Chapter 2

# CONSUMPTION OF FOODS HIGH IN FATS, SALT, AND SUGAR IN INDIA

## *Prevalence, Patterns, and Policy Imperatives*

Avinash Kishore and Suman Chakrabarti

**Avinash Kishore** is a senior research fellow and **Suman Chakrabarti** is an associate research fellow, International Food Policy Research Institute, New Delhi.

---

## KEY MESSAGES

- Calorie-dense foods high in saturated fats, salt, and sugar (HFSS) now account for nearly one-fifth of household food budgets in India, with US$62 billion spent on these foods in 2023/24. This surpasses spending on fruits, vegetables, pulses, eggs, fish, and meat in both rural and urban India.
- Consumption of HFSS foods is near universal: 96 percent of households consumed packaged ultra-processed foods, 90 percent purchased paid meals, and 70 percent consumed sugary drinks.
- Many widely consumed HFSS foods are home-cooked or bought from unregulated vendors, limiting the impact of regulations designed to reduce consumption, such as taxes or labeling.
- Effective policy requires integrated tools, including front-of-package labeling, nutrition education, and engagement with informal vendors to curb rising HFSS demand and mitigate health risks including obesity and diabetes.

Indian diets are changing rapidly. While more households are consuming nutrient-rich foods such as milk, fresh produce, and animal-source foods (Kapoor et al. 2024), the consumption of calorie-dense foods high in saturated fats, salt, and sugar (HFSS) and ultra-processed foods is growing at an alarming rate (Gupta and Kishore 2025), driven by lifestyle changes, rising incomes, and food industry marketing (Menon and Olney 2024). According to a recent report from the World Health Organization, sales of ultra-processed foods in India grew by 13.4 percent per year between 2011 and 2021, highlighting the urgency of understanding this transformation (WHO 2023).

Using the 80th round of the National Sample Survey's Household Consumption Expenditure Survey (NSS-HCES) (India, MoSPI 2024), this chapter describes recent patterns of HFSS consumption and expenditure, explores their socioeconomic drivers, and outlines how these findings can inform actionable pathways for healthier food systems. The chapter not only describes the magnitude of dietary change but also aims to serve as a catalyst for reform across fiscal, regulatory, and behavioral domains.

For the purposes of this analysis, HFSS foods comprise three main categories drawn from the NSS food groups: packaged ultra-processed foods, sugary beverages, and served processed foods. Additionally, ice cream and prepared sweets from the milk and milk products category are included in total HFSS expenditure calculations. These HFSS categories were constructed using item-level NSS consumption codes.

**Packaged ultra-processed foods** consist primarily of ultra-processed items — such as ice cream, biscuits, instant noodles, cakes, chocolates, salty snacks (*papadam*, *bhujia*, *chanachur*, chips, nachos, puffs), wafers, jams, jellies, ketchup, mayonnaise, and other packaged foods such as ready-to-cook *poha* — all typically purchased from retail outlets or through online orders. This category excludes breakfast cereals, baby food, pickles, bakery bread, and health supplements.

**Sugary beverages** include tea, coffee, carbonated drinks, cold beverages, fruit juices and shakes, sugarcane and date-palm juice, cocoa, drinking chocolate, and health drinks. Tea leaves and coffee powder are excluded from this category.

