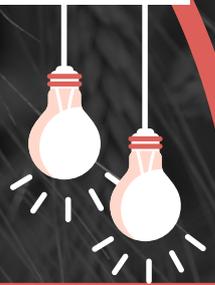




**INSIDE INSIGHTS**

**AT  
FORTIFY HEALTH**



**How did the COVID-19  
pandemic affect the  
supply of fortified  
wheat flour?**

DECEMBER 2020

**WRITERS**

AKANKSHA MANWATKAR, KAPIL PARVE, URMI BHATTACHARYA

**EDITORS**

NIKITA PATEL, CORRINA VALI

**WWW.FORTIFYHEALTH.GLOBAL**

# HOW COVID-19 AFFECTED SUPPLY OF FORTIFIED WHEAT FLOUR

## FORTIFY HEALTH'S EXPERIENCE IN MAHARASHTRA

### INTRODUCTION

There is no single event in recent memory that has had such a drastic and pervasive effect on people's lives, economy, and health systems globally as COVID-19. And it is not over yet. It has laid bare the challenges we face and complicated them - let's take anaemia. Anaemia is not a new problem. Neither are its solutions; fortification, supplementation, and consumption

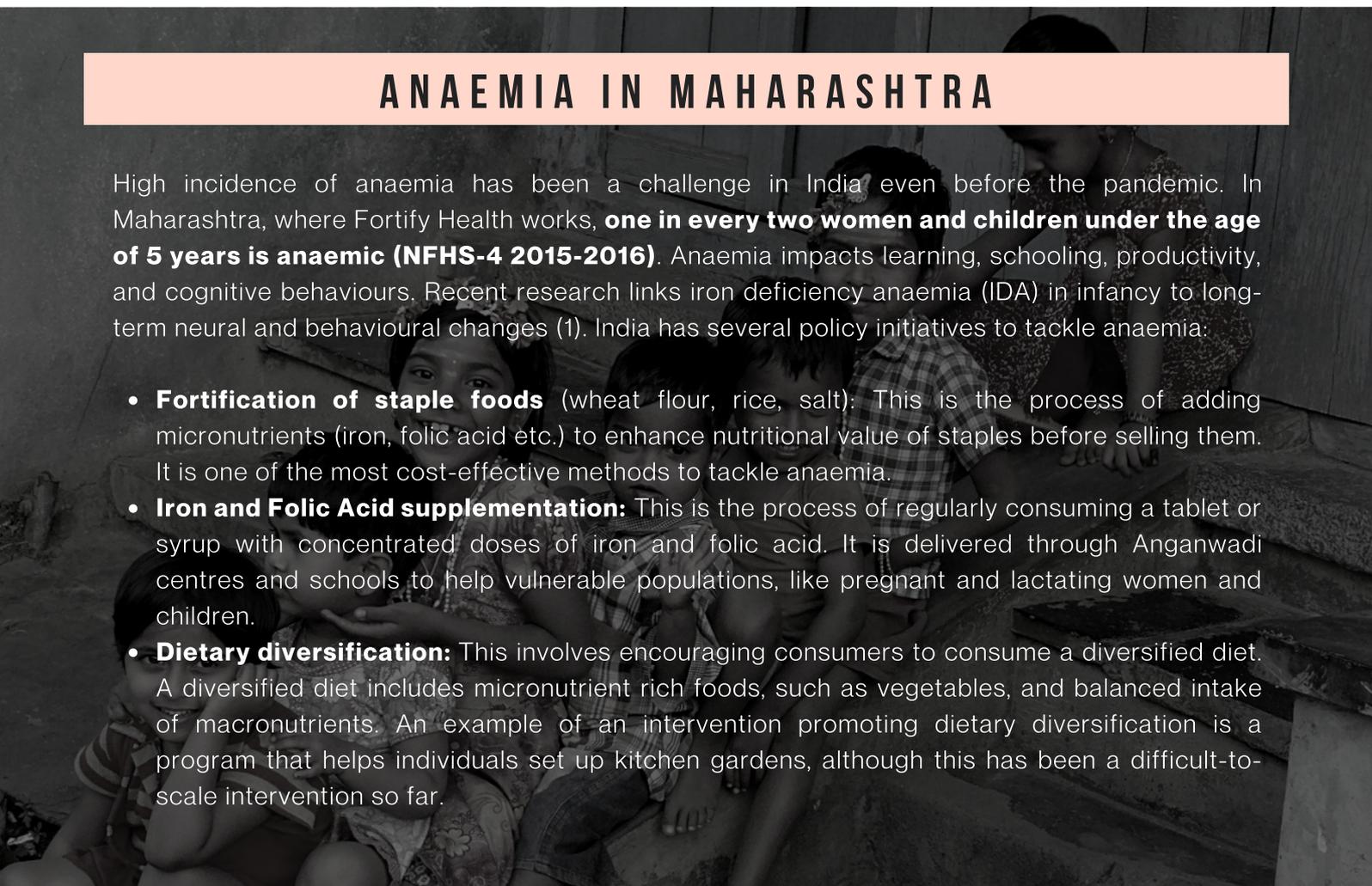
of a diversified diet. The pandemic has blunted the very tools we have to deal with anaemia. This is true of wheat flour (chakki atta) fortification as well.

