



# FOOD FORTIFICATION IN INDIA: ENRICHING FOODS, ENRICHING LIVES

Presentation by:

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INVESTING IN PARTNERSHIPS TO STOP MALNUTRITION

# Sixty-seven Years Ago .....

When India became independent, we faced two major problems, with grave nutritional impact:

- ✓ threat of famine and low agricultural production and
- ✓ lack of an appropriate food distribution system

These were compounded by:

- low dietary intake because of poverty and low purchasing power;
- high prevalence of infections due to poor access to safe water, sanitation & health care;
- poor utilization of available facilities due to low literacy and lack of awareness

**RESULT:** Population suffered from CED and micronutrient malnutrition

## Our Constitutional Obligation:

Access to good nutrition and health is a fundamental human right and a cornerstone that defines health of all

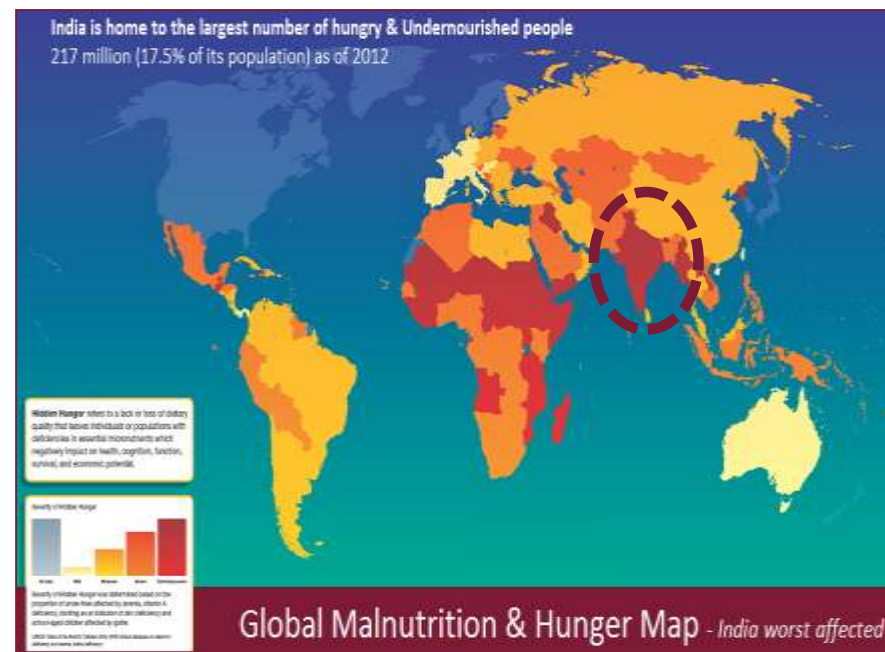
Article 47 of our Constitution reflects our commitment. It states:

*“The State shall regard the raising of the level of nutrition and the standard of living of its people and the improvement of public health as among its primary duties .....*”

# Lets See How Are We Faring Today.....

Despite substantial strides in food grain production,

- Malnutrition amongst children in India is highest in the world
- India has 35 % of the world's malnourished children
- Nearly a third of the world's hungry reside in India
- About *26% Of India's population - 268 million* – are considered food-insecure, consuming *less than 80% of minimum energy requirements*



**India is severely affected**

# Why Focus on Hunger and Malnutrition ?



Hunger and malnutrition stunt growth - intellectually and physically, leading to

- ✓ *premature death,*
- ✓ *disability, life-long susceptibility to illness,*
- ✓ *poor cognitive and learning skills,*
- ✓ *low achievement in school,*
- ✓ *low productivity and low wages, and hence*
- ✓ *poverty*

***Malnutrition starts early... Right from the Womb***

Stagnating child and maternal malnutrition rates, including micronutrient malnutrition are at very high levels and their impact is devastating.... ***This is unacceptable !!***

## **Malnutrition Affects:**

- ✓ Health and Survival
- ✓ Educability
- ✓ Economic Productivity
- ✓ Disability

**These are Irreversible  
BUT Preventable !**

## **Micronutrient Malnutrition Impacts:**

- ✓ Learning ability
- ✓ School performance and Retention rates
- ✓ Speech & hearing defects

**These are Permanent !**

# Nutrition and Health Indicators

Nutrition and Health Indicators	India	Madhya Pradesh	Rajasthan
IMR	53	70	63
MMR	254	335	388
< 5 mortality	74	94	86

India's 1/3<sup>rd</sup> population being children and youth, is considered as its Demographic Dividend .... But with such high levels of micronutrient malnutrition that seriously impair the development of human capital, labour productivity and future social and economic development .....