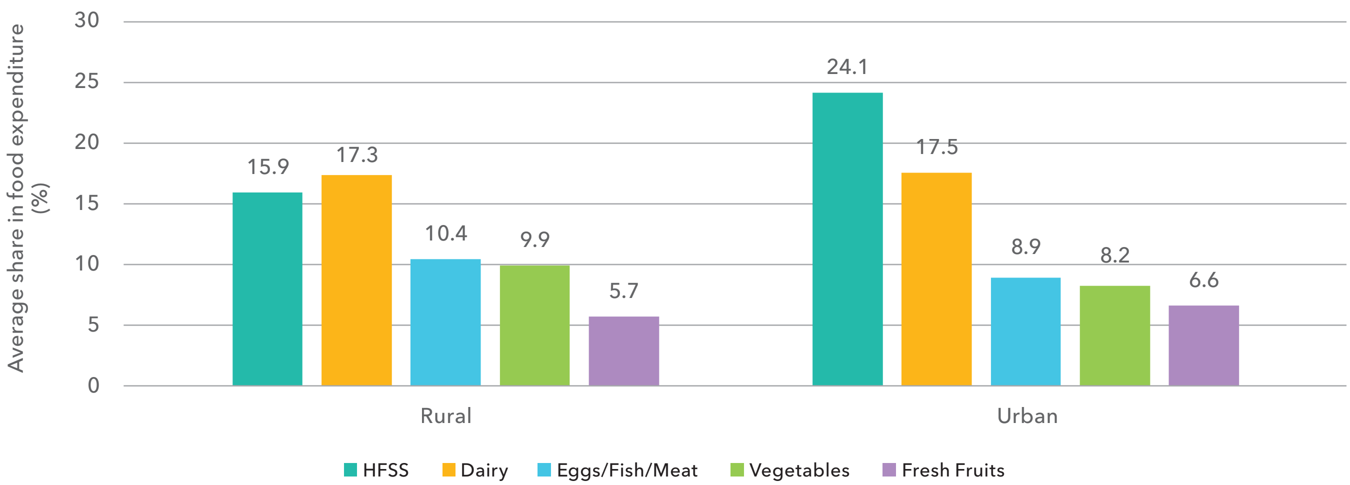
**Served processed foods** include purchased cooked meals, snacks, and other prepared foods obtained from vendors, restaurants, or caterers. These items are often higher in salt, sugar, and saturated fat than meals prepared at home using raw ingredients (Gupta and Kishore 2025). This category explicitly excludes cooked meals received free at workplaces, purchased at subsidized rates, received as assistance, or purchased at full price through institutional channels, since the HFSS content of complete meals cannot be reliably determined. Such exclusions may lead to an underestimation of total HFSS expenditure if subsidized or free meals are in fact high in fat, sugar, or salt.

## HFSS PENETRATION AND EXPENDITURE PATTERNS

Analysis of the NSS-HCES 2023/24 data shows the extraordinary penetration of HFSS foods across Indian households. Ninety-nine percent of Indian households reported purchasing some HFSS item during the reference week, including 96 percent consuming packaged ultra-processed foods, 70 percent consuming sugary drinks, and 90 percent consuming served processed foods. Consumption spans all income groups and geographies, driven by the converging forces of changing food environments, aggressive marketing, and consumer preferences for convenience and taste.

Households spent an estimated US$62 billion on HFSS foods in 2023/24, or nearly one-fifth (18.6 percent) of total food expenditure. This includes $14.6 billion on sugary beverages, $22.3 billion on served processed foods, and $25.2 billion on packaged ultra-processed foods.

**FIGURE 2.1** **Share of different food groups in total household food expenditure in rural and urban India, 2023/24**




**Source:** Authors' estimates using the NSS-HCES 2023/24 data (India, MoSPI, 2024).

**FIGURE 2.2** **Share of HFSS foods in total food budgets across quintiles of monthly per capita consumption expenditure**

