

Changing health climate through better nutrition

Upping public health parameters requires putting in place a nutrition security system. This can be achieved through climate-sensitive farming and cultivating high-yielding crops



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The vulnerability index of agriculture to climate change, developed by the Government of India's National Initiative on Climate Resilient Agriculture (NICRA), places 230 districts of Uttar Pradesh, Madhya Pradesh, Bihar, Haryana, Chhattisgarh, Jharkhand, Gujarat and Rajasthan in the "very high to high" category of vulnerability for 2021-2050. This metric is instrumental in assessing the impact of climate change on agriculture at a district level and incorporates several variables in its calculations, including net sown area, rural population density, water-holding capacity of soils and the stage of groundwater development.

What is not so apparent and perhaps equally telling is that 162 of the same districts also rate worse than the national average of underweight prevalence, which is currently measured at 36 per cent. The distribution of these districts is largely clustered in the States of Maharashtra, Gujarat, Karnataka, Rajasthan, Madhya Pradesh, and Telangana. Abnormal low weight in children below five years of age can be seen in more than half of the children in several districts of Bihar, Chhattisgarh, Gujarat, Jharkhand, Karnataka, Madhya Pradesh, Maharashtra, Odisha, Rajasthan, Uttar Pradesh, and West Bengal. Needless to say, stunting and anaemia follow the same grim trend.

Unfortunately, nearly every third child in our country has low weight for his or her age, according to National Family Health Survey (NFHS-4, 2015-16). This underweight prevalence is a relevant proxy indicator of population health and poses a formidable challenge in our pursuit to build a healthier India. Niti Aayog's strategy to expand Integrated Child Development Services (ICDS) to form a National Nutrition Mission (NNM) is a welcome step for transforming health statistics in India. That success will eventually be measured by how the various health statistics track in the coming years.

It is well established that among children, a healthy diet goes a long way in combating inadequate weight and also serves to improve concentration, alertness and problem-solving skills. Early years of life are the bedrock for building a strong populace, therefore, any effort to reduce underweight and anaemia incidence in children can yield rich dividends in enhancing human capital and economic productivity.

Elevating the nutritional status



demand a collective effort and a multi-pronged approach to building an effective food and nutrition safety net. Intervention strategies are plentiful, ranging from incentivising community-level nutritious produce, producing bio-fortified grains and fortified processed foods, to marketing and consumption of the same. However, only a strong political commitment can drive the successful implementation and eventual success of these interventions.

In its simplest form, the nutrition security system should start in India from the cultivation of appropriate crops such as sorghum (jowar) and millets such as bajra and ragi. These grains deserve promotion due to their additional nutritive value (iron and calcium) and their classification as C4 crops and enhanced ability to withstand water stress. The C4 plants are more efficient in bio-sequestration of carbon dioxide and thus represent an important climate change avoidance strategy. These crops reduce the exploitation of groundwater from cultivation of water-guzzling paddy, particularly a concern for dry/rainfed areas.

Central and State Government commitment are required for motivating the crop breeders to develop high yielding varieties of nutritionally superior low water-requiring crops, like millets. Developing high-yielding varieties is a must for India, considering that the average yield for sorghum in the United States is 4.5 tonnes/hectare in comparison to

one tonne/hectare in India. Concerted efforts on breeding and field management of crops for yield enhancement are crucial. Needless to say, aggregated produce needs to be safeguarded, be locally available, and reach the most fragile population. Agri-zone specific varieties that would give good profits to farmers need to be developed in the interest of nutrition and climate change. Renewed extension programmes should be run in partnership with academia, research institutes and non-governmental organisations. Safeguarding farmers' interest through Minimum Support Price (MSP) for such hardy crops is also important.

Past experience in India has shown that the game changer is to push cultivation practices through minimum support price, along with governmental procurement of the produce.

Around the globe too, a large part of farmers' income is directly or indirectly contributed through Government subsidies and policies. Farmers in Norway, Switzerland, Japan and South Korea receive more than half of their revenues through state subsidies. Assured procurement approach brings in risk reduction of the farming community from climate variability, extreme weather and middleman exploitation.

An extended public distribution system (PDS) or Safal system can ensure the availability of nutrition-dense fresh produce at subsidised prices. Extended PDS, executed in a targeted manner, that

allots priority to districts presenting highest malnutrition and agricultural vulnerability, will help reach the neediest, and resource poor regions.

The 42 districts with very high agriculture vulnerability and very high prevalence of underweight children need development of measures such as direct transfer of benefits to families. Improvement in individual and family consumption of nutritious diets is much needed, both through increased access and availability of affordable cereals, along with fruits and green leafy vegetables and the promotion of their consumption. Heightened awareness of the benefits is required to ensure nutritious consumption from early years of life.

Amid regional topographic diversity—hills, desert, coastal areas, challenges are posed by strong influences on health—literacy among women (68 per cent at national level, NFHS-4, 2015-16) and access to household-level sanitation facility (48 per cent at national level, NFHS-4, 2015-16). These health protective measures are essential for a lasting change in health status. In conclusion, leapfrogging along health parameters requires nutrition security system through climate-sensitive farming, cultivating high-yielding nutrition dense crops, and ensuring affordable, nutrition-rich consumption.

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