An Economic Analysis of Demand for Food Items and Food Policy in Karnataka and India

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***Abstract*—This paper provides an economic analysis of demand for food items and the role of food policy in shaping consumption in India, with a particular focus on the state of Karnataka, during the period 2020–2025. Using secondary data from government budgets, consumption surveys, and policy documents, we examine trends in food demand, shifts in expenditure patterns, and the impact of food policy interventions. Our analysis highlights changing consumption composition (e.g., increasing processed foods, millets), the role of inflation, and the influence of public distribution and subsidy policies. For Karnataka, we examine the state's food processing sector, policy initiatives, and local consumption dynamics. We find that rising incomes, urbanization, and dietary transitions are driving demand for diversified food items, while food policy (such as Essential Commodities Act reforms and PDS) remains critical in ensuring both affordability and food security. We conclude with policy recommendations to align demand-side shifts with sustainable and equitable food systems.**

***Index Terms*—Demand Food diet, garibi hatavo food processing, inflation, Urbanization, monthly per capita**

I. INTRODUCTION

India, with its vast and diverse population of over 1.4 billion, presents a complex landscape for analyzing food demand and food policy. Over the past few decades, the country has witnessed significant transformations in its agricultural sector, food consumption patterns, and the role of government intervention through food policy. The period from 2020 to 2025, in particular, has been marked by rapid urbanization, rising incomes, shifting dietary preferences, and the continued evolution of food policy to address emerging challenges in food security, nutrition, and sustainability. Karnataka, a key state in southern India, provides an important case study for examining these trends, as it not only contributes significantly to India's agricultural output but also faces unique challenges and opportunities related to food demand and policy interventions.

India's food demand during the 2020–2025 period reflects broad national trends, driven by a combination of economic growth, demographic changes, urbanization, and evolving consumer preferences. A key characteristic of Indian food demand is its diversification, as rising incomes and urban lifestyles fuel an increasing preference for processed foods, ready-to-eat meals, dairy, and protein-rich products, in contrast to the traditional reliance on cereals like rice and wheat.

The food inflation observed in the early 2020s has had a dual impact: while it has increased the cost of living for many, it has also spurred a demand for more affordable, value-added food products, especially in lower-income households. As of mid-2025, the consumer food price index (CFPI) had risen by 6.3% year-on-year (July 2025), largely driven by the increased cost of vegetables and cereals (Economic Times, 2025). However, milk and meat prices remained relatively stable, continuing to influence shifts in protein consumption patterns.

Additionally, the impact of COVID-19 (2020–2022) was significant in altering food demand trends. The pandemic led to reduced income and widespread unemployment, particularly in rural areas, which caused a temporary contraction in food demand, particularly for non-essential, higher-value food items. However, it also led to increased reliance on government welfare schemes such as the Pradhan Mantri Garib Kalyan Anna Yojana (PMGKAY), which provided additional food grain rations to over 800 million beneficiaries during the pandemic (Press Information Bureau, 2021). This underscored the

continued centrality of food subsidies and PDS in ensuring food security for vulnerable populations.

Karnataka, one of India's leading agricultural states, holds a distinctive position in the national food system. The state is known for its diverse agriculture producing everything from cereals and pulses to horticultural crops like tomatoes, chillies, and coconuts. As of the 2020 Census, the state's population stood at over 68 million, with urbanization on the rise, particularly in cities like Bengaluru. Karnataka's urban food demand mirrors national trends, with rising consumption of processed foods and dairy products. Urban centers like Bengaluru have become hubs for food retail and food service, contributing significantly to the state's economy.

Agriculture and food processing in Karnataka are intertwined, with the state being a major producer of millets, pulses, and groundnuts, and home to a vibrant food processing industry. According to the Ministry of Food Processing Industries (MoFPI), Karnataka was the second-largest state in terms of food processing capacity, behind only Maharashtra. The food processing sector alone contributes significantly to the state's GDP, with projections for growth driven by favorable policies and a growing middle class.