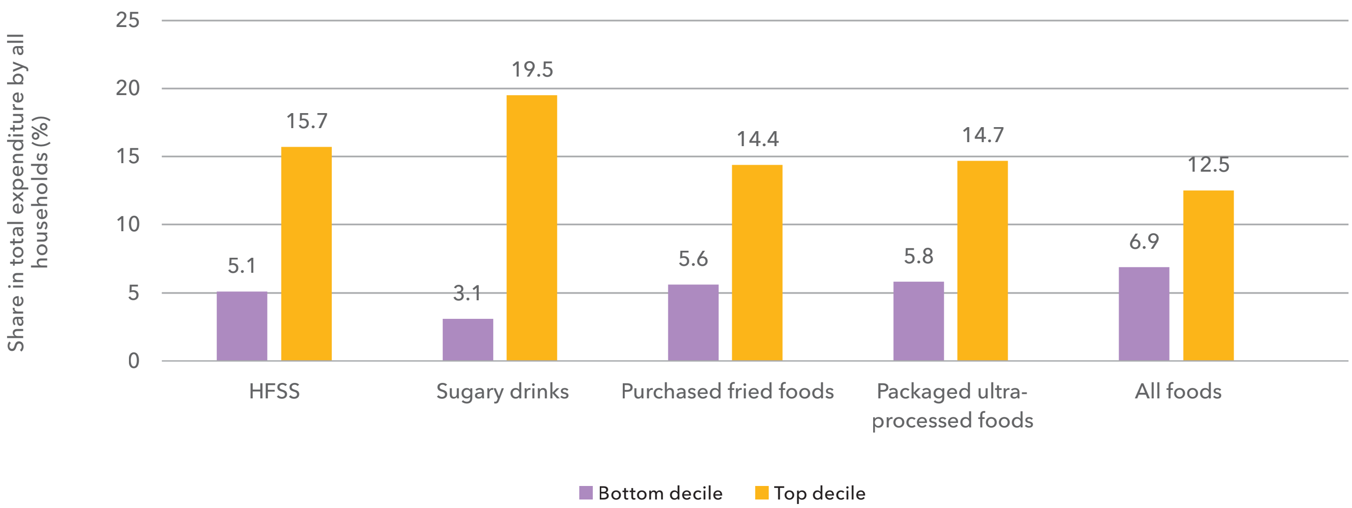

**Source:** Authors' estimates using the NSS-HCES 2023/24 data (India, MoSPI, 2024).

**Note:** MPCE = monthly per capita consumption expenditure.

HFSS foods accounted for the largest share of urban households' food budgets, surpassing spending on vegetables, fruits, pulses, and animal-source foods. Only spending on dairy products exceeded HFSS spending in rural areas (Figure 2.1). While these figures demonstrate the prominence of HFSS foods in household budgets, it remains unclear whether this high expenditure crowds out consumption of healthier foods such as fruits and vegetables.

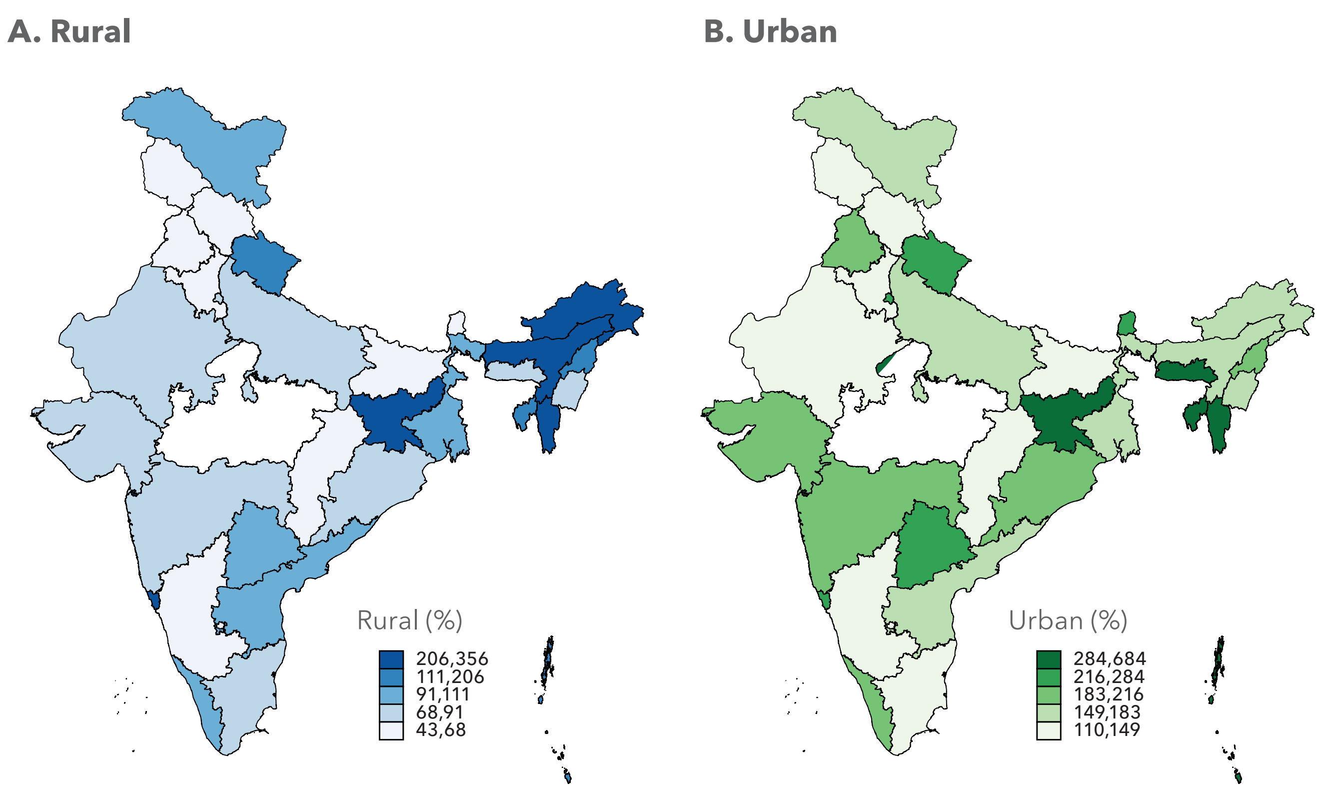
Wealthier households allocate a greater share of their food budgets to HFSS foods (Figure 2.2) and account for a disproportionately larger share of total household spending on these products in India (Figure 2.3). Households in the top decile of monthly per capita consumption expenditure (MPCE) spend

