



# Mid Day Meal Scheme



## Fortification Under MDM

Bhubaneswar, 13-14<sup>th</sup> November 2017

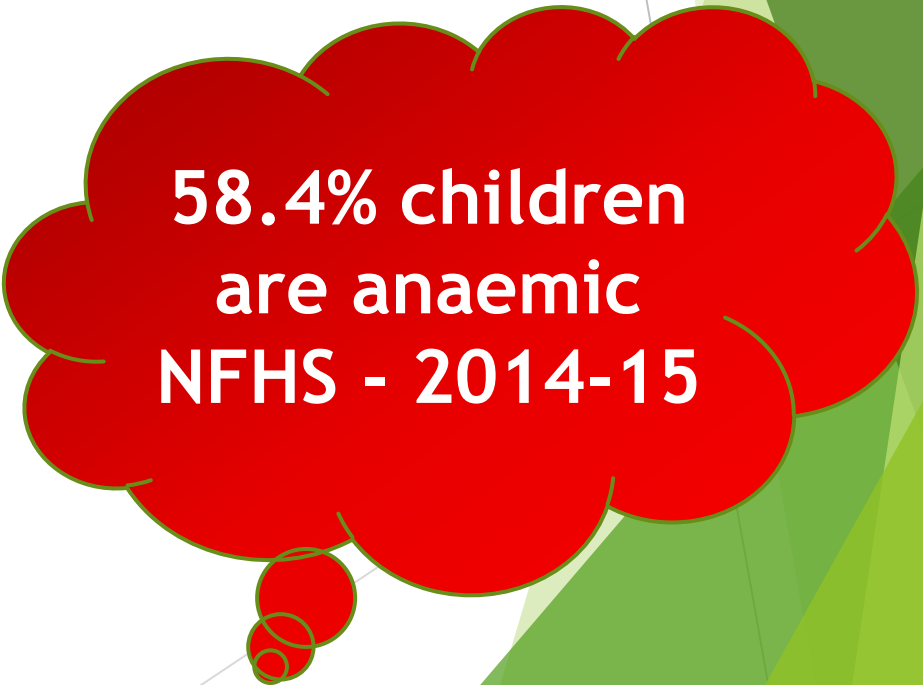


## WHO Definition

The process whereby nutrients are added to foods (in relatively small quantities) to maintain or improve the quality of the diet of a group, a community or a population



Hidden Hunger



58.4% children  
are anaemic  
NFHS - 2014-15

# Advantages

- ❑ Excellent method to improve the health of population
- ❑ No health risk.
- ❑ Regulated addition as per prescribed standards.
- ❑ No change in food habits.
- ❑ Socio-culturally acceptable.
- ❑ Improves health in a short time.
- ❑ Cost-effective
- ❑ Prevents/reduces deficiency of essential nutrients;
- ❑ Improves nutritional status of essential nutrients
- ❑ Helps in meeting RDA of essential nutrients
- ❑ Maintains or improves the quality of foods.

# Fortificants

- Iron, riboflavin, folic acid, zinc, Vitamin B12 [prevent anemia](#)
- Folic acid (Vitamin B9) reduces the risk of [birth defects](#).
- Zinc strengthens immune systems; control diarrhea.
- Niacin (Vitamin B3) prevents the skin disease.
- Riboflavin (Vitamin B2) helps with metabolism of fats, carbohydrates, and proteins.
- Thiamin (vitamin B1) prevents beriberi.

# Fortificants

- Vitamin D helps bodies absorb calcium.
- Vitamin A deficiency - leading cause of childhood blindness and reduced immune system.
- Calcium for strong bones.
- Selenium for thyroid gland function.
- Vitamin B6 for enzyme reactions involved in metabolism

