food markets have led to a "nutrition transition"- a shift from traditional diets toward more energy-dense, animal-based, and processed food consumption [20]. Urbanization, in particular, has increased access to supermarkets and convenience foods while reducing physical activity, fostering dietary changes that lean toward higher fat, sugar, and salt intakes [7]. Rising household incomes also play a crucial role, enabling consumers to diversify their diets and increase the intake of high-value foods such as meat, dairy, and edible oils [16]. Cultural shifts, especially among younger generations influenced by Western dietary norms, further amplify these changes [11]. The consequences of these altered consumption patterns are multifaceted. On one hand, they have led to improvements in caloric intake and reduction in undernutrition in some populations [4]. On the other hand, they have contributed to a sharp rise in overweight, obesity, and non-communicable diseases (NCDs) such as type 2 diabetes, cardiovascular diseases, and certain cancers, especially in urban and wealthier population segments [15, 22]. This "double burden" of malnutrition—where undernutrition and overnutrition coexist within countries, communities, and even households—presents significant public health challenges [30]. In rural areas, meanwhile, dietary shifts are less pronounced but gradually increasing due to better market access and rural development [28]. Moreover, agricultural practices are being reshaped to meet changing demand, with a shift from staple crop production toward horticulture, livestock, and aquaculture in several regions [17]. These transformations raise critical concerns about environmental sustainability, particularly in terms of greenhouse gas emissions, water use, and land degradation linked to livestock and monoculture expansion [27]. Consequently, there is an urgent need for integrated food policy frameworks that promote healthy diets, support sustainable agricultural systems, and address the social inequalities underlying food access [9,3].

2. Determinants of Food Consumption Patterns

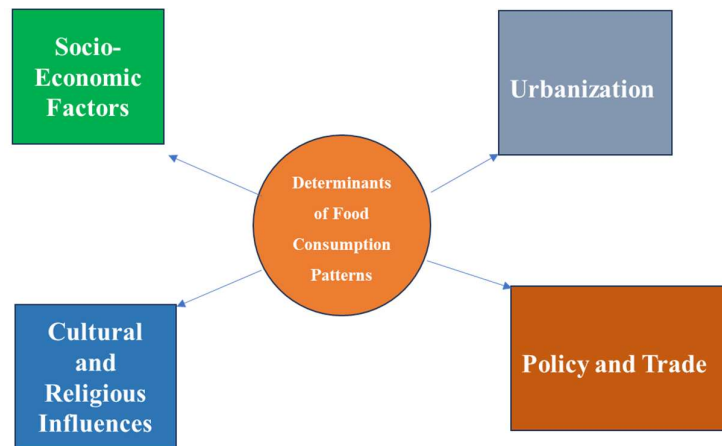


Fig 1: Determinants of Food Consumption Patterns

2.1 Socio- Economic Factors

Economic factors are among the most influential determinants shaping food consumption patterns in developing countries. One of the primary drivers is household income. As incomes rise, especially in urban and peri-urban areas, there is a noticeable shift in dietary habits—from monotonous, staple-based diets toward more varied and nutrient-rich food items, such as fruits, vegetables, dairy products, and animal-sourced proteins [23]. This phenomenon, often described as part of the “nutrition transition,” reflects Engel’s Law, which posits that the proportion of income spent on food declines as income increases, but the quality and diversity of food improve (Timmer, 2019). Households with greater disposable income are more likely to adopt Western-style diets characterized by processed foods, convenience meals, and high consumption of fats and sugars [20]. However, these positive developments are unevenly distributed. Stark income disparities, particularly between urban and rural populations, lead to significant nutritional inequalities. In rural areas, where poverty rates are typically higher and market access is limited, diets remain dominated by starchy staples such as maize, rice, cassava, or millet, often with insufficient intake of protein, micronutrients, and dietary fiber [4]. This not only perpetuates undernutrition and micronutrient deficiencies but also limits the ability of poor households to respond to food price volatility or adopt healthier diets. In regions where income growth is coupled with inflation or rising food prices, the purchasing power of vulnerable households is further eroded, forcing them to make trade-offs that often prioritize caloric sufficiency over nutritional quality [8]. Moreover, seasonal income fluctuations—common in agrarian economies—can exacerbate food insecurity during lean periods, contributing to cyclic patterns of hunger and malnutrition. Therefore, while economic growth has the potential to improve dietary quality, targeted policy interventions such as subsidies, social safety nets, and market integration are essential to ensure that these benefits are equitably shared across different income groups and regions.

