



# Summaries of all India meetings

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## Acronyms

<b>MDM</b>	Midday Meal scheme
<b>PDS</b>	Public Distribution System
<b>ICDS</b>	Integrated Child Development Services
<b>FRK</b>	Fortified rice kernel
<b>BCC</b>	Behaviour change communication
<b>FSSAI</b>	Food Safety and Standards Authority of India
<b>FFRC</b>	Food Fortification Resource Centre
<b>FFI</b>	Food Fortification Initiative
<b>NI</b>	Nutrition International



## Background information

### India's safety net programmes

Before summarising learnings from our visit, it is important to understand the government-led safety net programme system in India. This will prove useful with further understanding of the many different routes available to us in our forwards journey of iron and folic acid fortification in the Indian food system.

Namely, there are **three large-scale food security programmes** that come under the social safety net programmes, each of which caters to different beneficiaries:

**1. Midday Meal Scheme**

The [Midday Meal Scheme](#) (MDM) in India is a government-funded programme that provides every child between six and 14 years old in public schools with a hot meal at lunch time. Its aim is to improve enrollment, retention and attendance of school-aged children, as well as to improve their nutrition. MDM falls under the responsibility of the Ministry for Education.

**2. Public Distribution System**

The [Public Distribution System](#) (PDS) is the widest-reaching of the safety net programmes; under the National Food Security Act (NFSA), 2013 total coverage under PDS has gone up to 75 percent for the rural population and up to 50 percent for the urban population at national level.<sup>1</sup> PDS is responsible for the widespread distribution of staple food grains, including wheat, rice, sugar and kerosene. Dependent on economic status, recipients receive different quantities of staple foods. PDS falls under the responsibility of the Ministry of Consumer Affairs, Food and Public Distribution.

**3. Integrated Child Development Services**

[Integrated Child Development Services](#) (ICDS) target children under six years old and pregnant and lactating mothers. It provides a range of supplements, take home rations, meals and nutritious food items. ICDS falls under the responsibility of the Ministry of Women and Child Development.

### Cost estimates for fortification of food vehicles in India

Estimated marginal costs for the addition of micronutrients to staple foods as provided by the Food Fortification Resource Center / Food Safety and Standards Authority of India:

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<sup>1</sup> <http://ffrc.fssai.gov.in/ffrc/pds>



	Oil	Milk	Wheat	Rice	Double Fortified Salt
Cost in INR (paise / kg)	10-12	<2	8-10	30-40	200-300
Cost in USD (cents / kg)	0.15 - 0.19	0.031	0.12 - 0.15	0.46 - 0.62	3.09 - 4.64
Annual per capita consumption (kg / person)	12-18	123	60 (ranges widely by state)	70 (ranges widely by state)	2.56-3.29
Annual cost (cents / beneficiary)	1.8 – 3.4	3.8	7.2 – 9.0	32.2 - 43.4	7.9 – 15.3
Max dose delivered	~25-30% RDA vitamins A and D		~33% RDA of included micronutrients**	~38% RDA of included micronutrients**	30-60% EAR of iron, 100% EAR of Iodine
Micronutrients possible to include in food vehicle	Vitamins A and D	Vitamins A and D	Iron; vitamins A, B1, B2, B6, B9, B12;* Niacin, Zinc	Iron; vitamins A, B1, B2, B6, B9, B12;* Niacin, Zinc	Iodine, Iron

\*B1 = Thiamine, B2 = Riboflavin, B6 = Pyridoxine, B9 = Folic Acid

\*\*Standards require at least Iron, B9, and B12 to be delivered together in fortified wheat flour and rice.

## **Overview of wheat flour production and distribution industry in India**

There are three types of wheat flour consumed in India; atta, maida and suji, with atta having by far the highest demand.

In India, the wheat flour production industry is fragmented and milling can occur at various levels, dependent on the setting. This means that wheat grain can either be milled at village level, in medium-scale mills or in large industrial mills.

- **Chakki mills:** Process about 50 percent of wheat in India. Chakki mills are also known as local chakki mills or stone grinder mills. Under the Public Distribution System (PDS), wheat is generally distributed in grain form, as opposed to flour form. Recipients of wheat in PDS take their wheat to their local village miller, called a chakki miller, where their wheat grain is ground into flour. Chakki mills are often preferred given the texture of the grains, the norm of milling one's own flour, and the short shelf life of flour (often only four to six weeks due to a combination of factors including moisture content, presence of insect eggs, etc.).
- **Commercial chakki mills:** Centralise stone grinding equipment at mid-size operational scale but use the same general approach in stone-grinding grains.