But all is not lost. There is more interest in investing in health and nutrition now than ever before. How we respond today will determine our future. We describe in this piece how the pandemic has affected the supply chain of fortified atta in Maharashtra, India. We also offer some solutions to mainstream atta fortification.

### ANAEMIA IN MAHARASHTRA

High incidence of anaemia has been a challenge in India even before the pandemic. In Maharashtra, where Fortify Health works, **one in every two women and children under the age of 5 years is anaemic (NFHS-4 2015-2016)**. Anaemia impacts learning, schooling, productivity, and cognitive behaviours. Recent research links iron deficiency anaemia (IDA) in infancy to long-term neural and behavioural changes (1). India has several policy initiatives to tackle anaemia:

- **Fortification of staple foods** (wheat flour, rice, salt): This is the process of adding micronutrients (iron, folic acid etc.) to enhance nutritional value of staples before selling them. It is one of the most cost-effective methods to tackle anaemia.
- **Iron and Folic Acid supplementation:** This is the process of regularly consuming a tablet or syrup with concentrated doses of iron and folic acid. It is delivered through Anganwadi centres and schools to help vulnerable populations, like pregnant and lactating women and children.
- **Dietary diversification:** This involves encouraging consumers to consume a diversified diet. A diversified diet includes micronutrient rich foods, such as vegetables, and balanced intake of macronutrients. An example of an intervention promoting dietary diversification is a program that helps individuals set up kitchen gardens, although this has been a difficult-to-scale intervention so far.



## IMPACT OF COVID-19 ON ANAEMIA

The impact of COVID-19 on anaemia in India is not yet known (2), but it will be substantial. Experts warn that anaemia, like all micronutrient deficiencies, will worsen before visible manifestations of malnutrition, like weight loss, show. People will shift their consumption toward calorie-dense foods and away from micronutrient rich foods to cope with the crisis. COVID-19 will worsen anaemia through three routes:

- 1 Income route:** Income contraction and economic uncertainty do not leave much room to spend on nutritious food. The pandemic and the lockdowns brought the Indian economy to a grinding halt. The lockdown in India was one of the harshest in the world. The economy contracted by 23.9% in the first quarter of the financial year 2020-21. It will take a couple of years at least to get back to pre-COVID-19 levels of growth. The Centre for Monitoring Indian Economy (CMIE) reported that 21 million salaried jobs were lost in India from April to July 2020. Approximately 80% of employment in India is in the informal sector (National Sample Survey-2011-12); it is not a stretch to imagine the heavy toll the lockdown has had on jobs and income in the informal sector. We have all seen the hard hitting images of migrant informal workers walking thousands of kilometers to return home from their locations of work.
- 2 Food supply route:** Travel restrictions disrupted supply of perishable foods like fresh vegetables, milk and other nutritious foods in the early months of the lockdown from March to June 2020.
- 3 Public health system route:** The lockdown disrupted public health government programs, like distribution of iron and folic acid (IFA) tablets, mid-day meals in schools, etc. The closure of schools and anganwadi centers as well as restrictions on mobility and transportation led to these disruptions. Moreover, frontline workers in the ICDS system had to focus on COVID-19 surveillance and management.

