



**DEPARTMENT OF COMPUTER SCIENCE & ENGINEERING  
MIT SCHOOL OF COMPUTING, MIT ADT UNIVERSITY  
RAJBAUG, LONI KALBHOR, PUNE – 412201**

**REPORT**

**On**

**INDIA'S HUNGER ISSUE :- A DEEPER DIVE**

Submitted to

MIT ADT University, Pune

in partial fulfillment of the requirements for the Mini-Assignment of the course

Design Thinking

Submitted by

**PRANAV WAGH**

**ADT23SOCB0752**

**VAIDIK KUMAWAT**

**ADT23SOCB1253**

**AGAM KADAKIYA**

**ADT23SOCB0497**

**ARPIT NAINWAL**

**ADT23SOCB0189**

**SHLOK BAJAJ**

**ADT23SOCB1608**

Group No :- 06

Under the Guidance of

**PROF. TOSHIT HARSHWAL**

## **TABLE OF CONTENTS**

1. BRIEF.....	02
2. PURPOSE.....	05
3. RESEARCH.....	08
4. ACTION PLAN.....	19
5. CONCLUSION.....	23

## **1. INTRODUCTION – ( BRIEF )**

The Global Hunger Index (GHI), a collaborative effort by the International Food Policy Research Institute (IFPRI), Concern Worldwide, and Welthungerhilfe, serves as a vital tool to assess and track hunger worldwide. In the 2023 report, India ranks 111th out of 125 countries, indicating a severity level of 'serious' hunger. Despite a slight improvement in its score to 28.7, challenges persist, encompassing undernourishment, child stunting, wasting, and mortality.

### **India's Position in GHI :-**

India's GHI score, derived from indicators like undernourishment (14.3%), child stunting (34.7%), wasting (17.5%), and child mortality (36 per 1,000 live births), reflects persistent challenges. Regional disparities further complicate the issue, particularly in eastern and central India.

### **Root Causes for Contributing to Hunger in India :-**

Poverty, unemployment, lack of education, overpopulation, inequality, rural-urban divide, crop failure, water scarcity, climate change, government policies, social discrimination, market monopolies, corruption, natural disasters, water pollution, food wastage, are identified as primary contributors to hunger in India.

**Government Initiatives :-**

While the Indian government has implemented initiatives like the Integrated Child Development Services (ICDS), the National Food Security Act (NFSA), and the Pradhan Mantri Matru Vandana Yojana (PMMVY), challenges persist in addressing hunger comprehensively.

**Where India Lacks in Overcoming Hunger :-**

Critical areas for improvement include food production and distribution, nutritional deficiencies, social and economic factors, and policy and governance.

**Data Research :-**

Corruption significantly impacts food security, leading to resource diversion, inefficient program implementation, market distortions, and reduced agricultural productivity.

**Restrictions to Overcome :-**

Policy fragmentation, targeting challenges, corruption, poverty, income inequality, climate change, lack of education, storage losses, market distortions, and micronutrient deficiencies pose significant barriers to progress.

**Efforts by Private Organizations :-**

Efforts by large corporates like ITC, Godrej Consumer Goods, and Reliance Foundation, along with NGOs like Akshaya Patra and Action Against Hunger, play a crucial role in supplementing government initiatives.

**Connection Between Access to a Balanced Diet and Hunger Issue :-**

Dietary deficiencies, highlighted by the National Family Health Survey-5 (NFHS-5) and the Global Nutrition Report 2023, underscore the importance of addressing access to a balanced diet in combating hunger.

In essence, addressing India's hunger challenge demands a holistic approach, encompassing governmental, private, and societal efforts, while tackling systemic issues like corruption, poverty, and nutritional deficiencies.

## 2. PURPOSE

This report aims to provide a comprehensive analysis of the hunger issue in India, delving beyond surface statistics. It will explore the root causes that contribute to food insecurity, examining factors like poverty, inadequate food distribution systems, and nutritional deficiencies.

### **Specifically, this report will :-**

**Highlight the current state of hunger in India :-** This includes presenting data on the prevalence of undernourishment, calorie deficits, and child stunting.

**Examine the multifaceted causes of hunger :-** We will explore factors like rural poverty, unequal land distribution, lack of access to clean water and sanitation, climate change impacting agricultural yields, and food wastage.

