CHAPTER 6

RECOMMENDATIONS AND FUTURE SCOPE

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6.0. KEY RECOMMENDATIONS FOR IMPLEMENTING AND SUSTAINING SMALL-SCALE WHEAT FLOUR FORTIFICATION IN RURAL AREAS.

According to recommendations on wheat and maize flour fortification given by WHO, FAO and other organizations, fortification of cereals like wheat and maize flour is a preventive food-based approach to improve nutritional status of populations. It can be combined with other interventions like dietary diversification, micronutrient supplementation and public health measures etc. in the efforts to reduce vitamin and mineral deficiencies when identified as public health problems. Wheat flour fortification is considered to be one of the most economical approaches in achieving a public health goal to lessen the burden of micronutrient malnutrition, if it is mandated at the national level. Through this research study, following recommendations are made for implementing and sustaining small-scale wheat flour fortification in country. The recommendations have been categorized into 3 categories:

1. Policy Level Recommendations for Government
2. Technical Recommendations for Government or Implementing Organizations
3. Recommendations for Corporate Companies and Organizations

6.1. POLICY LEVEL RECOMMENDATIONS FOR GOVERNMENT

6.1.1. Convergence between Key Government Departments

Improving nutritional status of community especially women and children in rural and tribal areas is responsibility of all the concerned government departments instead of sole responsibility of any particular department. Since pregnant or lactating women, adolescent girls, under-five aged children and school children have more nutritional requirement thus

harmonization or convergence between key government departments like Health, Women and Child Development, Education, Food and Civil Supplies, Panchayati Raj etc. is required in order to make small-scale flour fortification scalable and sustainable. For technical support, government may seek support from fortification expert agencies as key stakeholders.

6.1.2. Policy on Small-scale Flour Fortification

Till date Government of India has formulated mandatory fortification policy for only Salt with Iodine and Vanaspati Ghee with Vitamin A. Wheat flour fortification was initiated by many State Governments like Andhra Pradesh, Delhi, Kerala, Madhya Pradesh, Rajasthan and West Bengal for supplying fortified wheat flour through Public Distribution System. The recently developed Food Fortification Resource Center under FSSAI has recommended not to universalize fortification of unpackaged and unbranded wheat flour in open markets ground at small-scale mills and promote fortification of branded and packaged wheat flour due to reasons like fragmented industry structure of small-scale mills as well as challenges of quality control. Since the coverage by branded packaged wheat flour is around only 5 percent and only 30 percent of wheat flour industry is organized. The remaining proportion is dominated by small chakkis, thus the FSSAI should relook its recommendations and help support in structuring an efficient model for regular monitoring and quality control of small-scale wheat flour mills through Fair Price Shops under Public Distribution System, which is responsible for distributing grains to end beneficiaries.

6.1.3. Mandating Usage of Fortified Wheat Flour in Safety Net Programmes

Under Mid-Day Meal scheme of Ministry of Human Resource Development, food grains i.e. wheat and rice are allocated to primary and upper primary schools based on the number of students studying in these schools. (100 grams per child in PS and 150 grams per child in UPS). In rural areas, the school management has to get these grains grinded from local small chakkis. Government should mandate these schools to get the wheat flour fortified by adding micronutrient into wheat while grinding at small

chakkis. Regular monitoring and quality control can be done by capacitating school teachers or MDM incharges in schools. This mechanism can ensure the introduction of fortified wheat flour into one of the government's safety net programmes. Ministry of Women and Child Development has recently (in 2017) issued a notice in this reference. As per the notice, Ministry has proposed to use fortified wheat flour in Mid-Day Meal and ICDS from December 2019 by capacity building of local chakki operators. This needs to be done in two phases. In first phase, it has been proposed to pilot the supply fortified wheat flour in those states where wheat flour is supplied though PDS and study the issues related to supply chain in MDM and ICDS. While in second phase, the supply of fortified wheat flour will be scaled up by taking learnings from phase I.

6.1.4. Social and Behaviour Change Communication for Using Fortified Wheat Flour

Prior to commencement of National Food Security Act in 2013, the state governments in many states were providing packed fortified wheat flour to community. But after the inaction of NFSA, governments started to provide subsidized food grains to approximately two-third of country population. Households get their monthly allocation from Fair Price Shops (FPS) under Public Distribution System and get their grains ground in chakkis. Various government departments like Medical and Health, Women and Child Development etc receiving annual budget for IEC, should utilize their budget for extensive social marketing of fortified wheat flour at these FPSs as well as in facilities like Health Centers, Hospitals, Anganwadi Centers, Panchayat Bhawans etc to make community aware about significance of fortified wheat flour. As these FPS have fixed allocated quantity of ration for households, thus government, may be through fortificant manufacturing companies, should utilize these shops as a platform to sell fixed and required quantity of micronutrient fortificant or premix sachets to community along with their monthly allocation. Such kind of system will motivate the households to get and add the micronutrient into

wheat while grinding at small chakkis with ease. Mijumbi (2011) has explained in his article that many international experiences show that government policy, standards, and regulations are critical and essential for establishing an environment that enables the food sector to invest, produce, and distribute quality, fortified products. Government is key to creating producer as well as consumer awareness, generating demands and shaping the market place with regulations and monitoring mechanisms.