2.2 Urbanization

Urbanization plays a critical role in transforming food consumption patterns, particularly in developing countries undergoing rapid demographic and infrastructural changes. As people migrate from rural areas to urban centers, they are increasingly exposed to new food environments that differ markedly from traditional dietary contexts. Urban living is generally associated with greater access to a wide variety of food options through supermarkets,

fast-food outlets, and informal street vendors, which often offer both healthy and unhealthy food choices [19]. This shift is closely linked to the concept of the "dietary transition," wherein traditional diets—high in complex carbohydrates, fiber, and plant-based foods—are gradually replaced by diets rich in refined sugars, fats, salt, and animal-source products [20]. Convenience and time constraints in urban life also contribute to the growing reliance on processed and ready-to-eat meals, which are typically energy-dense but nutrient-poor. These foods are aggressively marketed and often more affordable than fresh produce, especially for low-income urban residents, leading to a paradox where food abundance coexists with poor nutritional outcomes.

Moreover, urbanization is accompanied by lifestyle changes such as reduced physical activity, increased sedentary behavior, and fragmented meal patterns, all of which compound the risks of obesity and non-communicable diseases (NCDs) like hypertension, diabetes, and cardiovascular conditions [30]. While urban areas may offer improved infrastructure, healthcare, and food supply chains, they also introduce vulnerabilities—particularly for low-income households residing in informal settlements or slums—who may face food insecurity and limited access to nutritious foods despite geographical proximity to food markets [2] Table 1. These dynamics create a dual nutritional burden in urban settings, where undernutrition and micronutrient deficiencies persist alongside rising rates of overnutrition and related health complications. Addressing the dietary impacts of urbanization thus requires integrated urban planning, public health strategies, and food system reforms that promote affordable access to healthy, culturally appropriate, and sustainable diets for all socioeconomic groups.

Table 1: Worldwide Major staple food

Region	Major staple consumed	Remark
Sub-Saharan Africa	Maize, cassava, millet, sorghum	High reliance on starchy staples; low dietary diversity
South Asia	Rice, wheat	Rice dominant in east, wheat in west; pulses also important
Southeast Asia	Rice	Increasing meat and vegetable oil intake
Latin America	Maize, rice, beans	Wheat products also common; sugar and fats high
Middle East/North Africa	Wheat, rice	High bread consumption; growing demand for meat and oils

2.3 Cultural and Religious Influences Cultural beliefs and religious practices exert a profound influence on food consumption patterns in developing countries, often shaping not only what people eat but also when, how, and with whom food is consumed. These cultural norms and traditions are deeply embedded in social structures and have evolved over generations, forming a core aspect of individual and collective identities. In many societies, food is not merely a source of sustenance but a symbol of spirituality, social cohesion, and cultural expression. Religious beliefs, in particular, frequently dictate food taboos and fasting practices that have significant implications for dietary intake and nutrition. For instance, in large parts of India, Hinduism promotes vegetarianism, leading many individuals and communities to abstain from meat consumption entirely [11]. While such diets can be healthful when well-planned, they may lead to insufficient intake of high-quality protein, vitamin B12, iron, and zinc if dietary diversity is limited or plant-based substitutes are not adequately incorporated [24].

Similarly, Islamic dietary laws prohibit the consumption of pork and alcohol, and mandate the preparation of halal meat, which can influence both availability and accessibility of certain food products, particularly in multi-

religious or non-Muslim-majority regions. Fasting during Ramadan also significantly alters food consumption patterns, as meals are shifted to pre-dawn and post-sunset hours, affecting meal frequency and nutrient distribution across the day [1]. In Ethiopia, followers of the Orthodox Church observe numerous fasting days, during which animal-source foods are avoided, potentially impacting energy and nutrient intake, especially among children and pregnant women [10]. Cultural beliefs also extend to perceptions of health and food efficacy—for example, the classification of foods as “hot” or “cold” in traditional Chinese and Ayurvedic medicine influences food choices based on health status, season, or age group, regardless of scientific nutritional content.