**FIGURE 2.3** Share of bottom and top deciles in aggregate expenditure on different types of HFSS foods in India




**Source:** Authors' estimates using the NSS-HCES 2023/24 data (India, MoSPI, 2024).

**FIGURE 2.4** State-level variation in per capita weekly expenditure (rupees) on HFSS foods, rural and urban




**Source:** Authors' estimates using the NSS-HCES 2023/24 data (India, MoSPI, 2024).

**TABLE 2.1 Weekly consumption patterns of HFSS foods compared to healthy options: Household penetration and per capita expenditure**

| Item | Mean [N = 261,953] | |
|---|---|---|
| | Households (%) who consumed the item the past 7 days | Average expenditure (rupees/person/week) |
| Vegetables (excluding potatoes and onions) | 96.9 | 46.7 |
| Fresh fruits | 92.2 | 35.4 |
| **Packaged ultra-processed foods** | 95.9 | 36.8 |
| Ice-cream | 22.0 | 4.1 |
| Biscuits | 85.0 | 10.7 |
| Noodles | 24.2 | 3.1 |
| Cake | 14.3 | 2.9 |
| Chocolates | 32.4 | 2.7 |
| Salty snacks (*papad, bhujiya, namkeen, mixture, etc.*) | 53.8 | 6.6 |
| Chips, nachos, puffs, wafers, etc. | 47.0 | 4.5 |
| Sauce, jam, jelly, mayo, etc. | 4.4 | 0.3 |
| Other packaged snacks | 8.4 | 1.9 |
| **Sugary drinks** | 69.7 | 23.3 |
| Tea | 46.9 | 9.2 |
| Coffee | 3.4 | 0.9 |
| Carbonated drinks | 7.0 | 1.1 |
| Other canned or bottled cold beverages | 12.3 | 2.4 |
| Fruit juice and shakes | 32.3 | 8.6 |
| Other hot beverages (cocoa, drinking chocolate, health drinks, etc.) | 7.6 | 3.1 |
| **Any purchased cooked food** | 90.5 | 63.6 |
| Purchased cooked meals | 15.5 | 29.4 |
| Cooked snacks purchased (*samosa, puri, parantha, momo, roll, chowmein, idli, dosa, vada, chops, pakoda, pav-bhaji, vada-pao, etc.*) | 87.1 | 31.1 |
| Other served processed foods (*chaat, golgappa, bhelpuri,* etc.) | 13.1 | 3.1 |

