WFP World Food Programme

Centre for Technology Alternatives for Rural Areas

# 2nd ROUNDTABLE CONFERENCE

# ON

# MALNUTRITION IN INDIA: PREVENTION AND REDUCTION STRATEGIES

(A JOINT INITIATIVE OF WFP & IIT BOMBAY)

## A POLICY NOTE

2024

# Overview

## To achieve the targets under SDG 2 (Zero Hunger) and SDG 3 (Good Health and Well Being for All), a significant emphasis needs to be placed to address a problem as complex and multidimensional as 'malnutrition'. This approach must focus on prevention, reduction and sustainable long-term strategies, while fostering coordinated efforts across multiple sectors and engaging diverse stakeholders both nationally and globally.

Malnutrition remains a significant public health issue in India, affecting both children and adults across various regions. Recent national surveys confirm that India is grappling with the triple burden of malnutrition– undernutrition and micronutrient deficiencies among many and the emerging issue of overweight/obesity. The country faces widespread macro and micronutrient deficiencies, with protein-energy malnutrition leading to conditions such as stunting, wasting, and underweight among children. Additionally, deficiencies in essential micronutrients like iron, zinc, vitamin A, and iodine are widespread, alongside other less frequently addressed micronutrient deficiencies.

Considering the critical need to address malnutrition in India, the **United Nations World Food Programme (WFP)** and the **Indian Institute of Technology Bombay (IITB)** jointly organized a roundtable conference on "***Malnutrition in India: Prevention and Reduction Strategies***" on 4th September 2024. The roundtable aimed to explore challenges and identify best practices, alongside innovative solutions, to address root causes and implement targeted interventions that significantly reduce malnutrition and enhance the health and well-being of affected populations. It comprised of two sessions: one focused on macronutrient deficiencies and the other on hidden hunger.

The roundtable brought together a wide range of participants, including representatives from research institutions, civil society organizations, grassroots groups, industry experts, and government agencies. Notable speakers from institutions such as the ICMR-National Institute of Nutrition, St. John's Research Institute, UNICEF, Public Health Foundation of India, ICAR – Indian Institute of Rice Research, WIN Foundation, Monash University, WFP, and IIT Bombay shared their insights and research findings, offering a range of perspectives on combating malnutrition.

***The objective of this policy note is to stimulate further dialogue and multi-sectoral collaboration, identify areas of joint research and accelerate partnerships among various stakeholders, including government entities.***

# Key Summary

**The roundtable discussion provided a platform for meaningful exchange of ideas and practical strategies to tackle malnutrition, reaffirming the need for sustained, multi-sectoral collaboration to accelerate our efforts in India's fight against malnutrition.**

## Key Statistics in India :

**35.5%**
Children under the age of 5 are **stunted** (short height for age)

**32.1%**
Children under the age of 5 are **underweight** (low weight for age)

**19.3%**
Children under the age of 5 are **wasted** (low weight for height)

**3.4%**
Children under the age of 5 are **overweight/obese** (increased weight for height)

**67.1%**
Children under the aged 6-59 months are **anaemic.**

**57%**
Women of reproductive age (15-49 years) are **anaemic**

**18.7%**
Women of reproductive age (15-49 years) have **low body mass index** (BMI<18 kg/m )

Source: National Family Health Survey -5 (2019-21), Government of India.

- **Continued advocacy for optimal child nutrition**, with a particular focus on the first 1,000 days, promoting early, exclusive and effective breastfeeding, and encouraging appropriate complementary feeding practices for children under two.

- **Focus on early intervention**, stressing the importance of sensitizing women at the pre-conception stage is vital. Empowering them to make informed decisions about their diet, childbirth, and childcare during pregnancy can lead to better outcomes for both mother and child.

- **Address the rise in processed food consumption**, as revealed by the Household Consumption Expenditure Survey 2023-24, which highlighted an increased percentage share in expenditure on processed foods across both rural and urban households, eventually leading to rise in overweight and obesity. There is a need for targeted strategies to reverse this trend and promote healthier food choices.

# Key Insights

## 01. A clear understanding of India's evolving malnutrition landscape is essential

- Slow reductions in undernutrition indicators like child stunting observed, but adult obesity on the rise. Poverty isn't the sole factor for stunting; 45 percent of districts with high stunting rates have relatively low poverty levels.
- The hidden hunger crisis is very evident through: i) increased anemia prevalence across all age groups; ii) worsening intensity (low median hemoglobin levels); iii) only 10% deficiencies detected through physical symptoms.
- Recognize the early life origins of double malnutrition. Rapid weight gain in early infancy is often linked to NCDs in adulthood.