These cultural and religious factors can support positive dietary behaviors- such as moderation, plant-based diets, and community-based eating- but they can also pose challenges for nutrition interventions if not properly understood or respected. Nutrition policies and programs must therefore be culturally sensitive, recognizing and integrating local food norms and values to effectively promote behavior change and improve dietary outcomes. Community engagement and culturally tailored education can bridge gaps between traditional practices and modern nutritional guidelines, ensuring that food policies are both respectful and effective

2.4 Policy and Trade

Government policies and international trade agreements play a pivotal role in shaping food consumption patterns by influencing the availability, affordability, and desirability of different food products. In developing countries, national agricultural and food policies- such as subsidies, tariffs, food price controls, and investment in food infrastructure—determine which foods are produced domestically, imported, or promoted for consumption. For instance, subsidies on staple crops like rice, wheat, or maize may enhance food security by stabilizing prices and ensuring calorie sufficiency, but they can also discourage diversification toward nutrient-rich crops such as pulses, fruits, and vegetables [17]. Similarly, limited government support for smallholder farmers and underinvestment in local food systems can create dependence on imported food, particularly in urban areas.

Trade liberalization has significantly altered the food landscape in many developing countries. By reducing tariffs and removing import restrictions, trade agreements have facilitated the influx of inexpensive, energy-dense, highly processed foods—often high in sugar, saturated fats, and salt—from multinational corporations based in high-income countries [7]. These products, widely marketed and easily accessible in urban and peri-urban areas, have contributed to the rapid “westernization” of diets. For example, countries in Latin America, Southeast Asia, and parts of Africa have seen a surge in the consumption of sugar-sweetened beverages, packaged snacks, and fast foods following trade reforms and foreign direct investment in food retail and advertising [26]. The aggressive marketing strategies of transnational food companies, often unregulated in developing markets, further reinforce these consumption patterns by targeting children and low-income populations with appealing but nutritionally poor food options [13].

3. Regional Trends in Food Consumption

3.1 Sub-Saharan Africa Traditional diets rich in grains and tubers are gradually being replaced by processed foods. Despite economic challenges, there is a growing demand for meat and dairy among the urban middle class (FAO, 2019), Table 2 &3.

3.2 **South and Southeast Asia** While rice remains a staple, there is a noticeable increase in the intake of animal products and fast food, particularly in urban areas [18]. Malnutrition coexists with rising obesity rates, indicating a double burden of disease.