**Analyze the limitations of existing programs :-** The report will evaluate current government initiatives and NGO efforts to address hunger, identifying areas for improvement.

**Investigate the impact of hunger on individuals and society :-** This section will explore the health consequences of malnutrition, reduced educational attainment, and the overall economic burden of hunger.

**Identify potential solutions and future directions :-** We will explore innovative approaches to tackle hunger, including promoting sustainable agriculture, improving food storage and distribution networks, and empowering women in food production.

This report strives to be more than just a snapshot of the problem. By delving deeper into the underlying causes and limitations, it seeks to offer valuable insights for policymakers, NGOs, and other stakeholders working towards a hunger-free India. This deeper understanding will be crucial in crafting effective solutions and creating a more equitable food system.

## **Methodology :- Unveiling the Layers of Hunger**

This report utilizes a multi-pronged approach to shed light on the complexities of hunger in India.

**Data Analysis :-** We will rely on credible sources like government reports (NSSO data), surveys conducted by international organizations (FAO, World Bank), and research papers published by academic institutions. This quantitative data will establish the prevalence and severity of hunger.

**Literature Review :-** In-depth analysis of scholarly articles, NGO reports, and policy documents will provide insights into the root causes of hunger, existing interventions, and their limitations.

**Case Studies :-** Examining specific regions or communities disproportionately affected by hunger can offer a nuanced understanding of the issue on the ground. This qualitative approach will highlight the human stories behind the statistics.

**Expert Interviews :-** Consulting with researchers, policymakers, and practitioners working in the field of food security will provide valuable firsthand perspectives and potential solutions.

By combining these methodologies, this report strives to paint a holistic picture of hunger in India, encompassing national trends, regional variations, and the lived experiences of those affected.



### 3. RESEARCH

#### **Introduction :-**

Hunger remains a significant challenge in India, despite being the world's largest producer of pulses, milk, and one of the biggest producers of wheat and rice. This disparity highlights the complex issue of food security, where access and distribution play a crucial role. This report analyzes hunger across Indian states, providing data and insights to understand the problem's regional variations.

#### **Data Sources :-**

The primary data sources for this report include:

**Global Hunger Index (GHI) :-** Published by the Global Hunger Alliance, the GHI measures hunger severity using indicators like undernourishment, child wasting, child stunting, and child mortality.

**National Family Health Survey (NFHS) :-** Conducted by the Ministry of Health and Family Welfare, NFHS provides data on child health, nutrition, and other indicators relevant to hunger.

**State Hunger Index (SHI) :-** Developed by researchers in 2008, SHI (though not published since) provides a hunger score for each state based on similar parameters as the GHI.

## National Overview :-

India's GHI score in 2023 remains in the "serious" hunger category. While there has been progress in reducing hunger, significant disparities exist across states.

## Hunger by State :-

Here's a breakdown of hunger levels by state categorization based on the GHI and SHI (for reference) :-

- **Low Hunger (GHI score < 10) :-** No Indian state falls under this category.
- **Moderate Hunger (GHI score 10-19.9) :-** A few states, like Kerala (GHI score estimated around 15), might fall into this category.
- **Serious Hunger (GHI score 20-34.9) :-** This category includes several states like Punjab, Tamil Nadu, and Andhra Pradesh.
- **Alarming Hunger (GHI score 35-49.9) :-** States with the highest hunger burden, like Bihar, Jharkhand, and Chhattisgarh, fall into this category.

## State-Specific Data :-

Due to the limitations of a single index, it's crucial to analyze additional data points for a comprehensive picture. Here's a glimpse into some key indicators for different state categories:

### **States with Alarming Hunger :-**

- **Bihar, Jharkhand, Chhattisgarh :-** These states consistently rank high in hunger indices. Here, factors like poverty, lack of infrastructure, and tribal issues contribute to food insecurity. High child stunting and wasting rates are a concern.

### **States with Serious Hunger :-**

- **Uttar Pradesh, Madhya Pradesh, Assam, Odisha :-** These states share some similarities with the "alarming" category but might show slightly better scores on some GHI indicators. Here too, poverty and inadequate social safety nets are significant issues.

### **States with Moderate Hunger :-**

- **Kerala, Tamil Nadu, Andhra Pradesh :-** These states have made significant progress in reducing hunger. Investments in education, healthcare, and social programs have played a crucial role. However, pockets of vulnerability might still exist.

