

ASHA Position Paper on Mandatory Fortification of Foods in India

This position paper has been written by the Alliance for Sustainable & Holistic Agriculture (ASHA) in the context of mandatory fortification of foods like edible oil, milk and proposal for the same for rice in India. Whilst we agree with Food Safety and Standards Authority of India (FSSAI)'s diagnosis that India faces a huge nutritional challenge, we strongly disagree with its prescription. This prescription in fact has been borrowed from elsewhere, where the food and farming systems are different whereas India is in a position to formulate its own solution pathways for problems that are uniquely Indian.

Background

Food fortification is addition of micronutrients (not available naturally) to foods, either in the food production process ("bio-fortification", through crop breeding technologies) or in the post-harvest stage during processing. Mandatory fortification is when a government legally requires that such fortification be complied with by all players in the market, for all foods for which such fortification is made compulsory. This is assumed to provide required or missing micro-nutrients to consumers / malnourished people in their diet and achieve a public health benefit. This is often taken up without a full understanding of the nutritional problem, its extent and severity on different demographic and geographical groups, and without monitoring capabilities or monitoring objectives for outcomes. It is to be understood that food supplements are different from fortified foods. And both food fortification and supplementation are reductionist approaches compared to more holistic approaches towards nutrition security. Such reductionist approaches to nutrition have a tendency to further strengthen some negative trends in our food and farming systems, of increased monocultures and processed foods – which in turn leave greater space for profiteering corporations instead of supporting small livelihoods-, rather than address the underlying issues in fundamental positive ways. Food fortification as an industry-promoted concept actually erodes India's efforts at *atma nirbharata* at all levels.

Concerns with Food Fortification

1. Benefits of Fortification Not Adequately or Conclusively Proven

Food fortification as a public health strategy is too simplistically adopted, without adequate or conclusive evidence of the benefits. The usual example cited in its defence is that of iodised salt. Such a limited example cannot justify mandatory fortification of essential, majorly consumed foods. Studies show that benefits of rice fortification are still unproven – and must undergo greater independent research and field studies before its mandatory usage can be considered safe and beneficial. For instance, a global meta-analysis on fortification of rice ^[1] with vitamins and minerals for addressing micronutrient malnutrition which included 17 studies in 4 continents (including 4 studies in India) came to the conclusion that – "Fortification of rice with iron alone or in combination with other micronutrients may make little or no difference in the risk of having anaemia. Fortification of rice with iron and other micronutrients such as vitamin A or folic acid may make little or no difference in the risk of having vitamin A deficiency or on the serum folate concentration". Data shows that despite fortification programs, micro-nutrient deficiencies continue to be prevalent. Without bio-availability (which in turn is influenced by several variables which are often not addressed in the fortification program), food fortification has limited outcomes.

2. Risks of Food Fortification Not Adequately Addressed

Fortification should not lead to imbalance of essential nutrients, should ensure that the nutrient is physiologically available from the food, and should reasonably assure against intakes to levels of toxicity. There are concerns around Overdose, which is a major issue with mandatory fortification in that it does not discriminate for dosage within a given population. It provides additional nutrients to everyone without assessing whether it is even needed in the consumers or not. This is supposed to be a greater concern in children, especially when fortified foods are being consumed along with supplements. Also, nutritional experts feel that there is not enough knowledge about risks of nutrient intake beyond recommended upper limits. There are also concerns about the blending processes in fortification adversely affecting protective substances such as phyto chemicals and polyunsaturated fat in natural foods.

Further, when it comes to bio-fortification using gene technologies in breeding, there are several health risks that are predictable, given the scientific evidence that exists about adverse impacts of genetically modified foods.

3. Hands over Huge Market to Foreign Companies

[Reports](#) indicate ^[2] how fortification is a market of around Rs. 3000 crores for just five big multinational companies that manufacture micronutrients from whom others import (Germany's BASF, Switzerland's Lonza, France's Adisseo, & Netherlands's Royal DSM and USA-based ADM) and how rice fortification alone will create an assured market of Rs. 1700 crores because its process is costlier than other items. This will also threaten livelihoods of small rice and oil processing units across the country and goes against the drive to make India and her people self-reliant.

4. Regulatory Decision-Making Being Compromised

Industry groups like GAIN (Global Alliance for Improved Nutrition) with which FSSAI's Food Fortification Resource Centre works on fortification should not be involved in regulatory institutions and processes at all, including in any assessment related to food fortification. GAIN has companies like BASF, Royal DSM ^{[3][4]} amongst others, which carry a serious conflict of interest in that they benefit from the huge market to be gained from fortification and their involvement with FSSAI is highly objectionable. Further, in Poshan Abhiyan and other initiatives, the involvement of Bill and Melinda Gates Foundation (BMGF) is highly objectionable given their vested interest in a particular paradigm of farming and food systems.