- **Roller flour mills:** Use different technology to mass produce flour from grains. Although these are less common, the total output of any one facility is often substantially larger, and the costs per kilogram of flour milled are substantially lower.



## Highlights from meetings

Although this is not a complete report of our interactions with other organisations, it highlights the key information gleaned from our conversations. Please forward along further questions as our rough notes are more extensive than these summaries.

### **Food Fortification Resource Centre**

The [Food Fortification Resource Centre](#) (FFRC) is established under India's government department that regulates food, known as The Food Safety and Standards Authority of India (FSSAI) in collaboration with TATA Trusts. The FFRC works dedicatedly to provide essential support to stakeholders like relevant government ministries, food businesses, development partners etc., promoting and supporting food fortification efforts across India. The team is comprised of approximately 10 to 12 members.

In 2016, FSSAI issued operational standards for fortification of food across India. As of now, the standards have been issued for milk, edible oil, wheat flour, rice, and double fortified salt. The Standards for processed foods are underway.

According to FFRC, fortification of milk and oil are the low hanging fruit in fortification (with vitamins A and D). This is largely because there is no technological challenge in the fortification process and the production industries are less fragmented than in, say, wheat flour production.

We discussed the minutia of different food vehicles and different strategies to promote fortification. Milk and oil fortification is voluntarily now becoming an industry norm, whereas rice and wheat flour fortification needs more investment from various stakeholders. Double fortified salt <sup>[BE1]</sup> <sub>[u2]</sub> supplies are enough to cover the government programmes, although open market availability needs capacity building. There also remains the need for improved quality assurance, improvement of laboratory capacity for quality assurance, consumer education, and demand generation.

We also received guidance on location selection, including consideration of most vulnerable districts, neglect of north-eastern states, etc. It was suggested that in order to implement a project in north-eastern states, the following routes may be beneficial: a) coordinate with local partners, b) reach out to state decision makers, c) visit state and carry out supply chain mapping to assess feasibility, d) prepare a detailed report, e) offer recommendations to state, f) install fortification equipment, and g) allow states to scale. A member of FFRC has been identified as responsible for scaling up fortification across each State. There are stronger incentives for north-eastern states to take on some of these costs due to cost sharing mechanisms (e.g. 90 percent budget could be met by central government in contrast to other states where it is closer to 50 percent).

We had an extensive discussion of the merits of working with rice vs. wheat that largely aligns with what is presented elsewhere in this document. Wheat challenges centre around fragmentation of industry.



Rice is challenging due to more complicated multi-step supply chain. FFRC sees the push for rice in the social safety net programmes as a good one, given that other grains may be distributed besides wheat flour. They also pointed out the challenges in working in the PDS system and the concerns that in MDM, wheat flour is not necessarily served daily even in wheat eating states given that rice is easier to prepare at scale. Centralisation/modernisation of the wheat industry is a prerequisite for large-scale flour fortification. If we were to work in flour fortification, suggested target states can be Madhya Pradesh, Punjab, Rajasthan, and Haryana.

#### **Recommended areas of collaboration:**

- Boosting consumer education and demand generation of fortified foods by developing evidence-based consumer strategies
- Filling the gap in wheat flour fortification
- Supporting laboratory capacity building for compliance and quality testing of oil and milk fortification
- Accelerating scale-up of double fortified salt (DFS)
- Expanding rice fortification efforts

FFRC spoke about states that have been very difficult to infiltrate, due to decisions of the State, budget constraints and resource crunch [BE1] [u2] because of state-level political disengagement with fortification. There are several approaches that could be trialled to try to overcome the political barrier in rice fortification: provide states with rice blenders, strengthen millers and support local development of machines.

## **PATH and Akshaya Patra Partnership**

### **PATH's work in fortification**

[PATH](#) has been working on fortification in India since 2005. The team currently comprises three full time staff. Although PATH is a large organisation with projects in 68 countries, fortification in India accounts for under 10 percent (estimate) of the India budget, which is otherwise heavily focused on vaccination and tuberculosis. PATH's present work on fortification centres around rice fortification, which involves manufacturing fortified rice kernels (FRKs), and blending them with regular rice kernels. PATH has operations in Gujarat and Chandigarh, and their biggest presence is in Karnataka, where they are working in six state-level [Akshaya Patra Foundation](#) kitchens under the Midday Meal (MDM) scheme. The typical kitchen feeds between 100,000 and 150,000 children per day, six days per week. Akshaya Patra operates in [Andhra Pradesh, Assam, Chhattisgarh, Gujarat, Karnataka, Odisha, Rajasthan, Tamil Nadu, Telangana, and Uttar Pradesh.](#)

To ensure nutritional effectiveness, they partner with behaviour change communication (BCC) experts, [Karuna Trust](#), who implement BCC in schools and educate teachers/children on WASH and nutrition. PATH also partners with [Sight and Life](#) to research and develop BCC materials and strategy.