# Micronutrients (vitamins and minerals) are essential for many functions

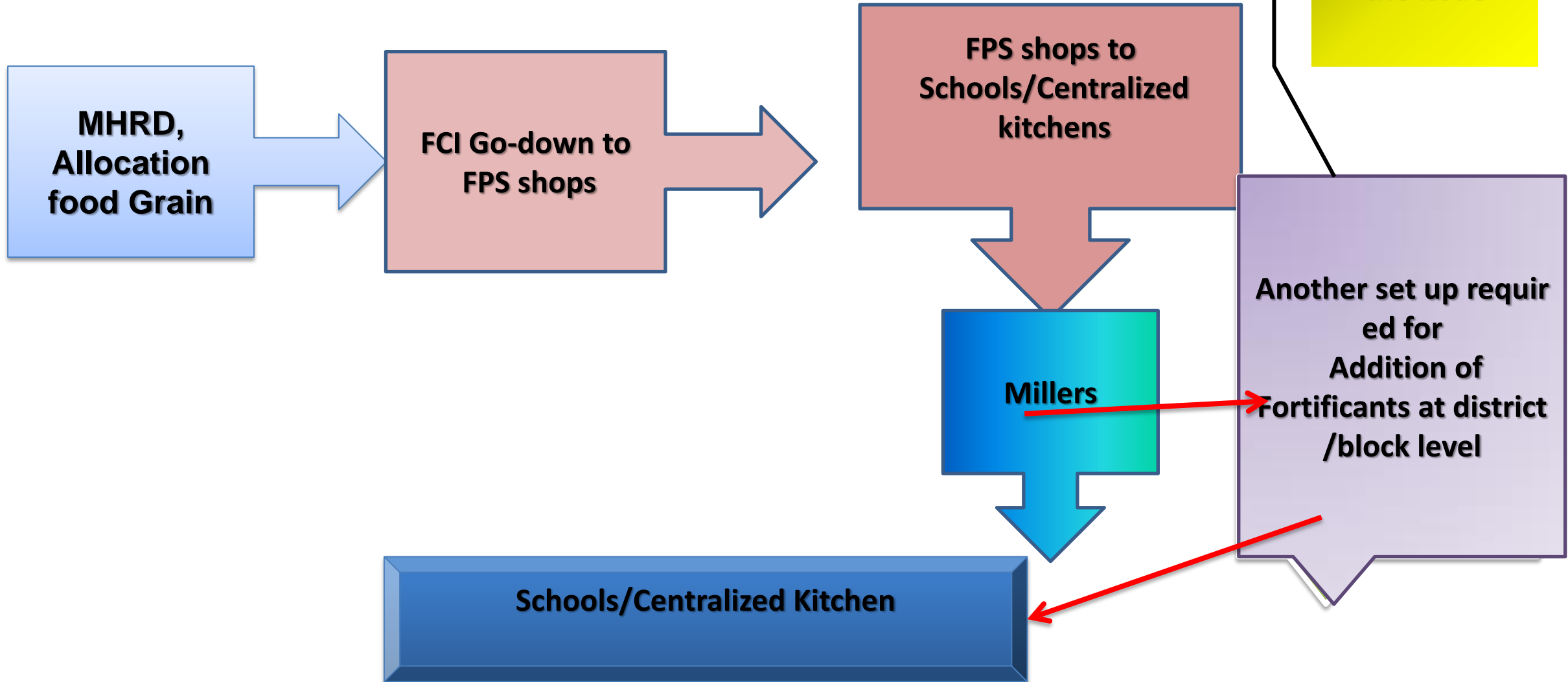


# Modalities

Engage Millers for

- Procuring Pre-mix
- Setting up of mill
- Operating the fortification system
- Monitoring the Quality

# Flow of Food Grains (Wheat) : from FCI



**MHRD,  
Allocation  
food Grain**

**FCI Go-down to  
FPS shops**

**FPS shops to  
Schools/Centralized  
kitchens**

**Millers**

**Schools/Centralized Kitchen**

**Another set up requir  
ed for  
Addition of  
Fortificants at district  
/block level**

**How to solve  
the issue**



# Initiatives for fortification under MDM

1. PMO issued direction on 26.6.17 to Ministry of HRD for mandatory fortification of the relevant food items provided under MDM.
2. Secretary, WCD informed MHRD about a joint initiative by the M/o WCD, M/o CA, Food & PD and M/o H & FW on Fortification of the food items.
3. In the first instance it has been decided that 3 food items viz., double fortified salt, wheat flour, edible oil should be considered for mandatory fortification under ICDS & MDM.

# Wheat Flour

- ❑ Fortified wheat flour is made by adding nutrients to restore quantities lost during milling or additional nutrients are added to improve its nutritive value
- ❑ FSSAI recommends to add iron, folic acid and B12.
- ❑ Fortification of wheat flour is one of the most effective, simple and an inexpensive strategy for supplying vitamins and minerals.
- ❑ Fortification can impact iron status within 12 months after the program is fully implemented if the vulnerable population consumes fortified products daily.



# Fortified Edible oil

- ▶ **What is** :When vitamins are added externally to edible oil to enhance its nutritional value, it is called edible oil fortification.
- ▶ **Type of oil** : like soybean oil, palmolein oil, groundnut oil, cotton seed oil, mustard oil etc may be fortified.
- ▶ **Need** : India has a very high burden of vitamin A and D deficiencies fortification of edible oils and fats with vitamin A and D is a good strategy to address micronutrient malnutrition.
- ▶ **Stability** : As per various scientific evaluations, heating does not destroy vitamins completely, though frying can destroy vitamins (A, D and E) to some extent.
- ▶ After repeatedly frying the oil 4 times, about 60% of the original levels of added vitamin are lost.