**Comprehensive National Nutrition Survey (2019-21) :-** This survey provides detailed data on dietary intake across various population groups, including:

- Average per capita daily intake of essential nutrients: Shows significant gaps compared to recommended levels for several micronutrients, especially among vulnerable groups.
- Consumption patterns by food groups: Highlights limited intake of fruits, vegetables, and animal-source foods.

**Stunting and Wasting:****NFHS-5:**

- Stunting (low height for age): 22.3% of children under 5 years old.
- Wasting (low weight for height): 6.8% of children under 5 years old.
- Both stunting and wasting are strong indicators of chronic and acute malnutrition, respectively.

**Data Considerations :-**

It's important to acknowledge limitations in data collection and analysis. NFHS data collection cycles might not perfectly align with GHI reports. Additionally, state-specific data within a large state can vary significantly.

**Government Initiatives :-**

The Indian government has implemented several initiatives and programs to address hunger and malnutrition, recognizing the importance of ensuring food security and improving nutritional outcomes for its population. Some notable programs include:-

**Integrated Child Development Services (ICDS):**

- ICDS is one of the world's largest and oldest programs aimed at improving the health and nutrition of children under the age of six and pregnant and lactating mothers.
- It provides a package of services, including supplementary nutrition, immunization, health check-ups, and referral services, to enhance the overall development of children.

**National Food Security Act (NFSA):**

- Enacted in 2013, the NFSA aims to provide subsidized food grains to two-thirds of the Indian population.
- It guarantees 5 kilograms of food grains per person per month at highly subsidized prices under the Targeted Public Distribution System (TPDS).

**Pradhan Mantri Matru Vandana Yojana (PMMVY):**

- This maternity benefit program provides financial assistance to pregnant women and lactating mothers for their first living child.
- It aims to improve maternal health and nutrition by promoting proper care and nutrition during pregnancy and lactation.

**Midday Meal Scheme:**

- Launched in 1995, the Midday Meal Scheme aims to improve the nutritional status of children in government schools.
- It provides free, cooked meals to school children, ensuring that they receive adequate nutrition and attend school regularly.

**National Nutrition Mission (Poshan Abhiyaan):**

- Launched in 2018, Poshan Abhiyaan is a multi-ministerial convergence mission with the goal of addressing malnutrition through a life-cycle approach.
- It focuses on the first 1,000 days of a child's life, adolescents, pregnant women, and lactating mothers, emphasizing the importance of a holistic approach to nutrition.

**Pradhan Mantri Garib Kalyan Anna Yojana (PMGKAY):**

- Introduced as a response to the COVID-19 pandemic, PMGKAY aims to provide additional free food grains to beneficiaries of the NFSA.
- It ensures that vulnerable populations have access to essential food items during times of economic distress.