**Supply chain for the FRK:** PATH's fortified rice kernels are produced by third party vendors by warm extrusion of rice flour and micronutrient premix. Then FRKs are transported to the Akshaya Patra kitchens, where they are mixed with the regular kernels using blending technology (at a 1 FRK: 100 regular rice kernel ratio) and distributed in meals to schools across Karnataka. Quality assurance occurs in a FSSAI certified lab every six months and is also completed voluntarily each month. The costs for the FRK depend on which micronutrients are provided, ranging from approximately 55 INR (0.85 USD) per kg for iron, folic acid, and vitamin B12 to approximately 100 INR (1.55 USD) per kg for the full set of nine micronutrients included in the FSSAI approved standards. Back of the envelope calculations suggest that the cost of FRK alone per beneficiary receiving 100g of blended rice 240 days per year is about \$0.20 (iron, folic acid, B12) and \$0.37 (all nine micronutrients). Children in grades 1 to 5 are meant to receive 100g of blended rice, whereas children in grades 6 to 10 receive 150g; therefore their FRK costs per beneficiary are approximately \$0.30 and \$0.56 respectively. PATH's model includes partnership with the state government to provide technical support and also demonstrate introduction of rice fortification wherever required by subsidizing the FRK costs for a limited time and then transferring the project to the state government for scale-up through the state's own resources.

**Fixed costs:** The primary fixed cost associated with PATH's MDM rice fortification projects is the procurement and installation of blending equipment. At the facilities we visited, this equipment cost approximately 70,000 USD for a kitchen serving 100,000 students six days a week while school is in session.

**Operating costs:** PATH continues to provide technical support to various organisations along the supply chain, particularly to the FRK producers to improve the quality of their FRK. The implementation team responsible for on-site blending and management would consist of five people, costing approximately 13,000 to 15,000 USD per year.

**Overall costs:** Amounted to approximately \$400,000 over two years to equip and provide fortification in an MDM Akshaya Patra kitchen in Karnataka. PATH estimates an investment of 2.5 to three million USD would be necessary to scale up fortification in all Akshaya Patra kitchens across the eleven states in which they work. A Public Distribution System (PDS) rice fortification pilot would be more expensive than an MDM pilot and might require one to two million dollars for one state over a three year project if it could then be continued by the government.

**Concerns:** We remain concerned that the dosing of the micronutrients may be inadequate considering that these standards were developed around a platform for universal fortification rather than one daily meal for school-age children, though this is a common concern across projects by various actors across the states. Other organisations have concerns about the fitness of the FRK used in other schemes, which are best summarised under the Food Fortification Initiative section of this document.

**General information:** Our conversations included information on the supply chains themselves, barriers to implementation in PDS, the political processes to gain approval for fortification demonstration projects and endurance of these programmes under state support. PATH indicated that states would require an in-state demonstration project before mandating a full coverage fortification effort in a



particular government programme (or the open market). Increased coverage of fortification will need to occur at the state level (even with the support of the central government's FFRC/FSSAI). PATH sees limited importance to producing more evidence that fortified rice provides health benefits given that evidence exists and the central government is supportive. We also developed a deeper understanding about the production of FRKs, quality improvement, and market strategies. PATH believes each state will require independent efforts and it must be done properly to avoid generating enduring negative beliefs about rice fortification.

**Why focus on rice over flour:** Rice is more centrally processed and more widely consumed across India. No behaviour change is necessary for rice fortification, whereas a shift away from chakki mills would be necessary for widespread flour fortification to work. The most vulnerable people may already be those with most limited access to industrially milled flour. However, fortified rice is more expensive and the appearance of FRKs may lead to consumer rejection on the market.

**Guiding us:** We asked how we could best contribute over a few years with a reasonable budget. They suggested implementation of a rice fortification demonstration project in MDM (two years) or PDS (three years), with the former being more feasible as a first project.