***This cannot be counted as our Demographic Dividend***

Children age 12-59 months who received at least 1 dose of vitamin A (%) CES -2009

Mothers who consumed IFA for 90 days or more when they were pregnant with their last child (%): NFHS – 3

64	43	66
22	12	13

# Micronutrient Malnutrition: 3 Options to Control

## Supplementation

- Two high-doses of Vit A per year
- Iron syrup and capsules
- ✓ A safe and efficient strategy for eliminating VAD & Anaemia for improving child survival.



*GOI programmes reach only about 55% of the children. Compliance is also an issue*

## Dietary Diversification

- Food prices spiralling and hence mostly cereals and tubers. Low in vegetables, fruits and lentils
- Non-anima sources comprise > 80% of intake.
- ✓ Implementation and Scaling up difficult,



*Affordability of a diversified diet is a big question*

## Food Fortification

- High consumption of Staples
- Great hope for long-term control of MND.
- ✓ Potential to reach all income groups through basic food items with minimal changes in eating habits.

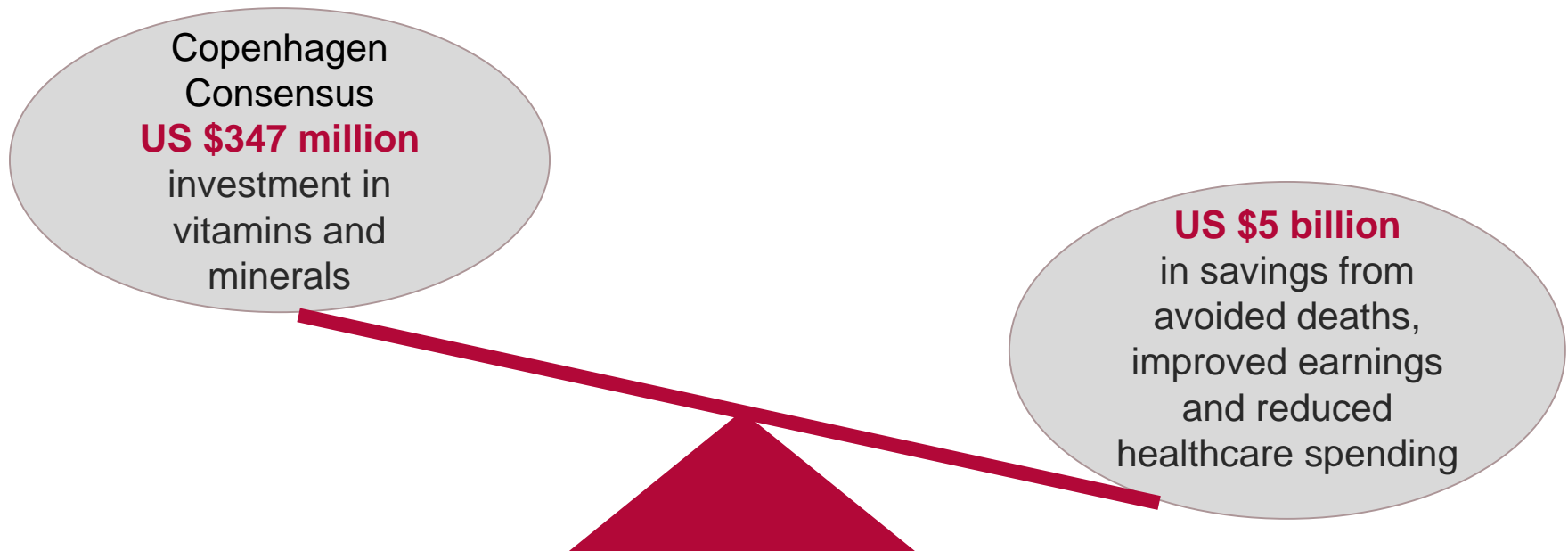


*Only about 2% foods available in the market are estimated to be fortified*

Of these options, **fortification** is most efficient on account of **comparatively lower cost to implement** & ability to **yield significant results** in a **short period of time**.