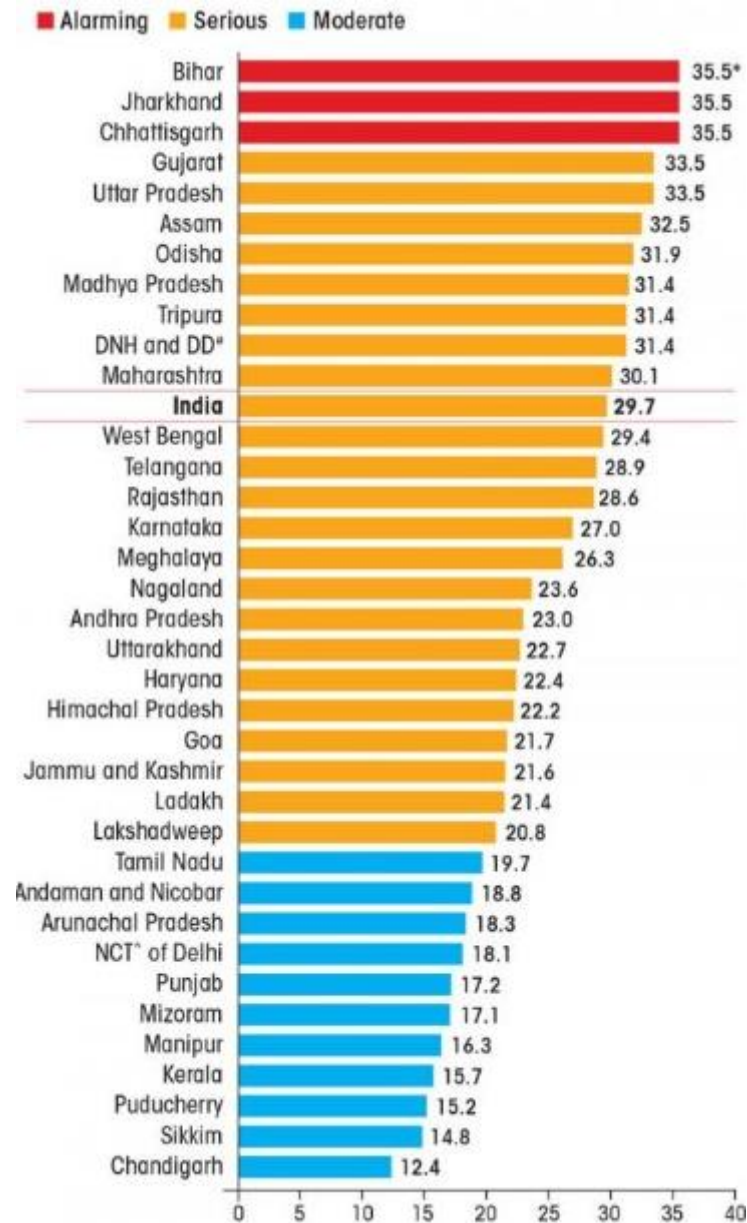
**National Health Mission (NHM):**

- NHM, launched in 2005, focuses on improving healthcare delivery and health outcomes, including nutrition, maternal health, and child health.
- It supports various programs such as the Reproductive, Maternal, Newborn, Child and Adolescent Health (RMNCH+A) and the Janani Suraksha Yojana (JSY).

These initiatives collectively reflect the Indian government's commitment to addressing hunger and malnutrition by adopting a comprehensive and integrated approach that spans various age groups and life stages. Continuous evaluation and adaptation of these programs are essential to achieving sustained improvements in nutritional outcomes across the country.

### **Summary :-**

Hunger in India is a complex issue with regional variations. Analyzing data by state helps identify areas requiring targeted interventions. Focusing on improving child nutrition, strengthening PDS (Public Distribution System), and promoting agricultural practices that enhance food security are crucial steps. Addressing the root causes of poverty and inequality is fundamental to achieving long-term solutions.