**PATH suggested that Fortify Health could contribute by:**

- Expanding PATH's FRK to other states. States recommended by PATH for future rice fortification programmes include Andhra Pradesh, Uttar Pradesh, Madhya Pradesh, Maharashtra, Telangana\* and Assam\*.<sup>2</sup>
  - Dependent on modelling outcomes, there are several ways we could expand the FRK to new states. We could focus on bringing FRKs to PDS or MDM in untouched states; it may be advisable to try PDS in a state with a generally more receptive government to new programs, and MDM in a state where the government has a reputation for being less receptive. This is because PDS has proven much more difficult to infiltrate and has not yet successfully been implemented, whereas MDM is much more structured, tractable and controlled, and less subject to corruption. PDS would also involve much more BCC focus surrounding the appearance of the FRK and ensuring its acceptability among those cooking with fortified rice; MDM, on the other hand, involves pre-cooked meals where the FRKs' differing appearance goes unnoticed.
- Working on FRK product development
- Providing monitoring and evaluation services for existing implementations
- Boosting demand generation or providing BCC support as part of a portfolio of strategies.

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<sup>2</sup> \*Higher risk working with these state governments, but potentially higher impact if these are lower on PATH's radar





## **GAIN**

“You can wake a sleeping person. But you cannot wake a person pretending to sleep.” - Deepti Gulati, on lobbying

### **GAIN’s work in India**

We spoke predominantly on wheat flour fortification with Deepti Gulati, Head of Programs for [GAIN India](#); we learned about the difficulties in wheat flour fortification, but have also not been deterred by them.

GAIN India works in oil, milk and wheat flour fortification. GAIN has been successful in expanding oil and milk fortification, and has been working with the national government and advocating for mandatory fortification of oil. GAIN is currently implementing scale-up of oil fortification in eight states: Rajasthan, Gujarat, Maharashtra, Madhya Pradesh, Haryana, Punjab, Andhra Pradesh and Telangana, with an aim of reaching 300 million people with fortified staples over the next four years. Their recent focus on oil and milk has been largely guided by high incidence of vitamin A and D deficiencies in India and its relative ease of implementation, cost-effectiveness, and funding made available by the Bill and Melinda Gates Foundation and Dutch Grant. GAIN suggested that a significant factor in prioritising oil was that ten times as many beneficiaries can be reached per dollar compared with wheat flour projects. GAIN recognises the need to address anaemia, as another major micronutrient deficiency, through wheat flour fortification, which is more challenging.

### **Wheat flour fortification**

GAIN would like to advocate and work with the State Governments to mainstream fortified wheat flour in India’s Public Distribution System (PDS). GAIN’s project of rolling out wheat flour fortification in districts in Rajasthan was initially successful, but lost traction after the National Food Security Act (NFSA), 2013. Prior to NFSA, the population covered under the “Below the Poverty Line” (BPL) and “AAY (Ultra Poor)” category, comprised about 26 percent of India’s total population. These categories were given wheat grains at a highly subsidised price (at INR 4.35/ kg). Considering the high levels of anaemia, the Government of Rajasthan agreed to provide fortified wheat flour instead of wheat grains to BPL and AAY beneficiaries without charging the conversion cost. However, after the implementation of NFSA, the population coverage increased from 26 percent to over 62 percent and the cost of grains was reduced to just INR 2/kg of wheat grain. At this rate and an increased coverage (almost 2.5 times more than what was covered under BPL / AAY), it became untenable to provide fortified wheat flour instead of wheat grains, under the NFSA.

As per the letter issued on 3 November 2014 and its reiteration in another follow-up letter issued on 22 December 2016, the Department of Food and Civil Supplies, Government of India reiterated that the State Governments could provide fortified wheat flour instead of wheat grains under the NFSA, and pass on the reasonable cost of such conversion to the consumer beneficiaries, if the consumers agreed to pay the cost of conversion or if the respective State Governments agreed to bear the conversion cost.



At the behest of the Government of Rajasthan, GAIN conducted focus group FGDs in selected districts and submitted a report to the Government which stated that consumers were ready to pay the conversion cost. But the State Government is weighing the political implications before taking a decision to pass on the cost of converting grain to fortified wheat flour, to the NFSA beneficiary consumers.

Recently, both the Ministry of Women and Child Development and Ministry of Human Resource Development, Government of India, issued circulars on 10 July 2017 and 2 August 2017, respectively making it mandatory to use fortified wheat flour and fortified edible oil in the preparation of ICDS supplementary food and the mid-day meals for school feeding.