6.2. TECHNICAL RECOMMENDATIONS FOR GOVERNMENTS AND IMPLEMENTING ORGANIZATIONS

6.2.1. Preference of Mechanized Dosifiers on Conventional Manual Mixing Process

Usage of mechanized dosifiers has been proved successful and effective in many small-scale flour fortification programmes across various countries. Such kind of, but cost effective and affordable, dosifiers should be preferred in India over conventional manual mechanism or direct “hand scoop” method in order to avoid any human error of mixing fortificant in inappropriate ratio. If any small-scale fortification programme is implemented in an area with larger population, usage of these dosifiers could be prolific as these have the capacity to fulfil the daily requirements of large segment of population.

Availability of Pre-blend in Sachets

Usually the pre blend (diluted micronutrient fortificant) for small-scale flour fortification programmes is made available by manufacturing companies in packages of 1 Kg or more. These 1 Kg of pre blend can fortify about 600 Kg of wheat flour depending on fortificant concentration in pre-blend. In addition to these large packaging of pre-blend, small sachets sufficient to fortify 1 Kg of wheat flour should also be manufactured and made available in markets so that people can buy and add into wheat grain while grinding.

6.2.2. Use of Ferric Sodium Ethylene Diamine Tetra Acetate

Many national and international research studies have been conducted with an objective to observe the impact of electrolytic iron, Ferrous Sulphate (FeSO4) and Ferric Sodium Ethylene Diamine Tetra Acetate (NaFeEDTA) when consumed through wheat flour. It was found that NaFeEDTA was highly suitable for cereal based fortification and about 2 to 3 times more absorbable than other forms of iron when used for fortification of cereals with high phytate content. Also, this form of iron prevents discoloration of wheat flour as other forms of iron do when react with moisture. This is one of the key features for acceptability of fortified wheat flour in community. Though, cost calculations are required to be done before using NaFeEDTA as it is higher than other forms.

6.3. RECOMMENDATIONS FOR CORPORATE COMPANIES AND ORGANIZATIONS

6.3.1. Production of Low-Cost Micronutrient Sachets

Micronutrient fortificant sachets like ‘sprinklers’ have been piloted in many countries and was a successful intervention. Similarly, in our country too where wheat is consumed as staple diet, fortificant manufacturing companies should develop low cost premix sachets (biodegradable packs preferably made of paper which is easy to tear) for small quantity of wheat flour like 1 Kg, 5 Kg or 10 Kg and made available at community level or FPS. Easy availability of micronutrient at affordable cost and social marketing for usage of micronutrient into wheat flour will attract and motivate people to purchase and use it.

6.3.2. Government and Corporate Companies to Strengthen Small-scale Flour Fortification

The current study focuses on feasibility and effectiveness of implementing small-scale flour fortification programmes in rural areas. This study could be beneficial for corporate, food related organizations or companies or even Governments planning to execute small-scale flour fortification.

Many national and international organizations, companies, academic institutions implement nutritional programmes in villages, blocks or districts as their intervention areas. This study could be helpful for such organizations if they involve small-scale wheat flour fortification in their programme and strengthen the small-scale fortification system in their respective intervention areas.

6.4. Scope of Future Work

1. As already mentioned in Chapter no. 5 that Ministry of Women and Child Development has issued a notice in 2017 focusing on use of fortified wheat flour in MDM and ICDS from December 2019. Thus, while doing similar research studies in future, it is advised to track on the situation of usage of fortified wheat flour in government safety net programmes especially MDM and ICDS and also study the intricacy in execution.
2. The current study was based on an ongoing project of small-scale wheat flour fortification which concluded in the year 2016-17 due to project closure period. Through this study, the perception of households was assessed towards paying additional cost for getting fortified wheat flour, but whether they will pay in actual, as mentioned in Objective no. 5 of this study, could not be assessed. This assessment could have been very helpful in getting the clear picture of households' attitude towards acceptability and affordability of fortified wheat flour. It is suggested to undertake this assessment in similar future studies. While doing similar studies in future, it is suggested to select both intervention and control study areas and conduct hemoglobin tests, after seeking ethical approval, in order to assess the anemia prevalence in both the areas and hence the efficacy of small-scale wheat flour fortification programme in improving nutritional status of rural population.