However, regional disparities in food demand persist. Rural Karnataka remains heavily dependent on traditional staples such as rice and wheat, while urban areas exhibit a greater variety of food consumption, including fast food, ready-to-eat products, and packaged foods. According to the Karnataka State Planning Board (2023), the per capita expenditure on food in urban areas of Karnataka has increased by 12% over the last five years, largely due to rising disposable incomes and changing lifestyles.

Karnataka has also been at the forefront of millet promotion in India, with initiatives under the National Food Security Mission (NFSM) to increase millet production, particularly in drought-prone areas. The state government has also adopted policies to incentivize millet processing. In 2024, the Karnataka Millets Mission was launched to boost both production and consumption of millets, in alignment with global calls for more nutritious, sustainable crops. Despite these efforts, consumption patterns reveal that rice and wheat still dominate the diets of most rural households, and millet consumption remains limited. The challenge lies in overcoming barriers such as lack of awareness and cooking habits that favor more traditional grains.

India's food policy has undergone several transformations to address the evolving demand for food. The Public Distribution System (PDS) remains the cornerstone of food policy, catering to the food insecure population through subsidized food grains, primarily rice, wheat, and sugar. As of 2024–2025, the Indian government allocated ₹2.11 lakh crore (~USD 28 billion) to the Food and Public Distribution Ministry, a significant portion of which is directed towards food subsidies and distribution (PRS Legislative Research, 2024).

In 2020, India introduced several reforms aimed at market liberalization in food commodities. The Essential Commodities (Amendment) Act sought to deregulate the stock limits on key food commodities like cereals, pulses, and edible oils, with the goal of attracting private investment, improving supply chains, and reducing price volatility. While these reforms have been successful in attracting investment in food processing and storage infrastructure, they have also sparked concerns over the potential for price speculation, which could disproportionately affect low-income consumers.

Karnataka has implemented several state-level initiatives that complement national food policy. For instance, the state government introduced the Karnataka Food Processing Policy 2025, which aims to position the state as a food processing hub. This policy includes incentives for value-added food products and support for the establishment of food processing clusters in key agricultural zones. Additionally, Karnataka has been at the forefront of promoting organic farming and millets, aligning with both national food security goals and the global push for nutritional sustainability.

Karnataka's state government also runs the Anna Bhagya Scheme, which provides subsidized rice and wheat to over 7 crore beneficiaries, a critical program that ensures food access for the economically vulnerable sections of society. With urbanization growing, however, there is an increasing focus on ensuring that food quality and nutritional diversity are also addressed. The state's food policy aims to bridge the gap between traditional food staples and the growing demand for processed, nutritious foods, particularly in urban areas like Bengaluru, Mysuru, and Hubli-Dharwad.

The period between 2020 and 2025 represents a critical phase for food demand and food policy in India, especially in states like Karnataka. As income levels rise, urbanization accelerates, and consumers shift toward more diverse and processed food products, the government's role in shaping food security, affordability, and sustainability remains central. Karnataka, with its strong agricultural base and food processing industry, exemplifies the potential for food policy to promote both economic growth and improved nutritional outcomes. However, the challenge remains to ensure that food systems are equitable, sustainable, and resilient to future shocks like inflation, climate change, and population growth.

II. OBJECTIVES

The study considers the following objectives are:

1. To analyze the trends in demand for different categories of food items in India between 2020 and 2025, including staples, processed foods, millets, and protein-rich foods.
2. To assess how food policy interventions (such as PDS, subsidies, regulatory reforms) have influenced consumption and affordability.
3. To examine the case of Karnataka: its food processing sector, demand patterns, and state-level policy measures.
4. To identify the economic drivers (income, prices, inflation, urbanization) behind changes in food demand.

III. METHODOLOGY

This study relies primarily on secondary data such as survey academic works, government reports, budget documents (e.g., Demand for Grants), and policy reports to contextualize the food demand and policy environment. This is analyze trends in consumption expenditure, food inflation, subsidy allocation, and food processing growth using published data from sources such as PRS Legislative Research, Ministry of Food Processing Industries (MoFPI), and other government databases. We examine major policy changes between 2020 and 2025, such as the Essential Commodities (Amendment) Act, budget allocations, and food security schemes, and analyze their economic implications. A focused case study on Karnataka is conducted by using state profile data (e.g., MoFPI state profile), state-level scheme documentation, and regional consumption trends where available. We draw on projected or recent data (e.g., future production forecasts, demand assessments) to interpret emerging trends in food demand and policy impacts.