**Table 1: Nutrition Status of Indian Population, by State/UT, 2015-16**

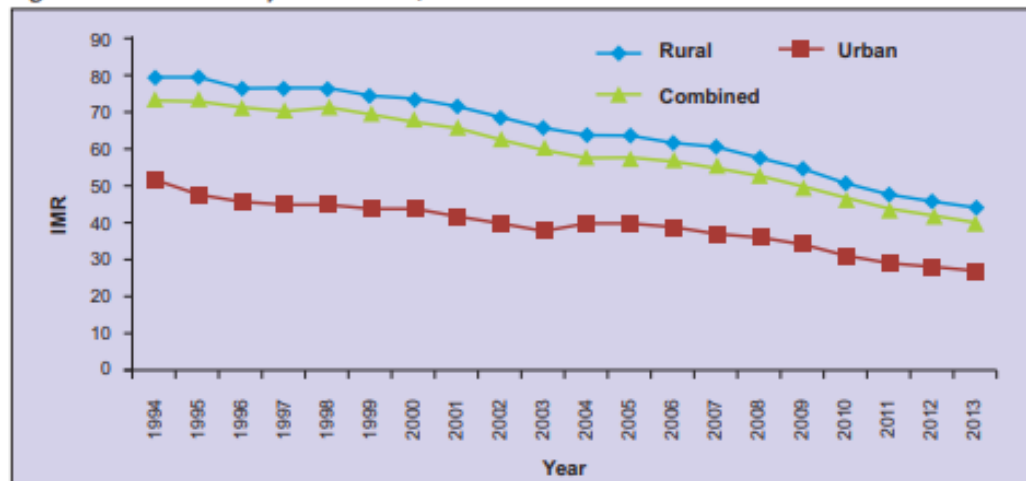
State / Union Territory	Children (under 5 years)				Adults (15 – 49 years)					
	Stunted	Wasted	Underweight	Anaemic (6-59 months)	BMI below normal		Overweight or Obese		Anaemic	
					Women	Men	Women	Men	Women	Men
A & N Islands-UT	23.3	18.9	21.6	49.0	13.1	8.7	31.8	38.2	65.7	30.8
Andhra Pradesh	31.4	17.2	31.9	58.6	17.6	14.8	33.2	33.5	60.0	26.9
Arunachal Pra.	29.4	17.3	19.5	50.7	8.5	8.3	18.8	20.6	40.3	16.9
Assam	36.4	17.0	29.8	35.7	25.7	20.7	13.2	12.9	46.0	25.4
Bihar	48.3	20.8	43.9	63.5	30.4	25.4	11.7	12.6	60.3	32.2
Chandigarh-UT	28.7	10.9	24.5	73.1	13.3	21.7	41.5	32.0	75.9	19.3
Chhattisgarh	37.6	23.1	37.7	41.6	26.7	24.1	11.9	10.2	47.0	22.2
Daman & Diu-UT	23.4	24.1	26.7	73.8	12.9	12.0	31.6	30.7	58.9	23.6
D & N Haveli-UT	41.7	27.6	38.9	84.6	28.5	19.7	19.2	22.9	79.5	30.7
Delhi NCT-UT	32.3	17.1	27.0	62.6	12.8	17.7	34.9	24.6	52.5	21.6
Goa	20.1	21.9	23.8	48.3	14.7	10.8	33.5	32.6	31.3	11.0
Gujarat	38.5	26.4	39.3	62.6	27.2	24.7	23.7	19.7	54.9	21.7
Haryana	34.0	21.2	29.4	71.7	15.8	11.3	21.0	20.0	62.7	20.9
Himachal Pra.	26.3	13.7	21.2	53.7	16.2	18.0	28.6	22.0	53.4	20.1
Jammu & Kashm.	27.4	12.1	16.6	43.3	12.1	11.5	29.1	20.5	40.3	15.1
Jharkhand	45.3	29.0	47.8	69.9	31.5	23.8	10.3	11.1	65.2	29.9
Karnataka	36.2	26.1	35.2	60.9	20.7	16.5	23.3	22.1	44.8	18.2
Kerala	19.7	15.7	16.1	35.6	9.7	8.5	32.4	28.5	34.2	11.3
Lakshadweep-UT	27.0	13.8	23.4	51.9	12.5	7.4	41.4	24.6	45.7	10.7
Madhya Pradesh	42.0	25.8	42.8	68.9	28.3	28.4	13.6	10.9	52.5	25.5
Maharashtra	34.4	25.6	36.0	53.8	23.5	19.1	23.4	23.8	48.0	17.6
Manipur	28.9	6.8	13.8	23.9	8.8	11.1	26.0	19.8	26.4	9.6
Meghalaya	43.8	15.3	29.0	48.0	12.1	11.6	12.2	10.1	56.2	32.4
Mizoram	28.0	6.1	11.9	17.7	8.3	7.2	21.1	21.0	22.5	9.6
Nagaland	28.6	11.2	16.8	21.6	12.2	11.5	16.2	14.0	23.9	10.1
Odisha	34.1	20.4	34.4	44.6	26.4	19.5	16.5	17.2	51.0	28.4
Punjab	25.7	15.6	21.6	56.6	11.7	10.9	31.3	27.8	53.5	25.9
Puducherry-UT	23.7	23.6	22.0	44.9	11.3	10.2	36.7	37.1	52.4	15.9
Rajasthan	39.1	23.0	36.7	60.3	27.0	22.7	14.1	13.2	46.8	17.2
Sikkim	29.6	14.2	14.2	55.1	6.4	2.4	26.7	34.8	34.9	15.7
Tamil Nadu	27.1	19.7	23.8	50.7	14.6	12.4	30.9	28.2	55.1	20.4
Telangana	28.1	18.0	28.5	60.7	23.1	21.4	28.1	24.2	56.7	15.4
Tripura	24.3	16.8	24.1	48.3	18.9	15.7	16.0	15.9	54.5	24.7
Uttarakhand	33.5	19.5	26.6	59.8	18.4	16.1	20.4	17.7	45.2	15.5
Uttar Pradesh	48.3	17.9	39.5	63.2	25.3	25.9	16.5	12.5	52.4	23.7
West Bengal	32.5	20.3	31.5	54.2	21.3	19.9	19.9	14.2	62.5	30.3
India	38.4	21.0	35.7	58.4	22.9	20.2	20.7	18.6	53.0	22.7

Source: Ministry of Health and Family Welfare, NFHS-4, 2015-16. All-India and State/UT Fact Sheets. Mumbai: IIPS.