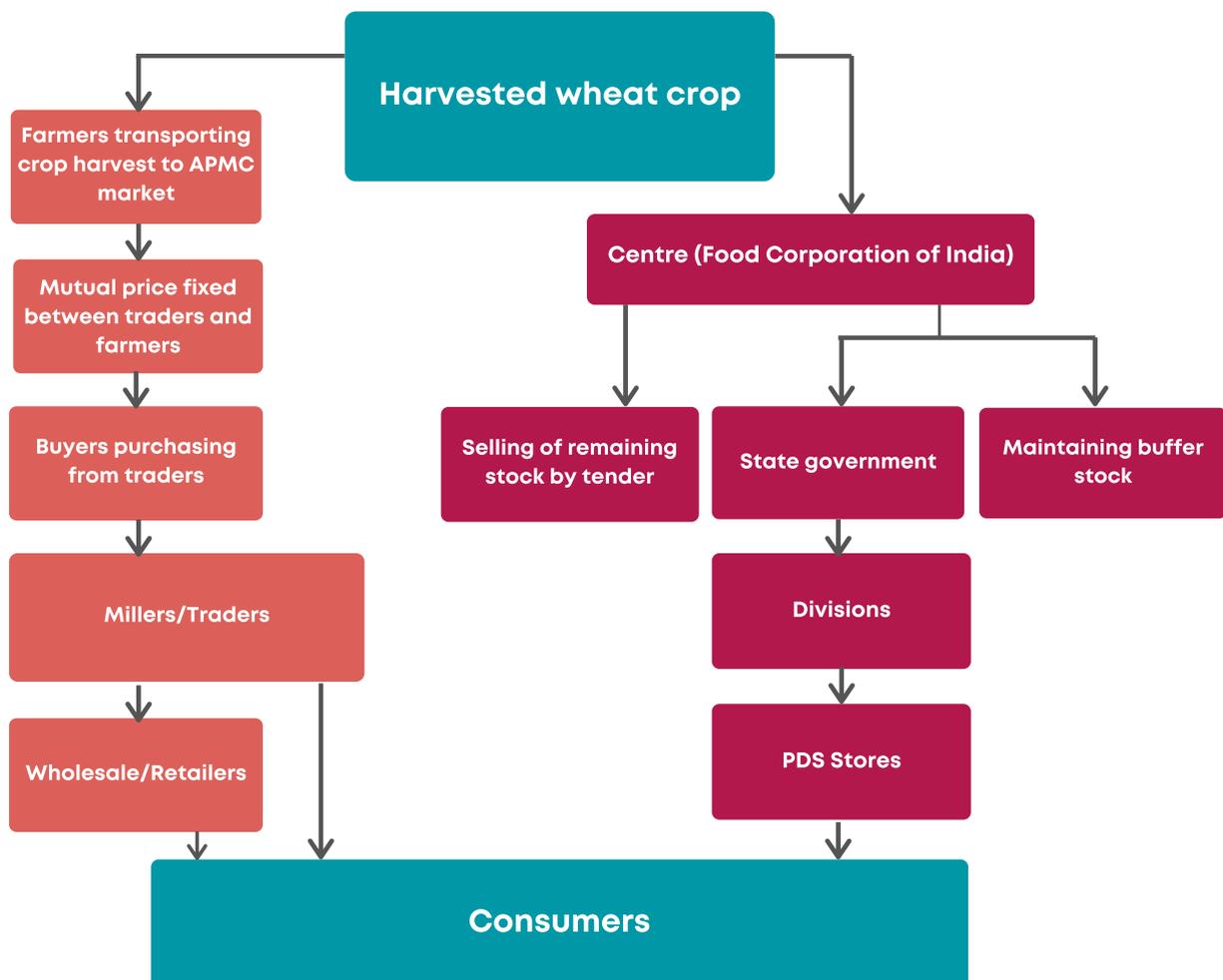
Immediate and quick action will help us to prevent further worsening of anaemia (rates and severity) in the country. Increasing the coverage and intensity of fortified staples is one of the easiest ways to prevent a rise in anaemia on a large scale. **At Fortify Health, we work with millers to increase the coverage and intensity of chakki atta fortification.**

# IMPACT OF COVID-19 ON THE SUPPLY OF FORTIFIED ATTA

To ensure atta fortification gets back on track, it is important to understand how the pandemic affected the supply of fortified atta in Maharashtra:

1. Impact on **supply of atta**
2. Impact on **supply of premix, microdosers, and reagents for testing** (required for atta fortification)
3. Impact on **willingness of millers to fortify** atta

## Snapshot of the wheat flour supply chain in Maharashtra



# 1 HOW DID COVID-19 AFFECT THE SUPPLY OF ATTA?

## 1.1 WHEAT HARVESTING

Wheat is sown in winter and harvested in spring or summer (March to April) in India. Most wheat is traded just after harvesting. The pandemic did not affect wheat harvesting as much as it has affected wheat trading and milling. Wheat sold in Maharashtra's open market comes mostly from Madhya Pradesh (MP) whereas wheat sold through the public distribution system (PDS) comes from Punjab and Haryana. Most wheat farmers in MP had already harvested when lockdown was imposed on 24 March 2020. Preliminary findings from a study (3) in early May 2020 (4) show that 75% of farmers in MP had harvested wheat by then. That figure was 84% in Punjab and 91% in Haryana.