## 02. Mapping of factors behind India's unbalanced food pyramid to develop effective strategies.

- Diets are generally characterized by high staple consumption and low intake of animal-source foods, fruits and nuts.
- Need to understand the reason for decline in food and cereal expenditure while non-food and processed food expenditures have increased. The high availability of smaller, low-cost packaged foods is a contributory factor.
- There may exist a link between obesity and higher maternal education, indicating incorrect knowledge and practices among educated mothers. Also, there is a need for programs to promote healthy school environments, health and nutrition literacy among school-age children to prevent obesity.

## 03. Strategic areas to strengthen nutrition governance

- Maternal child health and nutrition policies must bridge the link between malnutrition and survival. There is a need to improve feeding practices during the first 1000 days of life.
- ICDS should not be seen as a standalone supplementary nutrition program. It's role for other services such as early childhood education, growth monitoring, immunization, health check-ups needs more push and emphasis.
- Optimize the macronutrient profile of nutrition programs while ensuring compliance with calorie norms and minimizing added sugars.

# Key Insights

## 04. Different approaches to holistically address hidden hunger

- An integrated approach to improve hidden hunger in short and long-term includes improving dietary diversity, supplementation and food fortification.
- Enhancing dietary diversity requires increasing the production, preservation, and marketing of micronutrient-rich foods. This should be complemented by nutrition education to improve knowledge of age-appropriate dietary practices, along with discouraging processed food consumption and correcting traditional myths.
- Iron adequacy is estimated to increase from an average of 34% to 74% with PDS-supplied fortified rice and salt. But iron bioavailability is an issue; hence rice fortification programs can adopt modification approaches, such as high-efficacy iron compounds, as used for fortified salt. In addition, non-traditional supplementation strategies such as iron fish and iodine bindis can be effective.
- Another alternative is food-to-food fortification by development of ready-to-use formulations with enhanced nutrient bioavailability by selecting nutrient-dense ingredients and incorporating essential vitamins.

## 05.Recognize the importance of adopting sustainable agricultural practices to improve nutritional security

- Differentiation of dietary diversity and dietary adequacy is crucial. Despite the high vegetable production, only limited varieties provide essential micronutrients. Horticulture production is subject to seasonality and water shortage concerns.
- Biofortified varieties maintain yields, but there is a need to assess their millable characteristics to understand whether they are economically sustainable. Reasons for low uptake of bio-fortified crops include: i) miller-driven market; ii) no special pricing; iii) farmer buyback expectation.
- Despite advocating farm diversification to pulses, paddy still receives the highest government subsidies.
- Sustainable agrarian practices needs to be adopted to increase food production (agroforestry, organic farming, and integrated pest management) and efficient utilization of food distribution networks to curtail post-harvest losses (market linkages, improved cold storage facilities and transportation networks).

# Innovative solutions & technologies showcased

## Leveraging social protection schemes to address nutrition

WFP demonstrated its multiple initiatives undertaken to support government's three large scale food safety nets, which mainly included fortification of staple cereals (rice, wheat) under Targeted Public Distribution System, capacity building of cooks on food safety and hygiene under PM-POSHAN and re-formulation of nutritious THR products under ICDS, among others.

## Sustainable nutrition projects

WIN Foundation shared their experiences in innovations at grassroots to tackle malnutrition using local market creation approach through skilling and micro-entrepreneurship of women to adopt innovations and further support in scale-up and replication through provision of seed-fund, central kitchen setup, technical guidance, network and support.

## Health spoken tutorials on A-MIYCF

IIT Bombay presented health spoken tutorials (HST) developed as a maternal-child nutrition counseling tool, that consists of 102 topics including correct breastfeeding practices, weight gain monitoring, and nutritious protein-rich recipes. It has been translated in multiple local languages including tribal languages such as Korku, Pawra, Bhilli and Santhali.

## Tackling overweight/ obesity

PHFI presented various studies on interventions to tackle over-nutrition and obesity in India, highlighting gaps and challenges. These included diabetes awareness among students, a school-based program on adolescent diet and physical activity, campaigns promoting physical activity, and assessments of food environments around educational institutes.