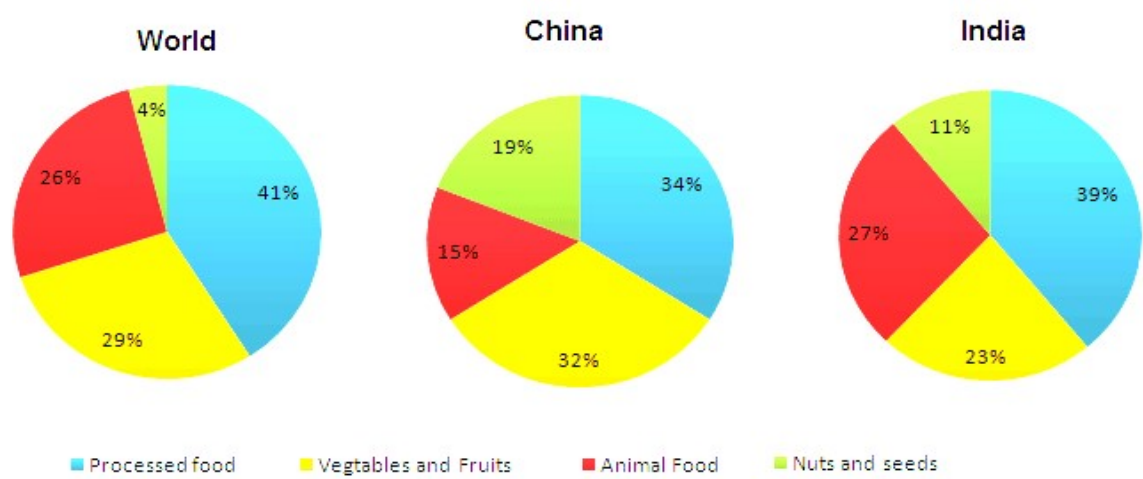


Fig 2: Food consumption of World, China and India

3.3 **Latin America** Dietary patterns have shifted significantly, with high consumption of sugar-sweetened beverages and ultra-processed foods [13]. These trends have contributed to escalating rates of non-communicable diseases.

3.4 **Middle East and North Africa (MENA)** MENA countries face dietary shifts from traditional foods to high-calorie diets with excessive sugar and fat, driven by high-income levels and urban lifestyles [12].

Table 1: Global and Regional per capita food consumption (Kcal per capita per day)

Region	1964–1966	1974–1976	1984–1986	1997–1999	2015	2030
World	2358	2435	2655	2803	2940	3050
Developing countries	2054	2152	2450	2681	2850	2980
Near East and North Africa	2290	2591	2953	3006	3090	3170
Sub-Saharan Africa	2058	2079	2057	2195	2360	2540
Latin America and Caribbean	2393	2546	2689	2824	2980	3140
East Asia	1957	2105	2559	2921	3060	3190

Source: World Health Organization

South Asia	2017	1986	2205	2403	2700	2900
Industrialized countries	2947	3065	3206	3380	3440	3500
Transition countries	3222	3385	3379	2906	3060	3180

Table 2: Global and Regional per capita consumption of livestock products

Region	Meat (kg per year)			Milk (kg per year)		
	1964 - 1966	1997 - 1999	2030	1964 - 1966	1997 - 1999	2030
World	24.2	36.4	45.3	73.9	78.1	89.5
Developing countries	10.2	25.5	36.7	28.0	44.6	65.8
Near East and North Africa	11.9	21.2	35.0	68.6	72.3	89.9
Sub-Saharan Africa	9.9	9.4	13.4	28.5	29.1	33.8
Latin America and the Caribbean	31.7	53.8	76.6	80.1	110.2	139.8
East Asia	8.7	37.7	58.5	3.6	10.0	17.8
South Asia	3.9	5.3	11.7	37.0	67.5	106.9
Industrialized countries	61.5	88.2	100.1	185.5	212.2	221.0
Transition countries	42.5	46.2	60.7	156.6	159.1	178.7

Source: World Health Organization

Impacts of Changing Food Consumption Patterns

Nutrition and Health The nutrition transition has led to improved calorie intake but also increased prevalence of obesity, diabetes, and cardiovascular diseases [21]. Poor dietary diversity remains a concern, especially for children and women.

Environmental Sustainability Shifts toward diets high in animal products raise concerns about environmental sustainability. Livestock production is resource-intensive and contributes significantly to greenhouse gas emissions [27].

Food Security While dietary diversification can enhance food security, dependency on global food markets and imported processed foods can make countries vulnerable to external shocks [5].

Effect on life style: Changing food consumption patterns and lifestyles have significant impacts on public health, the environment, and the global food system. The increasing preference for processed foods high in sugar, fats, and salt, combined with sedentary lifestyles, has led to a rise in non-communicable diseases such as obesity, diabetes, and cardiovascular disorders [31]. Additionally, shifts toward animal-based diets contribute to greater greenhouse gas emissions, land degradation, and water use, further exacerbating climate change. Urbanization and economic development are also driving changes in dietary habits, reducing the intake of traditional, nutrient-rich foods in favor of convenience foods, which can undermine food security and nutritional outcomes.

5. Global Drivers of Dietary Change

Globalization The integration of global markets has altered local food environments, increasing availability of packaged and fast foods.

Climate Change Climate variability affects crop yields and food prices, influencing availability and affordability of nutritious foods [29].

Technological Advancements Improvements in food processing and supply chains have both positive and negative effects, enhancing food availability while promoting consumption of low-nutrient foods [11].