**Source:** Data from NSS-HCES 2023/24 data (India, MoSPI, 2024).

about three times more on HFSS foods compared with those in the bottom decile. The expenditure gap is largest (6.4 times) for sugary drinks, while it is 2.5 to 2.6 times higher for served processed foods and packaged ultra-processed foods. However, using the available data, we cannot determine whether this gap arises because richer families consume HFSS foods more frequently and in larger quantities or because they purchase higher quality (more expensive) foods than poorer households.

### Interstate and rural-urban differences

Figure 2.4 shows state-level variation in weekly per capita HFSS expenditure. The spatial patterns highlight two important points. First, higher spending is evident in richer states, hill regions, and the islands, while poorer states (Bihar, Madhya Pradesh, Rajasthan, and Uttar Pradesh) record relatively low expenditures. Second, although urban households spend more everywhere, rural expenditures are also nontrivial, especially in parts of eastern and northeastern India, pointing to the nationwide expansion of HFSS consumption beyond urban markets.

### Popular products driving HFSS consumption

Disaggregated data reveal which specific products domin ate household diets. Nearly every household consumes some form of packaged snack each week, with biscuits and fried salty snacks emerging as the most widely consumed items. Chips and chocolates also reach large segments of the population, while products like instant noodles, cakes, and jams remain relatively niche purchases.

Data on beverages show a similar pattern: about 70 percent of households reported consuming sugary drinks, with fruit juices and tea accounting for the bulk of spending. Only 7 percent of households reported consuming carbonated drinks in the past week. These results suggest that HFSS penetration extends well beyond common items like cola or chips — consumption of a diverse range of HFSS foods and drinks has become routine in household diets.

From a policy perspective, this broad dispersion indicates that interventions focused narrowly on single products, such as soda taxes, may have only limited effect on consumption. Moreover, some of the most widely consumed items — such as tea and salty snacks — are often prepared at home or purchased from unregulated kiosks and vendors. Taxing only packaged varieties may therefore have limited impact on reducing overall consumption of HFSS unless complemented by broader strategies addressing the full range of HFSS drivers. Moreover, with the 2025 Goods and Service Tax (GST) reforms reducing tax rates on many ultra-processed foods, fiscal disincentives have weakened, underscoring the need to rely more on other instruments such as clear front-of-package labeling, marketing restrictions, mandatory product reformulation standards, and consumer education to ensure that policies and public action address the full spectrum of products driving dietary change, rather than just isolated categories.

## UNDERSTANDING HFSS DEMAND: KEY DRIVERS

We examine the correlates of HFSS food expenditure using a regression model that controls for household demographics (household size; number of children and adolescents ages 5-19 years; age, gender, marital status, and education level of the household head), location (rural or urban), income, access to clean cooking fuel, and lifestyle factors including internet access, online food ordering, cooking fuel type, domestic help employment, and gym membership.

Figure 2.5 summarizes the results. The strongest positive associations with HFSS expenditure are with log of monthly per capita consumption expenditure (log MPCE), household size, urban residence, and access to digital infrastructure — particularly internet use and online food ordering. Households with domestic help and those using LPG for cooking spent less on HFSS foods, suggesting that convenience and time constraints play important roles in consumption decisions. In contrast, households with older or female heads tend to spend smaller shares on HFSS foods, while expenditure is higher in families with children or adolescents, reflecting generational differences in dietary preferences.

To examine how HFSS consumption responds to changes in household economic status, we estimate the percentage change (elasticity) in household spending on HFSS associated with a 1 percent increase in total household expenditure. Values above 1.0 indicate spending rises faster than income, while values below 1.0 suggest spending rises more slowly than income. For example, an elasticity of 0.88 means that when household income increases by 10 percent, HFSS spending increases by only 8.8 percent.