5. Small Producer and Processor Livelihoods Endangered

When mandatory fortification is chosen as a policy / regulatory decision, it endangers the livelihood options that exist for small producers and processors. For instance, farmers who would like to sell their produce directly to consumers will be affected adversely with mandatory fortification requirements. Similarly, small processors especially of better foods (safe food and nutritious food) like hand-pounded grains or cold pressed oils, will be directly impacted by mandatory fortification policies and will be eliminated from the market. That would be quite unfortunate given that they seem to have solutions which are not just livelihood solutions for themselves, but solutions around food safety and nutrition.

6. Neglect of Structural Factors & Erosion of Diversity and Nutritional Value of Foods

The root causes for the nutritional problem confronting us lie in structural issues of social justice, and related access to productive resources, purchasing power etc., amongst the malnourished. Further, it is the intensive agricultural paradigm adopted and promoted by the government and the markets that has led to erosion of valuable food and varietal diversity which, coupled with depletion of nutrients in our soils, in turn affects the nutritive characteristics of our food. Data from National Institute of Nutrition shows how our food's nutritional quality is reducing rapidly.^[5]

Instead of tackling such root problems, mandatory large scale fortification solutions will further deepen this vicious cycle, further erode our biodiversity, pushing monocultures and depleting soil health.

Real Solutions

We need a holistic approach to be adopted while tackling malnutrition some of which are listed below.

Changes in Agricultural and Forest Development Paradigms: Agricultural diversity being revived, along with improving of soil health itself, kitchen gardens providing dietary diversity and uncultivated / forest food pathways need to be emphasised as primary approaches, based on traditional varieties of crops, agro-ecological ways of managing soil fertility, and integrated farming systems approaches in agriculture with livestock and fisheries integrated in farming as well as diets. For children, diverse, safe and hot-cooked meals given as part of ICDS, MDMS as well as PDS become important.

Kitchen Gardens: Kitchen gardens and even urban food gardens are gaining popularity. A study in Maharashtra had shown how vegetables grown in organic kitchen gardens have been found to increase haemoglobin levels.^[6] In studies across the world, this has been found to have benefitted in increase in various micronutrient parameters as well. The benefits go beyond just health benefits to economic benefits (by helping reduce expenditures on purchase of vegetables), improved immunity and reduced medical expenses, greater inter-generational connect and more learning opportunities on principles related to soil, biodiversity, plants and human nutrition. Unlike other technological solutions, these have been found to have greater acceptance as they do not have side-effects, often reported in iron and folic acid tablets as well.

Breast Feeding: Breast feeding with proper latching techniques can make critical impacts on nutrition deficiency in the critical first 1000 days of a new-born.

Bran in diet: Whilst FSSAI pushes rice fortification, it misses that bran (rice, wheat) is a rich source of nutrition of various micronutrients including vitamins (including Vitamin B complex, Vitamin E) and minerals (including Potassium, Magnesium, Phosphorus, Iron, Manganese, Selenium, Copper, Zinc). Unfortunately, the polishing processes for rice and wheat over the last few decades have led to a decline of consumption of bran. High processing leads to a decline in nutrient content in crops. There is a need for widespread public education and inclusion of less-processed/unpolished rice in the PDS.

Nutrition-rich diverse varieties of crops: India has had a history of diverse grains, vegetables, fruits and other crops. Not only has there been an increasing monoculture in our

farms, there have also been fewer varieties of these crops in our farms and our food. These varieties have had diverse range of nutrition benefits. For instance, a nutritional composition study of garib-sal rice (which was once recommended for patients with gastro-intestinal infections) revealed that it has higher amount of Vitamin B complex and other micro-nutrients such as Iron, Zinc, Manganese and others.^[7] Fortunately work to preserve and revive these varieties has been going on. FSSAI needs to play a greater role in awareness building on these amongst consumers.

Giving production and processing of holistic nutrition solutions for income generation of poor women: As a livelihood and income generation option, women's self-help groups can be supported to produce, process and market local solutions like drumstick leaves powder, curry leaves powder etc. other than strengthening their participation in ICDS program all over India.

There are a whole variety of real, proven solutions for enhancing nutrition at lower costs than fortification, which India needs to promote along with relevant agencies/departments to help tackle the nutrition crisis in India.

Food Regulator's Role:

While FSSAI as a food regulator may not be able to directly promote the above holistic solutions, by easily assuming reductionist regulatory roles without assessment of benefits and risks, it cannot compromise on its own mandate either. This is more so given that regulatory capabilities of monitoring are limited. Regulatory decision-making by agencies like FSSAI should include a needs, benefits and alternatives analysis which will lead it to lasting, sustainable solutions. Regulation should also prevent conflict of interest especially of industry entities and keep out BMGF, GAIN and other such entities fully.

To conclude, Government of India and state governments must:

- Not push for mandatory food fortification (incl. of rice and oils) of doubtful benefit and potential harm
- Promote awareness, working with civil society and others who are working on low-cost, sustainable solutions such as agro-ecological farming, promotion of uncultivated foods, setting up of kitchen gardens, popularising bran in diet and revival of nutrition-rich diverse varieties of crops
- Launch a major awareness campaign on the importance of micronutrients and their availability in millets, microgreens, vegetables and fruits as awareness itself can alter behaviour beneficially

References

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