Policy Implications and Recommendations

Governments and stakeholders must promote policies that encourage sustainable and nutritious diets. Key recommendations include:

- Implementing nutrition-sensitive agricultural policies
- Regulating food marketing and labeling
- Investing in public health education
- Supporting traditional and local food systems

5. Conclusion

Food consumption patterns in developing countries are rapidly changing due to urbanization, income growth, globalization, and shifting lifestyles. Traditional diets based on locally grown staples are giving way to more diverse eating habits, which can improve nutrition by reducing micronutrient deficiencies. However, this shift is also marked by rising consumption of processed and ultra-processed foods high in sugar, salt, and unhealthy fats, leading to increased rates of obesity, diabetes, and other noncommunicable diseases.

This dual burden of malnutrition—undernutrition alongside obesity—underscores the need for context-sensitive policies. Governments must promote healthy diets by regulating food marketing, improving labeling, supporting local food production, and raising public awareness. Transforming food systems to be more sustainable and equitable is essential to ensure access to nutritious food for all and prevent worsening health disparities.

References

1. Afshin, A., Sur, P. J., Fay, K. A., Cornaby, L., Ferrara, G., Salama, J. S., ... & Murray, C. J. L. (2019). *Health effects of dietary risks in 195 countries, 1990–2017: A systematic analysis for the Global Burden of Disease Study 2017*. **The Lancet**, 393(10184), 1958–1972. [https://doi.org/10.1016/S0140-6736\(19\)30041-8](https://doi.org/10.1016/S0140-6736(19)30041-8)
2. Crush, J., & Frayne, B. (2011). *Urban food insecurity and the new international food security agenda*. **Development Southern Africa**, 28(4), 527–544. <https://doi.org/10.1080/0376835X.2011.605571>
3. FAO. (2019). *The State of Food Security and Nutrition in the World 2019*. Rome: FAO. <https://www.fao.org/publications/sofi/2019>
4. FAO, IFAD, UNICEF, WFP, & WHO. (2022). *The State of Food Security and Nutrition in the World 2022: Repurposing food and agricultural policies to make healthy diets more affordable*. Rome: FAO. <https://doi.org/10.4060/cc0639en>
5. FAO. (2020). *The State of Agricultural Commodity Markets 2020*. Rome: FAO. <https://doi.org/10.4060/cb0665en>
6. FAO. (2021). *World Food and Agriculture – Statistical Yearbook 2021*. Rome: FAO. <https://doi.org/10.4060/cb4477en>
7. Hawkes, C. (2012). *Promoting healthy diets and tackling obesity and diet-related chronic diseases: What are the agricultural policy levers?* In *Agricultural policies for poverty reduction* (pp. 117–150). OECD Publishing. <https://doi.org/10.1787/9789264171534-6-en>
8. Headey, D., & Ecker, O. (2013). *Rethinking the measurement of food security: From first principles to best practice*. **Food Security**, 5, 327–343. <https://doi.org/10.1007/s12571-013-0253-0>
9. HLPE. (2017). *Nutrition and food systems: A report by the High Level Panel of Experts on Food Security and Nutrition of the Committee on World Food Security*. Rome: FAO. <http://www.fao.org/cfs/cfs-hlpe>
10. Hirvonen, K., Taffesse, A. S., & Worku, I. Y. (2016). *Seasonal differences in living conditions and the nutritional status of children in rural Ethiopia*. **The Journal of Development Studies**, 52(7), 1047–1063. <https://doi.org/10.1080/00220388.2015.1134771>
11. Kearney, J. (2010). *Food consumption trends and drivers*. **Philosophical Transactions of the Royal Society B: Biological Sciences**, 365(1554), 2793–2807. <https://doi.org/10.1098/rstb.2010.0149>
12. Meruin, D. (2003). *Urbanization and dietary changes in the Middle East and North Africa region: Implications for health and nutrition*. **Eastern Mediterranean Health Journal**, 9(6), 1122–1130.
13. Monteiro, C. A., Moubarac, J. C., Cannon, G., Ng, S. W., & Popkin, B. M. (2013). *Ultra-processed products are becoming dominant in the global food system*. **Obesity Reviews**, 14(S2), 21–28. <https://doi.org/10.1111/obr.12107>
14. Multaz, A. M. (2016). *Traditional diets and their role in contemporary health outcomes: A global review*. **Global Health Perspectives**, 4(2), 87–95.