However, just harvesting the crop does not guarantee its supply in mills if it cannot be traded. Farmers had trouble selling their crop during the lockdown; 21 % of wheat farmers in Madhya Pradesh were trying to sell their crop at the time of the survey in May as opposed to close to 0% in a typical year. This is much higher than it is an usual year. In Punjab, that number was low at 2%. Overall, 56% of farmers expressed concern about sowing wheat in the upcoming season, due to high costs and unavailability of seeds, fertiliser, and labour.

## 1.2 WHEAT TRADING IN THE OPEN MARKET

Wheat trading suffered the most since it coincided with the most stringent months of the lockdown. Agricultural Produce Market Committees (APMCs) are authorised trading areas to buy wheat grains from farmers. Trading in these markets was affected by:

- unavailability of workers to load and unload grains. APMCs were operating with only 10% of workers;
- unavailability of truck drivers, most of whom had returned to their home villages;
- restrictions on travel, especially between states;
- restrictions on operations in APMC markets to avoid mass gatherings and enforce social distancing.

The cost of transportation and labour (5) increased for farmers, which is why millers bought either less wheat or bought it at higher prices.

## **1.3 ATTA (AKA WHEAT FLOUR) MILLING**

Wheat is ground into atta in mechanized (6) mills or non-mechanized mills (locally called “chakkis”) (7) in Maharashtra. How the pandemic affected operations in mills depended on the size of the mill, the robustness of its supply chain, and its ability to retain or hire labourers during the lockdown.

Mechanized mills in Maharashtra hire labourers from other states. Most of these labourers returned to their home states in the initial months of the lockdown. Mills, especially smaller ones, produce atta based on the orders they get. The sudden lockdown led to widespread panic-buying of non-perishable staple foods. Demand for atta spiked from March to May 2020 as retailers and consumers stocked up. Mills were operating at full capacity to meet the high demand with limited wheat grain and labourers.

Demand for atta dropped around June 2020 as households were stocked. Mills lost customers as restaurants and canteens closed shutters and retailers stopped orders. Mills quickly resolved their labour issues as the restrictions eased, either by hiring locally or persuading old workers to join. Some mills coped by prioritizing production of maida (low extraction wheat flour) over atta. Three of our five partner mill partners adopted this strategy.

## **2 HOW DID THE PANDEMIC AFFECT THE SUPPLY OF PREMIX, DOSING MACHINES AND REAGENTS (USED IN QUALITY CONTROL) FOR FORTIFICATION?**

We have not seen any impact of the pandemic on the cost of premixes, dosing machines, and reagents yet. However, we cannot rule out a longer term impact. In the short term, manufacturers prioritise customer retention over increasing prices to recover costs. In the longer term, we anticipate prices will rise as manufacturers pass on the higher cost of labour and raw material to buyers. We unpack the impact of the pandemic on three essentials for millers to fortify atta:



## 2.1 IMPACT ON PREMIX SUPPLY

Premixes are manufactured by pharmaceutical and nutrient supplement industries. Premix manufacturers were not allowed to operate in the initial months of lockdown, as it is not an essential food commodity. There were concerns that increased export controls would disrupt the supply of imported raw materials, which would increase the cost and prices of premix. Our premix supplier did not face issues in procuring raw material as they had stock of raw materials for about a year. But production and transport of premix was hit by a lack of workers and transport bans. Production recovered post June 2020 as travel restrictions eased. We cannot rule out price increases in the future if manufacturers try to meet increased costs of production (rising import duties, global transport restrictions) to make up for losses during the early part of the lockdown.

## 2.2 IMPACT ON SUPPLY OF MICRO-DOSERS

We did not order any new micro-dosers during the initial phase of lockdowns. Micro dosers, procured just before lockdown, were delivered to our partner mills after a 3 to 4 month delay. The installation of micro-dosers was further delayed because our team could not travel safely, the government imposed travel restrictions and there were no workers to help with installation in mills. We do not know how prices of micro-dosers have changed as we do not have industry-wide data. In our experience so far, prices have not gone up even though cost of production may have increased. But, prices can increase in the future.

## 2.3 IMPACT ON QUALITY CONTROL OF FORTIFICATION IN MILLS

Mill workers have not focussed on quality control of fortified atta, which includes: conducting iron spot tests; collecting atta samples for testing in labs, and; conducting premix reconciliation. This was because of shortages of workers in the initial months of the lockdown. The shortages stretched the capacity of existing workers as they prioritised meeting production targets over compliance to quality control. It is limping back to normal.