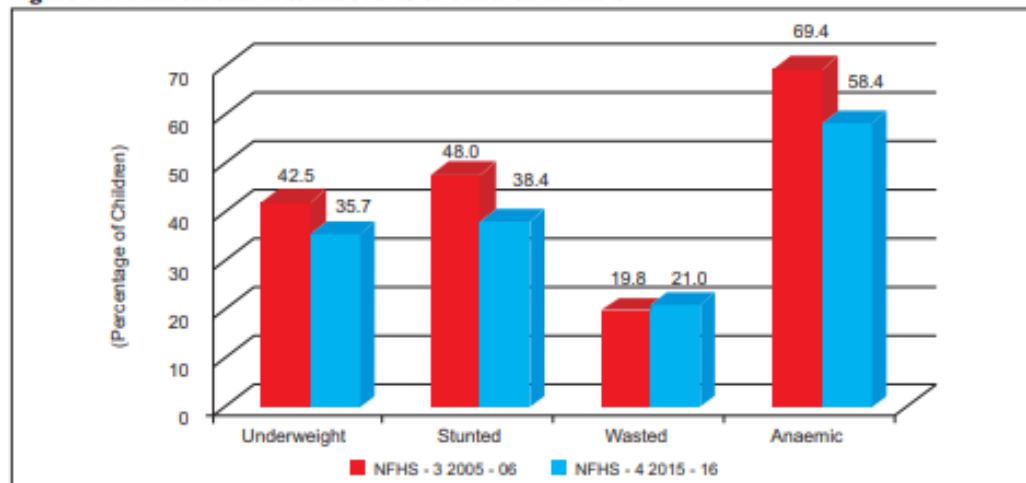
Notes: (i) All figures in percent; (ii) shades denote the following:

States/UTs recording highest percentages.

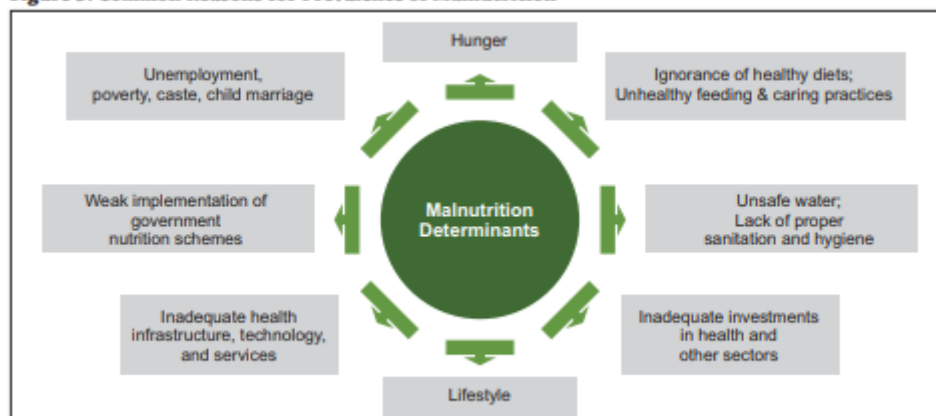
States recording lowest percentages.

**Figure 1: Infant Mortality Rate in India, 1994-2013**

Source: CBHI, National Health Profile, 2015, p. 19; Data source: Registrar General of India, SRS Bulletin, September 2013; Note: IMR in per 1,000 live births.

**Figure 2: Nutrition and Anaemia Status of Children in India**

Source: NFHS - 4, 2015-16; Note: Data on anaemia pertain to children aged 6-59 months.

**Figure 3: Common Reasons for Prevalence of Malnutrition**

Source: Author's own.

