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Nutritionally Sensitive Agriculture-Approach to Tackle Hidden Hunger

Miss Manshi Panda*

UG Scholarship at School of Agriculture, GIET University, Gunupur

*Corresponding Author
Miss Manshi Panda*

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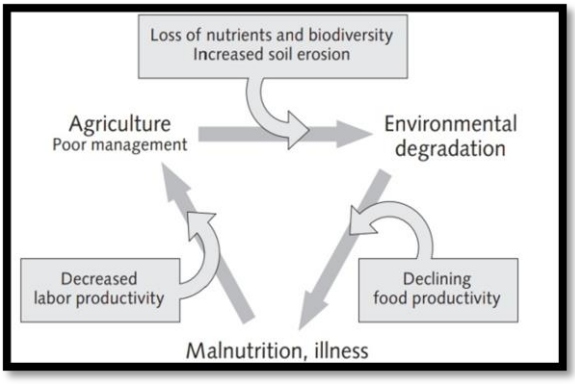
INTRODUCTION

Developing countries like India are facing a double burden of diseases. While pre-transition diseases like infectious Diseases and malnutrition persist, there is growing incidence of post-transition non-communicable diseases like obesity, hypertension, diabetes, cardiovascular diseases and cancer. India has become the diabetes capital of the world. Nutrition Influences both the burdens. Malnutrition increases susceptibility to infections and resultant morbidity and mortality. Prenatal malnutrition has been shown to affect the growth of the foetus resulting in low birth weight (LBW) Babies. WHO has recognised diet as one of the important determinants of health.

Food is the primary source of nutrients needed to sustain life, promote health and normal growth and development, and assure human productivity. For the world's poorest people, who often live the closest to agricultural lands, this source is frequently inadequate to supply all nutritional needs. This paradox—that Those who have the potential to grow the most food are the most in need—has prompted the development of eco nutrition. Eco-nutrition integrates environmental health and human health, with a particular focus on the interactions among the fields of agriculture, ecology, and human nutrition.



National Sample Survey Office 2011–2012 data were used for comparison since this is the most recent country-wide data. Except for the richest 5%, of Indians, the average daily intake of calorie of Indians was below the recommended 2503 kcal/capita/day. The consumption of fruits, vegetables, legumes, meat, fish and eggs were significantly lower. The share of calories from protein sources was only6–8%, compared to 29% in reference diet.While calorie adequacy may ensure protein adequacy (though not protein quality), it most often fails to quench the hidden hunger. A recent study from the National Institute of Nutrition, Hyderabad, India, shows a high prevalence of Vitamin deficiencies, particularly, vitamins A, B2, B6, B12,Folic acid and vitamin D, assessed by subclinical status(blood values) and dietary intakes, in an apparently healthy urban adult population. The overall prevalence of Anaemia was 21%.

Vitamin deficiencies as judged by blood levels were: vitamin A 6% (despite much higher dietary deficiency), D 29%; B1 11%; B2 50%; B6 46%; folate 32%and active B12 46%. Vitamin D deficiency has become a major problem even in tropical countries. The dietary intake of all the vitamins except vitamins B1 and B6 were close to or lower than 20% of Indian reference. That of vitamin B12 was only 4% and folate 6%. Vitamin C was not examined .The study population had high incidence of overweight and obesity, and high levels of homocysteine—an independent risk factor for cardiovascular diseases for whose metabolism B vitamins like folic acid and B12 are required. This shows that even the apparently well-fed Indians from middle-Income group suffer from vitamin deficiencies.

A needle in the Haystick-"Hidden Hunger"

Agricultural Policies:-

Agricultural policies and projects have traditionally focused only on increasing yields, productivity, and general food availability in countries or regions, relevant in both developing and developed nations. As argued by Bouis and Welch, ―Agricultural systems have never been explicitly designed to promote human health and, instead, mostly focus on increased profitability for farmers and agricultural industries. India is a clear example of the failure of policies to achieve improved food and nutrition Security. While it is estimated that between 1966 and 2007, the per capita availability of calories Increased by nearly 25% in South Asia, with India having an amount of food sufficient to feed its Population, the prevalence of child malnutrition there is among the highest in the World. While the Green revolution improved food productivity significantly, the role of healthcare, childcare, and diverse and quality foods for household food and nutrition security was less emphasized. More detailed analyses have also highlighted that women and children benefited the least from the Technological revolution , and there was insufficient attention towards women's empowerment And intra-household distribution of resources. However, the revolution had a specific goal—to increase Food productivity—and it did accomplish that. One lesson emerging is that massive policy reforms in one sector could be more impactful if other sectors are integrated simultaneously in both policy and practice. In the beginning of the 1980s, more nutrition elements were incorporated into agricultural policies because of a well defined concept of food security with an emphasis on access. Agriculture is an important instrument in reducing hunger in rural areas, by increasing farmers' income and assets. However, there is plenty of evidence of agricultural projects increasing farmers' income and assets, which did not succeed in improving child nutrition .

Strategies for combating hidden hunger:-

The three basic strategies for combating micronutrient deficiencies are: (i) supplementation with micronutrients(the pharmacy-based approach), (ii) food fortification and(iii) dietary diversification—a farm-based approach.

Micronutrient supplementation

This strategy is generally used to combat severe deficiency of one or two nutrients. India has two micronutrient supplementation programmes:-

1. **National nutrition anaemia prophylaxis programme.**

In this programme, all pregnant and lactating women receive 60 mg of elemental iron and 500 µg of folic Acid (IFA tablets daily) for at least 100 days during pregnancy 100 days in post-partum period. Preschool children receive 20 mg of elemental iron Plus 100 µg of folic acid daily. Due to administrative infirmities and lack of awareness regarding the importance of the programme desired results have not been obtained.

2. **Massive dose vitamin A supplementation programme**

To prevent nutrition blindness first dose of 100,000 IU of vitamin A is given to children at 9 months of age along with measles vaccine. This is Followed by biannual dose of 200,000 IU to children between the ages of 18 and 59 months.

Food fortification:-

Food fortification is done either to restore nutrients lost during processing or to enrich foods with nutrients. Food Fortification has been defined as 'addition of one or more essential nutrients to a food, whether or not it is normally Contained in the food, for the purpose of preventing or correcting a demonstrated deficiency of one or more nutrients in the population or specific population groups.It is a convenient and relatively less expensive strategy with a wide outreach and has been used for nutrients like vitamins A, D and some B-complex vitamins and minerals like Iron and zinc. The vehicle to be used for fortification should be a food that is consumed by large segments of population Regardless of economic status including poorest of poor, and the bioavailability and stability of the fortified nutrients should be good. One of the successful programmes in India is salt fortified with iodine, which has now become a universal programme. The National Institute of Nutrition, Hyderabad, India, has developed salt double fortified with Iodine and iron. Its use at present is limited. Fat soluble vitamins are often added to oils. Wheat flour is often fortified with minerals and B-complex vitamins, and WHO/FAO has provided guidelines for it. Fortifying oil with vitamins A and D is mandatory in many countries, including India.

Nutrition gardens have recently caught the imagination and attention of many state governments and NGOs in India. Suri has summarised some of these unpublished initiatives. This movement needs to gain momentum with a robust information, education and training strategy. The current Swatch Bharat clean India programme in India will hopefully complement this effort in reducing malnutrition.

Homestead production of diverse foods to ensure dietary diversity assumes particular significance under the present Pandemic of corona virus, when the mobility of humans and material has become highly restricted.

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