# Food Fortification: Benefits Outweigh Cost

**Food Fortification / Enrichment:** Addition of one or more essential nutrients to food, for the purpose of preventing or correcting a demonstrated deficiency of one or more nutrients at the population level / specific groups

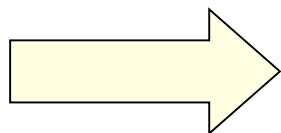


**Probably no other technology available today offers as large an opportunity to improve lives & accelerate development at such low cost & in such a short time\*** \* (Source: Enriching Lives, The World Bank)

# Why Fortify Staples in Rajasthan and Madhya Pradesh

## Consumption Patterns of Food (day/capita)\*

Food	India	Rajasthan	MP
Wheat	160g	250g	215g
Edible oil	14g	20g	20g
Milk	82ml	200g	180g



Consumption of wheat, oil and milk in Rajasthan and MP is higher than the national average

Diets are primarily cereal based and wheat comprises 70-90% of the total cereal consumption

Hence, these are good vehicles for fortification as micronutrients can reach all population groups when these fortified foods are consumed

\* Source: Household Consumer NSS Report 2011 on Expenditure in India, 2009-10, 66th Round



# How We Started



- ✓ Brought together stakeholders including the Industry partners through informal and formal discussions
- ✓ Discussed nutrition and health issues and highlighted their role in malnutrition reduction
- ✓ Many food processors got encouraged and wanted to start fortification
- ✓ Undertook Industry assessment to understand the need for capacity enhancement: infrastructure, manpower, QAQC
- ✓ Managed fears / apprehensions / eliminated myths of Industry and consumers through active scientific, social and media engagements
- ✓ Strengthened systems for external regulatory monitoring
- ✓ Got the Chief / Senior Ministers of the States to launch fortified foods
- ✓ Organized many Media Workshops and Community Events to create awareness and demand through print, electronic and social media
- ✓ Launched a high-pitched social marketing campaign and promoted logos



# Large-scale food fortification projects in Madhya Pradesh and Rajasthan

## Project Logical Framework

Input	Process	Output	Outcomes	Impact
<ol style="list-style-type: none"> <li>1. Equipment</li> <li>2. Premix</li> <li>3. Financial support</li> <li>4. Technical support</li> <li>5. Policy advocacy</li> </ol>	<ol style="list-style-type: none"> <li>1. Partnership</li> <li>2. Production,</li> <li>3. Advocacy</li> <li>4. Marketing</li> <li>5. M&amp;E</li> <li>6. Training</li> <li>7. QAQC</li> </ol>	<ol style="list-style-type: none"> <li>1. Availability</li> <li>2. Acceptability</li> <li>3. Accessibility</li> <li>4. Affordability</li> <li>5. Awareness &amp; consumption of fortified foods</li> </ol>	<ol style="list-style-type: none"> <li>1. Improved anaemia &amp; vitamin A status</li> <li>2. Increased wheat flour fortification by industry</li> </ol>	<p>Reduction in anaemia &amp; vitamin A status in the population and the attendant health benefits</p>

<b>Project components</b>	<b>Production &amp; Distribution</b>	<ul style="list-style-type: none"> <li>• Equipment and Premix on sliding subsidy</li> <li>• Technical support &amp; capacity building</li> </ul>
	<b>Legislation &amp; Quality Control</b>	<ul style="list-style-type: none"> <li>• Quality Assurance &amp; Control protocols</li> <li>• Advocacy for supportive legislation</li> </ul>
	<b>Social Marketing &amp; Communication</b>	<ul style="list-style-type: none"> <li>• Develop communication strategy and its Roll out</li> <li>• Stakeholder alliance and consultation</li> </ul>
	<b>Monitoring &amp; Evaluation</b>	<ul style="list-style-type: none"> <li>• Process monitoring and reporting</li> <li>• Using data for course correction</li> </ul>
	<b>Project Management</b>	<ul style="list-style-type: none"> <li>• Project implementation</li> <li>• Dissemination of results to scale up</li> </ul>

