

# 81.2%

OF CHILDREN BETWEEN THE AGES OF 5 AND 9 IN ODISHA SUFFER FROM ANAEMIA

# 74.5%

OF CHILDREN BETWEEN THE AGES OF 10 AND 17 IN ODISHA SUFFER FROM ANAEMIA

THE AVERAGE IRON INTAKE OF SCHOOL CHILDREN IN ODISHA IS MUCH LESS THAN THE RDA\*

\*RDA or Recommended Dietary Allowance is the average daily intake of micronutrients adequate to meet the nutrient requirements of nearly all healthy people.

## WHY RICE?

# 65%

INDIANS CONSUME RICE

## WHY MID DAY MEAL?

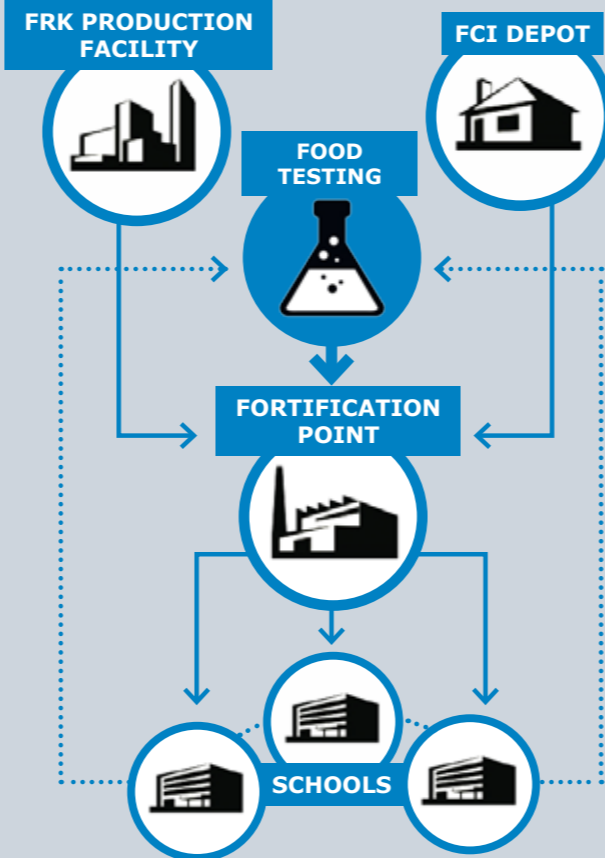
THE MDM PROGRAMME IN EASTERN STATES LIKE ODISHA IS PRIMARILY RICE-BASED

**4.92 MILLION**  
SCHOOL CHILDREN BENEFIT FROM THE MDM SCHEME EACH YEAR, IN ODISHA

ALL PRIMARY AND UPPER PRIMARY SCHOOL CHILDREN GET 100G AND 150G OF RICE PER DAY, RESPECTIVELY

**100G OF FORTIFIED RICE = 10MG IRON**

**THEREBY BOOSTING IRON INTAKE**



## RICE FORTIFICATION IS A 2 STEP PROCESS

RICE IS PULVERISED, IRON AND OTHER MICRONUTRIENTS ARE ADDED TO PRODUCE FORTIFIED RICE KERNELS  
THE RICE KERNELS ARE BLENDED WITH REGULAR RICE IN THE RATIO OF 1:100

# ₹0.24-0.36

PER STUDENT IS THE INCREMENTAL COST FOR THE PRODUCTION AND DELIVERY OF FORTIFIED RICE AS CALCULATED IN THE GAJAPATI INITIATIVE



# ₹0.08-0.12

PER STUDENT IS THE INCREMENTAL COST FOR SCALE UP OF FORTIFIED RICE IN MDM



The World Food Programme is the world's largest humanitarian agency fighting hunger worldwide. WFP is part of the United Nations system and is voluntarily funded. Born in 1961, WFP pursues a vision of the world in which every man, woman and child has access at all times to the food needed for an active and healthy life.

In India, WFP supports government food safety nets like the Targeted Public Distribution System, the Mid-Day Meal Programme in schools and the Integrated Child Development Services. The overall aim is to work towards efficient, accountable and streamlined systems for food access, delivery, as well as increasing the nutritional impact of government programmes. WFP works at the central government level, supporting policy reform, strategy, and evidence based advocacy. At the state level, WFP works through a pilot to scale-up approach. WFP works through partnerships with the government, private sector and UN agencies.