Limitations: The study is constrained by availability of disaggregated and timely household-level consumption data for 2024–2025; thus, some inferences rely on recent budgetary and policy data or projections.

Between 2020 and 2025, India's food demand landscape is clearly shifting. Staples like rice, wheat, and coarse cereals, which once formed the bulk of diets, are gradually being displaced. Despite increasing grain production, per-capita cereal consumption has declined, especially in urban areas, signaling that dietary habits are diversifying away from traditional staples. This aligns with economic theory (e.g., Bennett's Law), where rising incomes lead to lower proportional spending on staple foods, and more on diverse, value-added categories.

Processed foods are leading the growth story. Rapid urbanization, time-constrained lifestyles, and growing disposable incomes are fueling demand for ready-to-eat (RTE) and ready-to-cook (RTC) products. Moreover, health-conscious consumers are gravitating toward fortified and upcycled processed products, boosting the processed-food sector further.

Millets, long sidelined in India's cereal basket, are making a comeback. Supported by government initiatives and increasing health awareness, their demand is rising. However, the market remains volatile: limited processing infrastructure, storage issues, and niche consumer base constrain mass adoption. Despite this, food companies are innovating with millet snacks and flour, tapping into the millennial health-food trend.

For protein-rich foods, there is a dual trend. Plant-based proteins such as pulses, soya, and legumes are increasingly common, driven by cost, sustainability, and awareness. On the other hand, animal-based protein also sees growth, but consumption remains unequal across socio-economic strata. The average per-capita daily protein intake has risen over recent years, indicating nutritional improvement, even if the quality and distribution of protein sources vary.

Food-policy interventions in India between 2020 and 2025 have had mixed but significant effects on consumption and affordability. The Public Distribution System (PDS), supplemented during the COVID-19 years by the Pradhan Mantri Garib Kalyan Anna Yojana (PMGKAY), provided subsidized grains to a very large population PMGKAY alone covered over 80 crore people. According to the Economic Survey 2025, food subsidies have doubled since 2019, easing purchasing power among low-income households. Moreover, the survey shows that in 2022–23, roughly 84% of households had ration cards, and the bottom 20 percent of consumers in rural areas got a disproportionately higher benefit (7% of their consumption versus just 2% for the top 20%) from the PDS.

However, policy inefficiencies limit the full impact. Leakages remain huge: about 28% of rice and wheat allocated under PDS do not reach intended beneficiaries, amounting to ~ 19.69 million tonnes of foodgrains lost and a economic cost of ~ ₹69,108 crore. Meanwhile, the PDS continues to focus largely on cereals, and does not sufficiently distribute nutrient-rich foods such as pulses, thereby failing to address deeper nutritional deficiencies.

To stabilize food prices, the government also used a Price Stabilization Fund (PSF) to roll out subsidized staples under schemes like Bharat Atta and Bharat Rice, spending nearly ₹2,000 crore. On the nutrition side, mass rice fortification through the PDS delivered around 406 lakh metric tonnes of fortified rice between 2019–20 and March 2024, helping improve micronutrient intake.

Despite these interventions, food deprivation persists: recent analysis suggests that even after PDS transfers, about 40% of rural households and 10% of urban households cannot afford two meals (“thalis”) a day. In sum, while government schemes have clearly cushioned food inflation and improved staple access for many poor households, targeting inefficiencies and a narrow focus on cereals limit their ability to fully enhance affordability and dietary quality.

Karnataka’s food processing sector is a rapidly growing and strategically important part of its economy: the state has about 54,905 agro-processing units, mainly in the MSME segment, employing over 3.24 lakh people. It boasts a strong raw-material base producing around 70% of India’s coffee and large shares of ragi, sunflower, gherkins, and corn. Despite this, only about 3 % of its agricultural produce is currently processed, a gap its Agribusiness & Food Processing Policy (2015) aims to close by targeting 25% processing by 2025. To support this, Karnataka has built over 150 cold storage units with a combined capacity of more than 300,000 MT, and offers generous incentives like 35% investment subsidy, 100% stamp duty reimbursement, and power tariff support to boost food-processing investments. However, a major challenge remains: despite its cold storage capacity, nearly 25–30% of fruits and vegetables are lost post-harvest, due to inadequate linkages in the value chain.