# Launch of Fortified Foods



# Policy Advocacy Leading to Regulatory Support for Fortification

## Current regulation and supportive environment:

- The Food Safety and Standards Authority of India (**FSSAI**) *permits fortification of foods*
- National Nutrition Mission highlights the need to focus on micronutrient fortification.
- India's 10<sup>th</sup>, 11<sup>th</sup> and 12<sup>th</sup> Five Year Plans recommend food fortification as important strategy to tackle micronutrient malnutrition
- Ministry of Food Processing Industry, GOI, **provides financial assistance** to the Food Industry **for capital equipment** and its installation for undertaking **fortification, and value addition**

# How Micronutrients Impact Our Quality of Life

**Improved  
Vitamin and  
Mineral  
Status**

**Improves Immunity  
Decreases Anemia  
Improves Cognitive  
Skills & education**

**Better School Achievement  
Increased Productivity & incomes  
Decreased Mortality  
Improved Quality of Life**

As policy makers, public health and nutrition professionals, economists and business representatives, we cannot stand by while micronutrient deficiencies cause enormous loss of life and impose chronic disabilities of mind and body on future generations in India

# Foods and Channels Used for Fortification

## Integrated Fortification Project

### Fortification of Foods Provided Under Public Funded Programs

### Mass Fortification of Foods Through Commercial Channels

#### ICDS

Children 3-6 yrs:  
Fortified wheat flour/fortified rice/  
fortified soyadal analogue, iodized salt and fortified oil

#### Midday Meal programme

Fortified wheat flour/fortified rice/  
fortified soyadal analogue, iodized salt and fortified oil

#### PDS

Fortified wheat flour in place of/  
conjunction with grains, iodized salt & fortified oil

### Fortified Foods through Open market

Wheat flour

Rice

Milk

Oil

Salt

## Achievements: Projects have good will, support and recognition from Industry, State Govt. Counterparts and the Polity

Vehicle	Avg. Production (MT)/ Year	Reach (people in millions)	Samples tested (monthly)	External pass rate
Fortified Wheat Flour in Rajasthan (direct support)	90,000	1.5	33	85%
Fortified Wheat Flour in Rajasthan (Leverage)	840,000	9.8	Not available	Not available
Fortified Oil in Rajasthan	246,000	38.5	12	100%
Fortified Milk in Rajasthan	528,000	7.35	66	100%
Soyadal analogue for lentil fortification in Rajasthan	76.8	1.1	12	100%
Fortified Wheat Flour in MP (direct support)	222,000	3.5	24	87%
Fortified Wheat Flour in MP (Leverage in other states)	816,000	12.6	Not available	Not available
Fortified Oil in MP (direct support)	240,000	35	6	100%

# Our Challenges



- ✓ Nutrition and Food Fortification are not sufficiently prioritized in India and resources for nutrition improvement are not optimised
- ✓ Lack of effective overall consensus and coordination between sectors at national level on how to move forward for improving nutrition and health
- ✓ Insufficient motivation and capacities at national and decentralized level to design, implement and monitor interventions
- ✓ Mainstreaming fortified wheat flour in the Public funded programs like Public Distribution System, ICDS and MDM: Conversion of grains to fortified wheat has huge financial implications and limited shelf-life of fortified wheat flour is an impediment. Requires a political decision
- ✓ Food Processors desire fortification to be made mandatory to give them a level playing field



## Lessons Learnt and Way Forward.....

1. Staple Food Fortification is *do-able and very cost-effective*
2. Food fortification *does not lead to organoleptic changes* and hence *widely acceptable*
3. **Processing is simple** and does not require expensive equipment.  
*Food industry can thus do it at very low investment*



Staple Food Fortification is an *evidence based strategy* and a practical solution which needs to be scaled up in India ....  
*What we need is a strong political will and policy support*

- ✓ **Promote a national logo** to indicate that the food is fortified.... It could be a yellow star and promoted as we promote red / green dots for vegetarian and non-vegetarian foods
- ✓ **Create awareness** about the goodness of fortified foods.
- ✓ Nutrition is a **cross-cutting issue** and coordinated efforts of many sectors are required ..... *We need to join hands and not work at cross-purpose*



***Let us not shy away from our collective responsibility of providing good health and improved quality of life to all !***

***Lets Eat Right ... Lets Eat Fortified***

***Thank you !!***