GAIN is nudging the private industry into food fortification, as it will give them a market advantage as the government is promoting the use of fortified products in the public funded programmes. GAIN also pointed out that within India, anaemia is universal, cutting across different states and socio-economic groups. Off the cuff estimates by GAIN suggested that in a population where 70 percent of children and 53 percent women suffered from anaemia, wheat flour fortification in states where it is implemented universally, could lead to a drop to around 35 percent when paired with deworming, and that even without deworming, up to a 25 to 30 percent drop may be possible. GAIN also mentioned that there is virtually no risk of excessive iron consumption on consuming fortified wheat flour, as food is self-limiting and it is nearly impossible to consume such huge quantity of food that may lead to excessive iron intake.

GAIN sees opportunity for us to provide equipment to rekindle fortification efforts at medium-scale wheat flour producers. Back of the envelope calculations suggest that microdosers costing approximately 2,000 USD each, could be sufficient for a mill producing approximately 1,000 MT of flour each month, benefitting approximately 160,000 people. GAIN sees themselves as funding constrained on wheat flour fortification, where they would like to see projects in 18 states but cannot, for the want of funds.

**Note:** GAIN feels that if the wheat flour industry is funded for micronutrient premix support for one year, on a sliding subsidy, wheat flour fortification for sale in the open market channels, could gain relatively quicker traction but continuation of wheat flour fortification by the wheat flour industry, upon the phasing out of micronutrient-premix support would remain a speculation.

If subsidizing premix, we should consider the potential for having the unintended consequence of decreasing willingness to adopt fortification practices without subsidies in surrounding areas.

Referencing difficulties in implementation of wheat flour fortification, GAIN shared some of their lessons learned. Both full and sliding subsidies on premix do not work so well for the long term of a programme; they become unsustainable and when the funding for premix stops, interest in continuing fortification by industry has been shown to drop off. Sliding subsidies are still much better than wholly funding premix. It is perhaps advisable to ensure premix is self-funded by governments and industries from the outset. Furthermore, the central government would like to convince states there is sufficient evidence that new evidence generation is not necessary to go ahead with fortification projects. Wheat flour fortification is widely acceptable, that there are no organoleptic changes, and that the industry is



responsible and takes pride in investing in nutrition. Even so, prioritisation of fortification at a state level is challenging. A model of supportive regulatory monitoring (rather than punitive) may be the most promising. Flour shelf life remains a concern as unprocessed grains will dominate unless shelf life of wheat flour is improved (if moisture content is lowered). Universal mandatory fortification of staple grains is still far off on account of highly fragmented nature of wheat flour industry, regulatory mechanisms and concerns, but mandatory oil and milk fortification is within reach, perhaps as soon as within the next six to 12 months, as the edible oil and milk industry is fairly well aggregated and organised.

**Other micronutrients:** We also developed a better understanding of why supplementation programmes have not had much traction (requiring behaviour change, education around side-effects, wide-coverage, etc. that has not yet been as successful at scale, as is expected). For example, iron and vitamin A supplementation programmes are estimated to reach only about 55 percent of children.

**GAIN suggested Fortify Health could contribute by:**

- Providing microdosers to medium-scale flour millers. Microdosers are the technology used to accurately blend the micronutrient premix with the wheat flour. One microdoser costs approximately 110,000 INR, and produce 30 to 50 metric tonnes per day, enough for approximately 160,000 people's diet. States we could implement this approach would be Haryana, Punjab, Gujarat, Madhya Pradesh, Maharashtra, Rajasthan, Chandigarh and Uttar Pradesh and Delhi
- Continuing a sliding subsidy scheme in Rajasthan for mills that dropped out of GAIN's original project; these millers may still have equipment but are not purchasing or receiving premix. This could be highly cost effective, as funding premix would not be very expensive even if at odds with strategic efforts that don't fund premix directly
- Advocating for PDS wheat flour fortification and/or implementing a demonstration project could be a good start

## **World Food Programme**

Because of India's population and potential for programme scale, improvements to its systems can change the world statistics in various sectors.

World Food Programme (WFP) is supporting rice fortification efforts in India and has expertise in implementing pilots. From 2012 to 2015, WFP conducted a rice fortification pilot in Odisha; unlike PATH they took on a decentralised approach to rice fortification.