WFP FORTIFIED

5,352

METRIC TONS OF RICE

FOR

99,231

SCHOOL CHILDREN

IN

1,449

SCHOOLS IN GAJAPATI

OVER

40

MONTHS

THE MODEL CREATED IS **EASILY REPLICABLE** FOR INTEGRATION OF FORTIFICATION IN MDM

THE EVIDENCE GENERATED DEMONSTRATES A NEED FOR A **POLICY PUSH** TO INCLUDE FORTIFIED RICE IN THE MDM

THE SUPPLY CHAIN WAS STRUCTURED TO MAKE IT LEAK PROOF AND **EFFICIENT**

KEEPING SCALABILITY IN MIND THE INITIATIVE WAS A **COST EFFECTIVE STRATEGY** TO ADDRESS ANAEMIA

20

PERCENTAGE POINTS DECREASE IN ANAEMIA IN GAJAPATI

6

PERCENTAGE POINTS DECREASE IS DIRECTLY DUE TO FORTIFIED RICE

ALONG WITH FORTIFICATION WFP ALSO INVESTED IN EDUCATING AND TRAINING THE STAKEHOLDERS ON THE ISSUES OF ANAEMIA

THE WORLD FOOD PROGRAMME IN COLLABORATION WITH THE GOVERNMENT OF ODISHA IMPLEMENTED A PILOT ON **FORTIFICATION OF RICE** UNDER THE MID DAY MEAL PROGRAMME IN GAJAPATI, ODISHA

THE PROGRAMME AIMED TO REDUCE ANAEMIA AMONG SCHOOL CHILDREN THROUGH FORTIFICATION



AN EXTRAORDINARY MEAL

COMMUNICATION MATERIALS WERE DEVELOPED IN THE LOCAL LANGUAGE





# WHY FORTIFY?

**55.3%**

OF WOMEN IN AGE GROUP 15-49 YEARS HAVE ANAEMIA

**24.2%**

OF MEN IN AGE GROUP 15-49 YEARS HAVE ANAEMIA

**69.5%**

OF CHILDREN IN AGE GROUP 6-59 MONTHS HAVE ANAEMIA

A COMBINED DEFICIENCY OF VITAMIN A, IRON AND ZINC LEADS TO HIGH MORBIDITY AND MORTALITY



## WHY FORTIFY RICE

**65%**

INDIANS CONSUME RICE

### RICE IS CENTRAL TO ALL FOOD SECURITY SCHEMES IN INDIA

2013-14: **26.86** MILLION TONS OF RICE ALLOTTED THROUGH TARGETED PUBLIC DISTRIBUTION SYSTEM

2015: **2.34** MILLION TONS OF RICE ALLOTTED UNDER THE MID DAY MEAL SCHEME

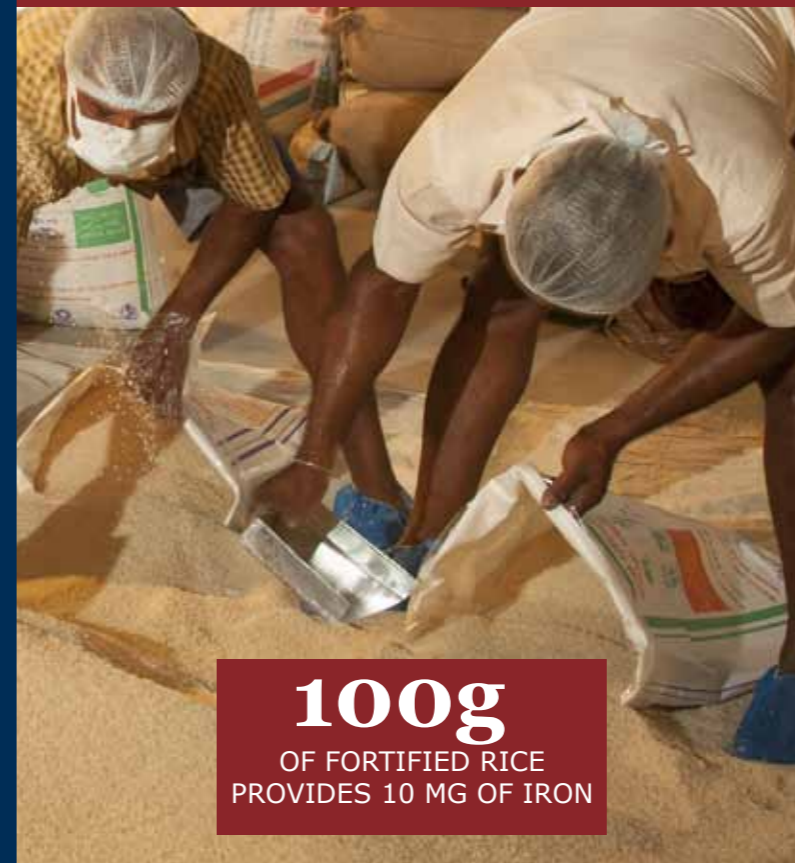
GLOBALLY RICE IS FORTIFIED THROUGH 3 METHODS  
**COATING • EXTRUSION • DUSTING**