### ❖ A SNAPSHOT :-

Nutrition data generated from the fourth National Family Health Survey (NFHS-4) conducted in 2015-16 are now available for all Indian States/Union Territories. The following inferences may be drawn from the data on nutritional status presented in Table 1:

- The nutritional status of children under five years is critical in the States/UTs of Bihar, Jharkhand, Uttar Pradesh, and Dadra and Nagar Haveli; Kerala and Mizoram are faring better.
- BMI below normal is most evident in Bihar, Jharkhand, Madhya Pradesh, and Uttar Pradesh; status is better in Sikkim.
- The incidence of overweight or obesity is highest in Chandigarh, Lakshadweep, Andaman and Nicobar Islands, and Puducherry; the situation is better in Bihar and Meghalaya.
- Anaemia is most prevalent in Chandigarh, Dadra & Nagar Haveli, Bihar and Meghalaya; it is lowest in Manipur and Mizoram.

## 4. ACTION PLAN

In an effort to create a more sustainable and socially responsible food industry, this policy proposes a framework for food donation by catering businesses in India. This initiative aims to tackle the dual issues of food waste and food insecurity, fostering a win-win situation for businesses, the government, and most importantly, the underprivileged communities of India.

### **"Sustainable Food Security: Developing Comprehensive Policy Solutions to Combat Hunger"**

This policy aims to reduce food waste and support food security in India by encouraging catering businesses to donate surplus food.



## **Policy Components :-**

### **1. Mandatory Donation :-**

- All catering businesses operating in India must sign an agreement outlining their commitment to donate a portion of prepared food for orders exceeding a specific size (e.g., 50 plates or more).

- The donation amount will be tiered based on order size:

- Orders between 50-100 plates: Donate 5% of prepared food
- Orders between 101-200 plates: Donate 7% of prepared food
- Orders exceeding 200 plates: Donate 10% of prepared food

### **2. Fines for Non-Compliance :-**

- Catering businesses that fail to comply with the mandatory donation requirement will be subject to fines based on the order size:

- First offense: 2% of the total order value
- Second offense: 5% of the total order value
- Third offense and subsequent: 10% of the total order value (along with a potential temporary business license suspension)

### 3. Tax Incentives for Donation :-

- To incentivize participation, catering businesses that comply with the donation requirement will be eligible for corporate tax deductions:

- 150% tax deduction on the cost of donated food

### 4. Public Recognition :-

- Catering businesses that consistently exceed donation expectations will receive public recognition through:

- Government website listing of participating businesses
- Awards or certificates acknowledging their commitment to social responsibility

### Benefits :-

- **Reduced Food Waste :-** This policy will divert surplus food from landfills, promoting a more sustainable food system.

- **Food Security :-** Donated food will be directed to shelters, soup kitchens, and other organizations supporting food-insecure populations.

- **Win-Win Situation :-** Catering businesses receive tax benefits and public recognition, while the government facilitates food security and reduces waste management costs.

**Implementation :-**

- Developing a clear registration and reporting system for catering businesses.
- Partner with food banks and NGOs to facilitate food collection and distribution.
- Conduct awareness campaigns to educate both businesses and the public about the policy's benefits.

By implementing this policy, India can make significant strides in tackling food waste and supporting those in need.

## 5. CONCLUSION

### A Multi-Pronged Approach to Eradicate Hunger

The data presented in this report paints a clear picture: hunger remains a significant challenge across various Indian states. While some states have made commendable progress, others struggle with alarming levels of food insecurity. A successful strategy to eradicate hunger requires a multi-pronged approach at both national and state levels.

#### Policy Recommendations :-

**Firstly**, the proposed "Food Donation Policy for Catering Businesses in India" offers a promising solution to reduce food waste and channel excess food to those in need. This policy, coupled with robust implementation mechanisms like partnering with food banks and NGOs, can significantly improve food security.

**Secondly**, state-specific interventions are crucial. Analyzing state-level data can help identify the root causes of hunger in different regions. Policies can then be tailored to address these specific issues. For example, states with high child malnutrition rates might require targeted nutrition programs for mothers and children.



**Thirdly**, strengthening the Public Distribution System (PDS) is essential. Streamlining food distribution channels and minimizing leakages will ensure food reaches the most vulnerable populations. Additionally, promoting agricultural practices that enhance food security and empower small farmers requires continued focus.

### **Investing in a Hunger-Free Future :-**

Eradicating hunger in India demands a collective effort from the government, businesses, NGOs, and civil society. By implementing the proposed policy framework, combined with targeted state-level interventions and a focus on strengthening the PDS and agricultural practices, India can move towards a future where food security is a reality for all. This investment in a hunger-free future will not only improve public health but also foster social equity and contribute to a more prosperous nation.