Summary of rice fortification process: "The rice is fortified with Fortified Rice Kernels (FRK), which are manufactured by combining rice powder with iron and converting this powder into rice-like kernels using cold-extrusion technology. The micronutrient fortified rice kernels closely resemble the sheen,



transparency, consistency and flavour of rice. The fortified kernels are then blended at a ratio of 1:100 with the ordinary rice provided by the Government of Odisha.”<sup>3</sup>

In 2017 WFP published a report on [A Case for Fortified Rice](#), outlining the results of their pilot in Gajapati, Odisha. WFP are working to move away from conducting pilots and to begin implementing full, large-scale programmes. However, when approaching new states, this proves difficult, because states generally request a pilot relevant to their particular state before implementation of a full programme. An advocacy model alone does not work in India; a multifaceted approach is required when it comes to acceptance and implementation of fortification programmes.

**World Food Programme thinks Fortify Health could contribute by:**

- Training millers in wheat flour fortification, with one core staff member being in-state and/or someone to sit in government as a catalyst
- Expanding rice fortification efforts to new states

## **Food Fortification Initiative: Venkat Subramanian**

The Food Fortification Initiative (FFI) is far more focused on stimulating macro-level change and sees the future of food fortification depending on industrial adoption of high-quality fortification. This perspective is further elucidated in the summary of conversations with Scott Montgomery, director of FFI.

**On rice fortification:** In this conversation, we investigated the concerns FFI has with the extrusion technology used by some development agencies. The primary concern is that these fortified rice kernels are of poor quality due to business decisions guided by cost effectiveness to use cheap extrusion equipment sourced from China. He points out that the \$30,000 equipment can't possibly match the quality of a \$400,000<sup>4</sup> alternative. The primary concerns with quality surround aesthetic quality (the appearance of the grain, whose shape, texture, and colour may differ from unfortified grains and be avoided by the consumer) and functional quality (the grains may not retain micronutrients in absorbable form). The aesthetic concern is mostly relevant to open market channels and the public distribution system (PDS) and should not affect prepared foods (such as in the Midday Meal scheme) where preparation and cooking are strictly controlled.

**On wheat flour fortification:** Although it does not present quality issues, wheat flour fortification is difficult due to supply chains, principally the reliance on local chakki mills. The open market wheat market is highly competitive, without incentives for fortification (even at 0.25 INR / kg, \$0.004/kg). Furthermore, shelf life of centrally produced flour remains an issue, in part due to the disincentives to

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<sup>3</sup>[http://documents.wfp.org/stellent/groups/public/documents/newsroom/wfp267098.pdf?\\_ga=2.200750830.1194417736.1517837778-1786853025.1512489407](http://documents.wfp.org/stellent/groups/public/documents/newsroom/wfp267098.pdf?_ga=2.200750830.1194417736.1517837778-1786853025.1512489407)

<sup>4</sup> This relates to the extruder only, there are many more components in an extrusion line.



sell at lower moisture content (say 10 percent rather than 12 percent) given that it is sold by weight yet spoils faster when wet.

Venkat suggested that fortifying one ton per hour yields a great story about someone getting fortified food, but that's smaller than the smallest industrial mills he works in. His focus is on scaling to 10 times that capacity. Smaller pilots help to shape regulation and show it's not harmful, but the scale and capital available is substantially higher in industry. Even so, industrial fortification efforts have been highly neglected by existing actors.

**FFI thinks Fortify Health could contribute by:**

- Strengthening funding directed to lobbying efforts
- Communicating need for large-scale over small-scale change

**Food Fortification Initiative: Scott Montgomery**

FFI has been largely focused on advocacy for large-scale fortification reform, such as the recent adoption of technical standards for fortification by FSSAI. It has been working to advance industry partnerships, but without ultimate success to date. They aim to expand access to fortified foods at scale through the open market or PDS. Their India operations are presently limited to an annual budget of approximately \$150,000. Their team in India includes two principal members and a consultant. FFI also carried out an in-depth review of the industry and performed a state-level analysis in order to suggest priorities for action.

Scott also provided an extensive introduction into the food landscape in India, which included data on consumption of different forms of fortifiable foods across the country, and the different processing pathways they take. He also provided thorough background on the state-level analyses performed and the prioritization matrix used. These states were then scored on the basis of health impact and ease of implementation for each food/strategy. Although we will not provide a comprehensive summary here, PDS flour fortification in Maharashtra or Madhya Pradesh emerged as high priority targets.

FFI's primary limitations are staff and money, and they seek to add value in large-scale strategy and supply chain design rather than in further small-scale demonstration projects.

**FFI thinks Fortify Health could contribute by:**

- Communicating need for large-scale over small-scale change
- FFI is open to other suggestions and is currently re-evaluating fortification role in India

**Nutrition International**

To be reviewed and updated