IV. ECONOMIC DRIVERS BEHIND FOOD DEMAND IN KARNATAKA

Karnataka has seen very strong per capita income growth: its Net State Domestic Product (NSDP) per capita (constant prices) reached ₹ 2,04,605 in 2024–25, a 93.6% increase over a decade from 2014–15. Higher incomes raise purchasing power, especially for non-staple and processed foods. As households become richer, they tend to shift their consumption from basic staples to more value-added and convenience foods. In Karnataka, this income growth is likely boosting demand for processed foods, ready-to-cook items, and higher-quality food products. Inflation, especially food inflation, strongly affects food demand. According to the 2024–25 Economic Survey, food inflation (measured by the Consumer Food Price Index, CFPI) rose from 7.5% in FY24 to 8.4% in FY25 (April–December). On the state level, the CPI for “Food & Beverages” in Karnataka (base year 2012 = 100) was about 205.6 in February 2025. Higher food inflation could adversely affect demand for perishable or fresh foods, especially among lower-income households; they may either reduce consumption or substitute more expensive foods with cheaper processed or shelf-stable alternatives.

Karnataka has a significant and growing urban population. According to census-based projections and studies, major urban centers like Bengaluru contribute disproportionately to the state’s urbanization. The urban–rural consumption gap in Karnataka has narrowed: as per recent MPCE (Monthly Per Capita Expenditure) data, the gap declined from 93.8% in 2011–12 to 65% in 2023–24. Tends to drive dietary change: urban consumers

typically spend more on processed, convenient, and non-staple foods. As more people move to or live in cities, demand for value-added food is likely to rise. This shift supports the growth of food-processing industries. Richer Consumers, More Processed Food: The strong per capita income growth in Karnataka suggests that rising affluence is a major driver of demand for processed and value-added foods.

Inflation Pressures: Food inflation, particularly in volatile categories like vegetables and pulses, could constrain demand for fresh food for budget-sensitive groups. But it may also push consumers toward processed or preserved alternatives, which can sometimes be cheaper per calorie or more storage-friendly. Urban-Diet Transition: As urbanization continues and the urban–rural consumption divide narrows, Karnataka is likely to see more pronounced dietary shifts with growing demand for convenience foods, packaged foods, and ready-to-eat items. Policy & Business Strategy: For policymakers, this means there's a strong case for supporting food-processing infrastructure (cold chain, storage, small-scale processors) to meet rising demand. For food businesses, investing in processed, packaged foods (especially for urban markets) could capture this growing demand.

V. CONCLUSION

India's food demand and policy landscape underwent a significant structural transformation, driven by changing income levels, urban growth, shifting dietary preferences, and evolving policy interventions. The gradual shift away from staple-heavy diets toward diversified, value-added, and protein-rich foods indicates clear evidence of Bennett's Law and the nutritional transition associated with rising living standards. While processed foods, millets, and protein consumption gained momentum, disparities between rural and urban consumption patterns continue to persist, shaped largely by affordability, lifestyle, and accessibility. Central and state food policies, particularly the PDS, PMGKAY, and price stabilization efforts, played an essential cushioning role during inflationary pressures and COVID-19 shocks; however, inefficiencies such as leakage, cereal-centric distribution, and limited nutrient diversification remain key challenges.

Karnataka stands out as a strong example of this evolving landscape, combining a robust agricultural base with rising urban consumption and a growing food-processing sector. Although rapid income growth and urbanization are generating demand for processed and nutritious foods, gaps in value-chain infrastructure, limited processing capacity, and post-harvest losses constrain full potential. Therefore, future food policy must emphasize nutrition-sensitive programs, decentralized processing, cold-chain expansion, and targeted consumer awareness. Strengthening these areas will ensure that India and Karnataka move toward a more inclusive, resilient, and nutrition-secure food system.

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