## Nutrition-rich products developed using food to food fortification approach

PhD students at IITB presented two ready-to-use plant -based food formulations to tackle undernutrition and iron deficiency anemia. One is a vegan sprinkler formulation that can be added into any cooked recipes through a dry powder formulation, while other is an economical and highly nutritious energy bar.

## Point of care, multi-nutrient digital detection kit for malnutrition

Edhaa Innovations demonstrated 'Bio-cheq', a smart and portable, multi-parametric device which enables point-of-care testing of multiple nutrients and can empower healthcare providers and patients for early identification and informed decision making.

## Food based strategies to address Anemia

A Cornell University post-doctoral fellow presented studies on anemia interventions being undertaken in India, including the effect of iron-biofortified pearl millet for children (12-18 months) and the efficacy of quadruple-fortified salt (iron, iodine, vitamin B12, and/or folic acid) on anemia and micronutrient status in women of reproductive age.

## Open source dietary recall and localisation toolkit

A Professor at Monash University demonstrated 'Intake24' an open-source self-completed computerized dietary recall system based on multiple-pass 24-hour recall. The tool is customizable and offers similar data quality to interviewer-led recalls at a significantly lower cost.

# Key Recommendations

## 01 # SYSTEM STRENGTHENING TO IMPROVE NUTRITION GOVERNANCE

- Consider reviewing the modules to help refine the roles of ICDS and the Health Department, ensuring clearer delineation of responsibilities as they work in tandem during the crucial first 1000 days.
- Build leadership capacities at local levels, strengthen the supply chain, streamline administration with nutrition experts or technical cells, and ensure budget continuity along with cohesive planning and monitoring.
- Implement policy reforms to support farmer diversification to pulses, including providing higher subsidies.
- Foster collaboration with stakeholders providing technical assistance for rice fortification.

## 02 # A SYSTEMATIC APPROACH TO IMPROVE THE QUALITY OF SCHOOL MEALS AND SUPPLEMENTARY NUTRITION PROGRAMS

- Promote the production of nutrient-dense fortified THR recipes with low-added sugar.
- Support quality control through production trials assessing THR shelf life and acceptability, develop QA/QC protocols and ensure appropriate labelling and packaging.
- Strengthen school meals through capacity building of cooks and support implementing school kitchen gardens in schools and Anganwadi.
- Revise food norms under PM POSHAN to include fruits, vegetables, etc and support periodic revision in school menu planning to avoid monotony.
- Reinforce current regulation of breastmilk substitutes and orders regulating the sale of foods high in fat, salt and sugar near/in schools.

## 03 # SBCC TO REDUCE HIDDEN HUNGER AND MACRONUTRIENT MALNUTRITION

- Scale up sensitization efforts to guide the use of THR by beneficiaries and address the myths related to fortified foods.
- Encourage nutrition counselling by ICDS on subjects such as effective breastfeeding during the first 6 months and complementary feeding. Promote capacity building of frontline workers on appropriate IYCF practices.
- Collaborate with stakeholders, including nutritionists and academia, to localize dietary assessment tools that support the uptake of healthier diets.
- Collaborate with stakeholders to develop engaging guidance material on healthy diet, sleep and physical activity among children and adolescents. Correct traditional food myths and promote reduced consumption of processed foods/beverages/sweets.
- Strengthen guidance for non-communicable disease prevention along with current guidance for preconception and antenatal care, to reduce the risk of communicable obesity.

## 04 # REVISION IN REGULATIONS TO PREVENT OBESITY

- Restrict advertisements of foods high in fat, sugar, or salt (HFSS) by strengthening existing guidelines.
- Impose a high health tax for sugar-sweetened beverages and an additional health tax on sweets and confectioneries.

# Agenda

**Welcome and Introduction:** ***Prof. Satish B. Agnihotri,*** Emeritus Fellow, CTARA, IIT Bombay
**Special Remarks:** ***Ms. Elisabeth Faure,*** Representative and Country Director, WFP India
**Setting of Context:** ***Mr. Paramjyoti Chattopadhyay,*** Head, RAM and Evaluation Unit, WFP India
**Keynote Address:** ***Dr. Sheila Vir,*** Director, Public Health Nutrition and Development Centre
**Key takeaways:** **Prof. Sarthak Gaurav**, Associate Professor, SJMSOM, IIT Bombay
**Valedictory Address:** ***Dr. Vinod Paul,*** Member, NITI Aayog, Government of India