For India overall, HFSS elasticities follow an inverse-U pattern: rising from 0.88 at the 10th percentile to 0.95 at the median, before declining to 0.74 at the 95th percentile (Table 2.2). All values remain below 1.0, indicating that HFSS expenditure grows with income, but less than proportionally.

**FIGURE 2.5** **Income, urban living, and digital access drive HFSS spending: Correlates of household expenditure on HFSS foods**


**Source:** Authors' estimates from an ordinary least squares (OLS) regression using the NSS-HCES 2023/24 data (India, MoSPI, 2024).

**Note:** Each dot shows how much the log of HFSS expenditure changes with a one-unit increase in the corresponding variable (e.g., log MPCE, urban residence), while keeping other factors constant. A dot to the right of zero means higher HFSS spending; a dot to the left means lower spending. The model includes controls for age, sex, marital status, and years of education of the head of the household; if the household purchased any subsidized foods from the public distribution system; whether anyone in the family spent days away from home; and state fixed effects.

**TABLE 2.2** **Percentage change in expenditure on fresh fruits, vegetables, and foods high in fat salt, and sugar from 1% increase in total household expenditure per capita**

| Percentile of MPCE | Mean MPCE value (Rs) | HFSS | Vegetables | Fresh Fruits |
|---|---|---|---|---|
| **10th** | 2670 | 0.88 | 0.73 | 1.29 |
| **50th** | 4915 | 0.95 | 0.55 | 1.16 |
| **95th** | 13,630 | 0.74 | 0.60 | 0.78 |

**Source:** Authors' calculations using NSS-HCES 2023/24 data (India, MoSPI, 2024).

Compared to HFSS, expenditure elasticities for vegetables are lower throughout the distribution, while fresh fruits exhibit higher elasticities — exceeding 1.0 for most households except the wealthiest 5 percent. This suggests that vegetables function as basic necessities, with spending relatively insensitive to income changes.

These patterns have troubling implications for dietary quality as incomes rise. While households increase fruit consumption substantially with higher incomes, they show moderate increases in HFSS spending and minimal increases in vegetable consumption. This suggests that income growth alone may not automatically improve overall diet quality, as gains from increased fruit consumption may be offset by higher HFSS intake.

These results suggest distinct roles for HFSS foods within household budgets across the economic spectrum. Among low-income households, HFSS consumption may be driven more by affordability constraints than preferences, as families seek accessible sources of calories and preferred taste. Middle-income households show the strongest responsiveness to income changes, indicating that HFSS foods function as discretionary or aspirational purchases in this income group — though these households may also face greater time constraints due to increased labor force participation that make convenient processed foods more attractive. However, the NSS-HCES does not collect detailed employment or time-use information for all household members, so we cannot directly test this linkage. Wealthy households demonstrate lower responsiveness, suggesting that factors beyond income — such as health consciousness, dietary preferences, or access to alternative foods — increasingly influence their consumption decisions.

The complex relationship between income and consumption across different income groups underscores that effective interventions must consider the diverse motivations driving HFSS food choices — from calorie supplementation among the poor to aspirational consumption among the middle class to preference-driven choices among the wealthy.

## POLICY PRIORITIES: BEYOND REGULATION TO CONSUMER BEHAVIOR

The evidence presented in this chapter provides an example of how data collection and analysis can aid in identifying actionable entry points for multiple stakeholders trying to address the growing consumption of HFSS foods. Policymakers can use analysis of consumption patterns across income groups to devise progressive fiscal measures and target subsidies; industry can identify reformulation priorities and market risks; civil society organizations can focus advocacy efforts on the most vulnerable populations; and financial institutions can integrate nutrition considerations into lending decisions. This section outlines how these actors can translate findings into coordinated action.

The scale and breadth of HFSS consumption across the economic spectrum revealed by the data justifies stronger public intervention. Even the poorest households consume these products, driven not only by affordability but also by accessibility, marketing, and convenience. This creates a complex policy challenge that cannot be solved by governments and fiscal tools or labeling regulations alone, particularly in a country where nutrition policies still prioritize addressing undernutrition over the emerging double burden of malnutrition (undernutrition and micronutrient deficiencies coexisting with overweight and obesity) and diet-related noncommunicable diseases. An integrated strategy is needed that combines taxation, front-of-package warning labels, consumer education, and engagement with both formal and informal food enterprises, coordinated across policymakers, scientists, civil society, and industry to shift diets toward healthier patterns and mitigate rising health risks.

