SUPPORTING COST EFFECTIVE IMPLEMENTATION OF LARGE-SCALE WHEAT FLOUR FORTIFICATION PROGRAM IN PAKISTAN

Dr. Irfan Ullah[1], Dr. Shabina Raza[2], Suvabrata Dey[3], Preeti Kamboj[4]

[1] iullah@NUTRITIONINTL.ORG , Nutrition International, Islamabad, Pakistan; [2] sraza@NUTRITIONINTL.ORG , Nutrition International, Islamabad, Pakistan; [3] sdey@NUTRITIONINTL.ORG , Nutrition International, New Delhi, India; [4] pkamboj@nutritionintl.org, Nutrition International, New Delhi, India

Rationale/ Objective:

The “Cost of Doing Nothing” about undernutrition in Pakistan is US$ 7.6 billion annually in lost economic activity. Around 2.8 million cases of anemia and 21,000 cases of birth defects were reported among pregnant women. Adult anemia resulted in lost current productivity amounting to US$657 million[1]. Evidence shows that flour fortification in countries was associated with a 2.4% reduction in the odds of anemia prevalence[2]. Similarly, folic acid food fortification at 100% population coverage has been linked with reduction in the number of neural tube defects cases by half in low-income countries[3]. The World Health Organization recommends Large Scale Food Fortification as an evidence-informed and cost-effective intervention to fight micronutrient deficiencies[4].

Nutrition International (NI) started supporting the government of Pakistan and industry in the implementation of wheat flour fortification program (WFFP) in 2016.

Objective: To support improvement in dietary quality of the general population of Pakistan, particularly women of childbearing age and adolescents, through sustainably improving access to wheat flour fortified with iron, zinc, vitamin B_{12} and folic acid.

Methods/ analysis:

- NI provided Technical Assistance to Federal Ministries and Food Departments for mandatory food fortification enactment at all levels.
- NI has been building capacity of government officials and wheat flour millers to implement fortification processes.

Methods/ analysis (Contd.) :

- NI provided cutting-edge fortification and quantitative testing equipment to ensure quality assurance (QA) and quality control (QC) and scale up production of adequately fortified wheat flour, along with guidance for enforcement and sustainability.
- NI also engaged with public and private partners to ensure uninterrupted supply of high-quality premix.

Results/ Findings:

NI’s support was instrumental in the conduct of the following activities:

- **Enactment of mandatory food fortification**:
  - Mandatory food fortification was enacted in Sindh, Balochistan and Khyber Pakhtunkhwa provinces in the country,
  - The bill in Punjab is in the final stages of departmental level approvals,
- **Provision of trainings**: Till September 2023,
  - 1200 wheat flour millers, 800 officials from Food Department & Food Authorities and QA/ QC staff from Food Department & Food Authorities laboratories were trained on fortification process and QA/QC,
  - Fortification Information System was developed, and 100 Food Department & Food Authorities staff were trained on the same,
  - 100 chakkie owners trained on fortification process, QA/QC and were linked with the consumers,
- **Provision of equipment**:
  - Around 2,333 microfeeders were installed in wheat flour mills,
  - Spectrophotometers were provided to 13 public and private laboratories for detection of added iron in fortified wheat flour,
  - 22 I-check Iron cluster laboratories were established, and
  - 100 microfeeders were installed in 100 chakkies in 90 districts across the country.

Figure 1: Advocacy being conducted with the government stakeholders for enactment of legislation

Figure 3: A microfeeder in use at a wheat flour mill

Implications:

NI’s efforts would result in 32.7% of the total wheat flour production to be adequately fortified @ US$ 0.0014/ kilogram reaching >56 million people at full scale.

Source:
[1]The Economic Consequences of Undernutrition in Pakistan. An Assessment of Losses. 2017. World Food Programme.
[2]Barkley, J., Wheeler, K., and Pachón, H. Anaemia prevalence may be reduced among countries that fortify flour. British Journal of Nutrition, 2015. 114, pp 265-273. doi:10.1017/S0007114515001646.
[3]Risk reduction from Blencowe, H: Folic acid to reduce neonatal mortality form neural tube disorders. International Journal of Epidemiology. April 2010 (suppl_1):i110-i121
[4] Food fortification (who.int)

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