## SESSION 1: MACRONUTRIENT MALNUTRITION: CHALLENGES AND SOLUTIONS

### Panel Discussion: Overview, existing government strategies, and Challenges

**Moderator:** ***Prof. Satish B. Agnihotri***
Emeritus Fellow, CTARA, IIT Bombay

**Speaker 1:** ***Dr. Richa Singh Pandey,*** Nutrition Specialist, UNICEF
Topic: Malnutrition landscape in India

**Speaker 2:** ***Mr. Siraj Hussain,*** Rtd. IAS, Advisor, Food Processing FICCI & Chair, WFP Trust of India
Topic: Production of wheat and oil seeds, pulses in PDS and its influence child malnutrition

**Speaker 3:** ***Dr. Patrick Oliver*****,** Professor, Monash University
Topic: Malnutrition and digital tools: a worldview

### Presentations: Essential interventions to overcome macro-nutrient malnutrition

**Moderator:** ***Mr. Siraj Hussain***
Rtd. IAS, Advisor, Food Processing FICCI & Chair, WFP Trust of India

**Speaker 1:** ***Dr. Rupal Dalal,*** Adjunct Professor, IIT Bombay
Topic: Role of IYCN in preventing malnutrition

**Speaker 2:** ***Dr. Shariqua Yunus Khan,*** Head of Nutrition and School Feeding, WFP
Topic: Leveraging Social Protection Schemes

**Speaker 3:** ***Dr. Monica Arora,*** Vice President, PHFI
Topic: Solutions to tackle overnutrition/obesity

**Speaker 4:** ***Dr. Pratibha Dwarkanath,*** Associate Professor, Division of Nutrition, SJRI
Topic: Insights and Strategies to combat Macro-nutrient Malnutrition

## SESSION 2: MICRONUTRIENT DEFICIENCIES: SOLUTIONS AND INNOVATIONS

### Panel Discussion: Hidden Hunger: Challenges & Opportunities

**Moderator:** ***Dr. K. Madhavan Nair***
Former Head Micronutrient Research, ICMR-NIN; Fellow at FNAMS, FNAAS and FTAS

**Speaker 1:** ***Dr. N. Arlappa,*** Head of the Division, Division of Public Health Nutrition, NIN
Topic: Supplementation strategies to combat micronutrient malnutrition

**Speaker 2:** ***Dr. Prashanth Thankachan,*** Professor, Division of Nutrition, SJRI
Topic: Fortification strategies to combat micronutrient malnutrition

**Speaker 3:** ***Dr. C. N. Neeraja,*** Head, Principal scientist, ICAR-IIRR
Topic: Biofortification to combat micronutrient malnutrition

**Speaker 4:** ***Dr. Sheila Vir,*** Director, Centre for Public Health Nutrition
Topic: Dietary Diversity to combat micronutrient malnutrition

### Presentations: Food-based strategies and Technological innovations to mitigate hidden hunger

**Moderator:** ***Mr. Siddharth Waghulkar***
Deputy Head & Programme Policy Officer, Nutrition and School Feeding Unit, WFP

**Speaker 1:** ***Mr. Paresh Vora,*** Director of India Operations, WIN Foundation
Topic: Women empowerment in mitigating undernutrition

**Speaker 2:** ***Dr. Dripta Roy Chowdhury,*** Post Doctoral Associate, Cornell University
Topic: Micronutrient malnutrition: Anaemia and RCTs

**Speaker 3:** ***Ms. Ashi Khare,*** PhD Research Scholar, IIT Bombay
Topic: Iron-rich formulations to combat Iron Deficiency Anemia

**Speaker 4:** ***Mrs. Shruti Bhatt Mehta*****,** PhD Research Scholar, IIT Bombay
Topic: Vegan Sprinkler formulation to reduce child undernutrition

**Speaker 5:** ***Dr. Saugandha Das,*** Co-founder and Director, Edhaa Innovations Pvt. Ltd.
Topic: Micronutrient content estimation from blood: Portable device

**Walk-in Poster Session / Demonstration by Students, IITB and WFP Team**

# Photo Gallery











# Acknowledgements

We would like to extend our sincere gratitude to all the attendees who participated in the roundtable discussion. Their active engagement, sharing of expertise and invaluable insights significantly enriched the session. We sincerely appreciate their dedication to foster collaboration and innovation in this crucial field. Together, we are paving the way towards a malnutrition free nation.

## Contact

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