**Realigning fiscal and health goals.** Tax rates on foods and beverages are not currently aligned with nutritional content, and the September 2025 GST reforms have further weakened fiscal disincentives to consumption of HFSS products by lowering rates on many ultra-processed foods. Raising tax rates on HFSS foods could slow consumption growth and incentivize reformulation toward healthier alternatives. Several Asian countries, including the Philippines, Saudi Arabia, Sri Lanka, and Thailand have introduced taxes on sugary and sweetened beverages, resulting in lower average sugar content in taxed products (Lane 2022). However, such taxes may disproportionately affect poor households, who spend larger shares of their income on food and may struggle to replace cheap ultra-processed foods with healthier alternatives (Pineda et al. 2024). These regressive effects can be mitigated by pairing such taxes with subsidies on healthy foods targeted specifically at low-income groups (Valizadeh and Ng 2024).

**Labeling.** Clear, mandatory front-of-package labeling can enable consumers to identify unhealthy foods and push firms toward reformulation. Sri Lanka's experience with color-coded labels and media campaigns demonstrates this potential: sugar content in beverages dropped and carbonated drink sales declined. In India, however, the food industry has successfully resisted implementation of labeling requirements (Bansal 2021; Resnick and Nogales 2024). The Food Safety and Standards Authority of India's pending star-based labeling system should be strengthened through mandatory implementation. Coupled with voluntary industry pledges to reduce salt, sugar, and fat and consumer awareness campaigns conducted by government, civil society, and even the food industry, such labeling can become a catalyst for large-scale product reformulation. For industry, the data on rising HFSS consumption across demographic groups signal both reputational risks and reformulation opportunities — companies that act early can gain competitive advantage as consumer awareness grows.

**Regulatory challenge.** The evidence that roughly 90 percent of food businesses operate as small, informal enterprises outside tax and regulatory frameworks has direct implications for policy design and public action. This dominance limits the effectiveness of fiscal measures and risks shifting demand to unregulated vendors selling similar products. Moreover, HFSS consumption is not limited to purchased foods. NSS data show a steady increase in dietary fat even within home-cooked meals — from 43 to 60 grams in rural areas and from 53 to 70 grams in urban areas between 2009/10 and 2022/23 — making it clear that India's nutrition transition is unfolding in kitchens as well as in markets and on food delivery platforms. This reality demands policy approaches that reach beyond formal retail to influence cooking practices and food culture more broadly, including partnerships with media, culinary influencers, and community organizations that can shift social norms around food preparation.

**Behavioral nudges and consumer campaigns.** The evidence that HFSS consumption is driven by convenience, marketing exposure, and aspirational preferences, not just price, underscores the need for behavioral interventions alongside fiscal and regulatory measures. Corrective taxes and food labeling need to be combined with nutrition literacy and consumer education. Promising approaches include integrating nutrition education into school curriculums, using social media and influencers to promote healthy swaps for HFSS foods, and partnering with online delivery platforms to display nutrition warnings and promote healthier menu options. The Prime Minister's 2023 call to reduce unhealthy fat and oil consumption (PIB Delhi 2025) signals high-level political support for behavioral strategies that complement regulatory tools with efforts to shift cooking practices, cultural norms, and everyday food choices. Civil society organizations can amplify these messages through community-level campaigns, while digital platforms can use evidence on youth consumption patterns to design targeted interventions.