15. Nugent, R. (2011). *Bringing agriculture to the table: How agriculture and food can play a role in preventing chronic disease*. Chicago Council on Global Affairs. <https://www.thechicagocouncil.org/research/report/bringing-agriculture-table>
16. Pingali, P. (2007). *Westernization of Asian diets and the transformation of food systems: Implications for research and policy*. **Food Policy**, 32(3), 281–298. <https://doi.org/10.1016/j.foodpol.2006.08.001>
17. Pingali, P. (2015). *Agricultural policy and nutrition outcomes—Getting beyond the preoccupation with staple grains*. **Food Security**, 7, 583–591. <https://doi.org/10.1007/s12571-015-0461-x>
18. Pingali, P., & Sunder, N. (2017). *Transitioning toward nutrition-sensitive food systems in developing countries*. **Annual Review of Resource Economics**, 9, 439–459. <https://doi.org/10.1146/annurev-resource-100516-053552>
19. Popkin, B. M. (1999). *Urbanization, lifestyle changes and the nutrition transition*. **World Development**, 27(11), 1905–1916. [https://doi.org/10.1016/S0305-750X\(99\)00094-7](https://doi.org/10.1016/S0305-750X(99)00094-7)
20. Popkin, B. M. (2012). *Nutritional patterns and transitions*. In *Nutrition Transition and Global Health* (pp. 1–14). Elsevier. <https://doi.org/10.1016/B978-0-12-385869-1.00001-0>
21. Popkin, B. M., Adair, L. S., & Ng, S. W. (2012). *Global nutrition transition and the pandemic of obesity in developing countries*. **Nutrition Reviews**, 70(1), 3–21. <https://doi.org/10.1111/j.1753-4887.2011.00456.x>
22. Popkin, B. M., & Reardon, T. (2017). *Obesity and the food system transformation in Latin America*. **Obesity Reviews**, 19(8), 1028–1064. <https://doi.org/10.1111/obr.12594>
23. Regmi, A., & Dyck, J. (2016). *Effects of income and urbanization on food consumption in developing countries*. **Food Consumption and Demand**, USDA ERS.
24. Ritchie, H., Reay, D. S., & Higgins, P. (2018). *The impact of global dietary guidelines on climate change*. **Global Environmental Change**, 49, 46–55. <https://doi.org/10.1016/j.gloenvcha.2018.02.005>
25. Ruel, M. T., Garrett, J., Hawkes, C., & Cohen, M. J. (2017). *The food policy arena: What role for research?*. In *Agriculture, Food Systems, and Nutrition: Meeting the Challenge* (pp. 9–24). IFPRI.
26. Stuckler, D., McKee, M., Ebrahim, S., & Basu, S. (2012). *Manufacturing epidemics: The role of global producers in increased consumption of unhealthy commodities including processed foods, alcohol, and tobacco*. **PLoS Medicine**, 9(6), e1001235. <https://doi.org/10.1371/journal.pmed.1001235>
27. Tilman, D., & Clark, M. (2014). *Global diets link environmental sustainability and human health*. **Nature**, 515(7528), 518–522. <https://doi.org/10.1038/nature13959>
28. Timmer, C. P. (2019). *The structural transformation of food systems: A 30-year retrospective*. **Development Economics**, 57(3), 431–448. <https://doi.org/10.1016/j.worlddev.2018.05.001>
29. Wheeler, T., & von Braun, J. (2013). *Climate change impacts on global food security*. **Science**, 341(6145), 508–513. <https://doi.org/10.1126/science.1239402>

30. WHO. (2014). *Global status report on noncommunicable diseases 2014*. World Health Organization. <https://www.who.int/publications/i/item/9789241564854>
31. WHO. (2021). *Obesity and overweight factsheet*. World Health Organization. <https://www.who.int/news-room/fact-sheets/detail/obesity-and-overweight>