## 3 HOW DID COVID-19 IMPACT THE WILLINGNESS OF MILLS TO ADOPT FORTIFICATION?

Millers and retailers tend to look at what industry leaders in milling and retail (such as ITC and Dmart) do to adopt anything new. Before the pandemic, only a handful of industry leaders fortified their atta, that too in a piecemeal way, despite a strong push by the Food Fortification Resource Centre (FFRC).

The pandemic has had a **dual effect** on the willingness of mills to adopt wheat flour fortification. Millers were not keen to adopt wheat flour fortification in the initial months. They were too stretched financially and operationally to consider something new such as fortification, especially on their own, without any support. We delayed our outreach to new mills at this time.

We saw this change over time as lockdowns eased. We believe it is because the pandemic has revealed the importance of investing in health and nutrition. Millers and retailers perhaps see fortification as a value addition to their products, and those who survive the economic losses from the pandemic could be more willing to adopt fortification as they see a market for it. A large part of this depends on how industry leaders, both in milling and retail, show the way. If they fortify their staples, including atta, others will follow.



# NEXT STEPS

## What can we do now to encourage atta fortification?

At this critical juncture, it's important to move the needle on atta fortification for open markets and government safety net programs. **We recommend a few key steps that we can take based on our conversations with millers, retailers and industry experts.** These suggestions have circulated for some time but it is critical to push forward on them if we intend to tackle anaemia at scale:



**Increase consumer awareness:** Low consumer awareness about the benefits of fortification is the largest constraint in expanding its coverage. Increased consumer awareness will expand the market for fortified atta, and incentivise mills to adopt and invest in atta fortification for their open market supply. FSSAI-FFRC is promoting the +F logo in fortified staples but the coverage of fortified atta in open market is still low. One way of doing that is for state governments to adopt fortification as a complementary strategy in their safety net programs and invest in advocacy about the health benefits of it to consumers and stakeholders in the supply chain. A good example of this is the rice fortification program in 15 states. The government of India, Niti Aayog, FFRC and 15 state governments are scaling up rice fortification in the public distribution system (one district per state). This is a significant step in the right direction, and the next step is for this effort to be extended to wheat flour.



**Incentivise millers:** Millers/retailers/consumers can be incentivised by lower goods and service tax (GST) on fortified staples.



**Mandate fortification:** Similarly to mandating salt iodization, which significantly reduces iodine deficiency, it is important that the Government of India mandates iron fortification in staples like atta. This should go hand-in-hand with investments in robust infrastructure for quality control such as labs that do iron testing in India.

The pandemic has disrupted atta supply chain and fortification of atta in Maharashtra, but it has also raised awareness about investment in health and nutrition. As millers come out of pandemic induced operational challenges and slumps in demand, they may be more open to atta fortification than ever before. We see some evidence of this in Maharashtra in our miller outreach. But they will be open to it if there is a sustained interest in it- both in the open market and government programs or if it is mandated. Either way, **the time to act is now.**

REFERENCES

- [ 1 ] These include social/emotional functioning and poor performance on specific neurocognitive tests although causality is yet to be established.
- [ 2 ] The precise impact of COVID-19 on incidence of anaemia is not yet known; data collection and in-person surveys are on hold. It will be a while before we can quantify the impact of COVID-19 on incidence of anaemia in India since there are no plans yet for the next round of nationally representative data collection on health and nutritional indicators like NFHS, CNNS etc.
- [ 3 ] The study was conducted by PHFI, T Chan Public School of Health (Harvard) and Center of Sustainable Agriculture (CSA), Hyderabad.
- [ 4 ] The study uses survey data from agricultural households in wheat-producing states of India.
- [ 5 ] The study by PHFI, T Chan Public School of Health (Harvard) and CSA, Hyderabad, show that 57% wheat farmers incurred increased transport cost to take their produce to the nearest market/trader compared to last year.
- [ 6 ] Mechanized mills refer to industrialized mills where machines are used to clean, treat and grind wheat grains into flour. Mechanized mills process wheat grains ranging from 2 MT a day to over 1000 MT a day. In contrast capacity of non mechanized mills is below 1 MT/day and most of the grinding is done by hand operated stone grinder.
- [ 7 ] In Maharashtra around 30% of wheat flour consumed from the open market is centrally milled (FFI 2011-12).



# INSIDE INSIGHTS

## AT FORTIFY HEALTH