WFP EMPLOYED THE EXTRUSION METHOD FOR ITS GAJAPATI INITIATIVE, PREFERRED FOR THE PRODUCTION OF FORTIFIED RICE KERNELS OWING TO ITS LOW COST AND STABILITY ACROSS PROCESSING, STORAGE, WASHING AND COOKING.

THE PULVERISED RICE IS MIXED WITH FERRIC PYROPHOSPHATE TO MAKE FORTIFIED RICE KERNELS WHICH CONTAIN 10 MG OF IRON IN 1 G

FORTIFIED RICE KERNELS CAN BE PRODUCED BY RICE MILLS, EXTRUDED SNACK MANUFACTURERS AND PASTA MANUFACTURERS

THE FORTIFIED KERNEL IS ADDED TO NORMAL RICE IN A RATIO OF 1:100



**100g**

OF FORTIFIED RICE PROVIDES 10 MG OF IRON



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**RICE FORTIFICATION IS NOT NEW TO INDIA**

2008-2010, THE NAANDI FOUNDATION DISTRIBUTED **1000 METRIC TONS** OF RICE TO **60,000 BENEFICIARIES** IN ANDHRA PRADESH

2011, THE AKSHAYA PATRA FOUNDATION DISTRIBUTED **3300 METRIC TONS** OF RICE TO **1,85,000 BENEFICIARIES** IN RAJASTHAN



**2012-2015, WFP DELIVERED**

**5352** METRIC TONS OF FORTIFIED RICE TO **99231** SCHOOL CHILDREN (6-14 YRS) **IN GAJAPATI DISTRICT, ODISHA**

**WFP DELIVERED FORTIFIED RICE TO 1449 SCHOOLS IN ODISHA'S GAJAPATI DISTRICT UNDER THE MID DAY MEAL PROGRAMME**

**RESULTS**

**20** PERCENTAGE POINTS DECREASE IN ANAEMIA

**6** PERCENTAGE POINTS DECREASE IS DIRECTLY DUE TO FORTIFIED RICE

THE PROJECT IMPLEMENTED IN COLLABORATION WITH THE GOVERNMENT OF ODISHA PROVED THE USE OF RICE AS TECHNICALLY EFFECTIVE FOR FORTIFICATION AND FEASIBLE TO INCORPORATE INTO EXISTING GOVERNMENT SYSTEMS



THE FSSAI HAS SET THE STANDARDS FOR FORTIFICATION OF RICE

IS IT **SAFE?**

TO AVOID EXCESSIVE INTAKE OF MICRONUTRIENTS, RICE FORTIFICATION LEVELS ARE TYPICALLY SET BELOW THE ESTIMATED AVERAGE REQUIREMENT.

MOREOVER, COOKED FORTIFIED RICE

**TASTES** AS GOOD AS NORMAL RICE

FORTIFIED RICE CAN BE DELIVERED THROUGH TWO CHANNELS, ONE BEING SOCIAL SAFETY NETS LIKE THE MDM, TPDS AND ICDS, THE SECOND BEING MARKET DRIVEN WHERE IT IS MADE AVAILABLE THROUGH PRIVATE PRODUCERS AND DISTRIBUTORS

NEED **COHESIVE POLICY GUIDANCE** ON THE INTEGRATION OF FORTIFIED RICE IN FOOD SECURITY SCHEMES

POLICY WILL ATTRACT MORE FRK PRODUCERS FOR A SCALED-UP OPERATION

**₹2.43/KG** WAS THE INCREMENTAL COST FOR GAJAPATI INITIATIVE

**₹0.8/KG** WILL BE THE INCREMENTAL COST FOR SCALE UP

THIS INCREMENTAL COST CAN BE ABSORBED BY THE CENTRAL AND STATE GOVERNMENT OR BOTH



**PACKING A PUNCH**

**A CASE FOR RICE FORTIFICATION**

WFP  