# Double Fortified Salt

- ▶ **What is DFS** : salt fortified with iron and Iodine either in the form of ferrous sulphate or encapsulated ferrous fumarate. (approved by FSSAI).
- ▶ **Why DFS** : Salt is an ideal vehicle to use for delivering iron and iodine because it is a staple food.
- ▶ **Need** : Is a solution to treat anaemia and iodine deficiency disorders
- ▶ Based on an estimated average salt consumption of 10 g per person/day, the DFS is designed to provide 100% daily requirement for iodine and 30% for iron.
- ▶ **Stability** :DFS to be acceptable in terms of taste and colour. (Consumer acceptability tests)
- ▶ At present Kg of DFS costs INR 14 to 25 at retail level.

## Action taken by MHRD

1. D. O. letter issued to Department of Food & Public Distribution to explore the possibility of supply of fortified Food grains through PDS.
2. D.O. letter to all Chief Secretaries of the States/UTs from Secretary (SE&L)
3. Organisation of a National Level workshop
4. Constitution of a Committee for Fortification

*A meal to a Child is an offering to the Divinity.*



*Thank you*



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सत्यमेव जयते

D.O.No. 14-10/2016 MDM 1-2 (EE.5)

भारत सरकार  
Government of India  
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Ministry of Human Resource Development  
स्कूल शिक्षा और साक्षरता विभाग  
Department of School Education & Literacy  
124 'सी' विंग, शास्त्री भवन, नई दिल्ली-110 001  
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2<sup>nd</sup> August, 2017

As you are aware deficiency of micronutrients affects the health and development of children. The main contributor to health problems is iron deficiency which can reduce children's cognitive ability. Children in India are found to be deficient in Iron as well as Iodine which may cause anaemia and goitre. A child suffering from micronutrient deficiencies finds it difficult to concentrate and work on a sustainable basis.

2. The problem of anaemia can be addressed by promoting consumption of iron rich foods and iron supplements. One of the easiest and cost effective method of increasing iron intake is by way of fortification of salt with iron and iodine. Ministry of Women and Child Development, Ministry of Consumer Affairs, Food and public Distribution and Ministry of Health and Family Welfare have already taken a joint initiative to address the issue by fortification of food items. Following this, the standards of food fortification namely "Food Safety and Standards (Fortification of foods) Regulation 2016" were operationalized by Food Safety & Standards Authority of India (FSSAI). After consulting various stakeholders, in-depth examination was done and it was decided by Govt of India that initially three food articles i.e. Double fortified salt (Iron and Iodine), wheat flour (Iron, Folic acid and Vitamin B-12) and edible oil (Vitamin-A&D) should be considered for mandatory fortification through Mid-Day Meal Scheme along with ICDS and PDS.

3. In the aforementioned context, it is reiterated that MDM Guidelines, 2006 and Food Safety Guidelines for school level kitchens under MDM in 2015 provide that only DFS should be used for cooking mid-day meal.

4. You are, therefore, advised to take suitable steps to ensure mandatory fortification of the aforesaid food articles used in Mid-Day Meal Scheme with immediate effect. In addition you may encourage the use of green leafy vegetables like Spinach, drumsticks, and other locally available and culturally acceptable iron-rich vegetables in your respective State/UTs under MDMS.

5. I shall appreciate if you could kindly provide information on the current position as well as the action taken to promote the mandatory use of DFS, fortified wheat flour if used in Mid-Day Meal and fortified edible oil.

Yours sincerely,

Sd/-

(Anil Swarup)

To

Chief Secretaries of all States/UTs

Copy for information to:

1. Shri Nripendra Mishra, Principal Secretary to the Prime Minister, South Block, New Delhi.
2. Shri Avinash K Srivastava, Secretary, Department of Consumer Affairs, Ministry of Consumer Affairs, Food & Public Distribution, Krishi Bhawan, ND
3. Smt. Preeti Sudan, Secretary, Department of Food and Public Distribution, Ministry of Consumer Affairs, Food & Public Distribution, Krishi Bhawan, ND
4. Shri C.K. Mishra, Secretary, Department of Health & Family Welfare, Ministry of Health and Family Welfare, Nirman Bhawan, ND
5. Shri Rakesh Srivastava, Secretary, Ministry of Women & Child Development, Shastri Bhawan, New Delhi.
6. Shri Ashish Bahuguna, Chairperson, Food Safety and Standards Authority of India, FDA Bhawan, Kotla Road, ND-02

Anil Swarup  
(Anil Swarup)