**Building multistakeholder coalitions.** Transforming India's HFSS trajectory requires action beyond government. Research institutions can develop the evidence base needed to create common ground for diverse actors to engage constructively. Civil society and consumer advocacy groups can use evidence to advocate for transparency, monitor industry compliance with reformulation commitments, and pressure policymakers for stronger regulations. Food and beverage companies can use data on product-level consumption patterns to identify reformulation priorities, adopt voluntary targets to reduce salt, sugar, and fat, and develop self-regulation codes that preempt stricter government mandates. Banks and investors can integrate evidence on rising diet-related health risks into environmental, social, and governance (ESG) performance frameworks, adjusting credit assessments for food manufacturers based on product portfolios and reformulation progress. Coordinated engagement across actors, linking fiscal policy with labeling, behavioral interventions with industry commitments, and consumer awareness with reformulation incentives, offers the best prospect for shifting dietary patterns at the scale and speed required to address India's emerging nutrition crisis.

*Acknowledgments*

We would like to thank the report editors and Derek Headey for constructive feedback and helpful suggestions, which have strengthened this chapter.

## REFERENCES

Bansal, S. 2021. "Inside the Five-Year Battle Food Companies Have Fought to Resist Stricter Labelling Norms." *Mint,* February 15. https://www.livemint.com/news/india/food-warning-labels-are-in-the-deep-freeze-11613403030011.html

Gupta, M., and A. Kishore. 2025. "Guilty Pleasures: Expenditure Elasticities of Ultra-Processed Foods and Paid Meals in India." IFPRI Discussion Paper 02330. IFPRI. https://hdl.handle.net/10568/173891

Kapoor, M., R. Ravi, S. Rajan, G. Dhamija, and N. Sareen. 2024. "Changes in India"s Food Consumption and Policy Implications: A Comprehensive Analysis of Household Consumption Expenditure Survey 2022-23 and 2011-12." EAC-PM Working Paper No. 30-2024. EAC-PM (Economic Advisory Council to the Prime Minister). https://eacpm.gov.in/wp-content/uploads/2024/08/Changes-in-Indias-Food-Consumption-and-Policy-Implications.pdf

Lane, C. 2022. "Meeting Health Challenges in Developing Asia with Corrective Taxes on Alcohol, Tobacco, and Unhealthy Foods." CGD Working Paper No. 613. Center for Global Development (CGD). https://www.cgdev.org/publication/meeting-health-challenges-developing-asia-corrective-taxes-alcohol-tobacco-and

Menon, P., and D.K. Olney. 2024. "Advancing Nutrition: Food System Policies and Actions for Healthy Diets." In *2024 Global Food Policy Report: Food Systems for Healthy Diets and Nutrition*, Chapter 1, 3–33. IFPRI. https://hdl.handle.net/10568/141760

India, MoSPI (Ministry of Statistics and Programme Implementation). 2024. *Household Consumption Expenditure Survey (HCES), 80th Round, 2023–24. Survey on Households Consumption Expenditure: 2022-23*. National Sample Survey Office (NSSO). https://microdata.gov.in/NADA/index.php/catalog/237/related-materials

PIB Delhi (Press Information Bureau). 2025. *Towards a Fit and Healthy India: Combating Obesity through Collective Action*. Ministry of Information & Broadcasting.

Pineda, E., M. Gressier, D. Li *et al.* 2024. "Review: Effectiveness and Policy Implications of Health Taxes on Foods High in Fat, Salt, and Sugar." *Food Policy* 123:102599. https://doi.org/10.1016/j.foodpol.2024.102599

Resnick, D., and M.-T. Nogales. 2024. "Improved Governance: Creating Supportive Environments for Diet and Nutrition Policies." In *2024 Global Food Policy Report: Food Systems for Healthy Diets and Nutrition,* Chapter 8, 72-81. IFPRI. https://hdl.handle.net/10568/141760

Valizadeh, P., and S.W. Ng. 2024. "Promoting Healthier Purchases: Ultraprocessed Food Taxes and Minimally Processed Foods Subsidies for the Low Income." *American Journal of Preventive Medicine* 67 (1):3–14. https://doi.org/10.1016/j.amepre.2024.02.019

WHO (World Health Organization). 2023. The Growth of Ultra-Processed Foods in India: An Analysis of Trends, Issues and Policy Recommendations. WHO. https://iris.who.int/handle/10665/372414