Millets and wheat over rice and meat

A shift to wheat, millets and maize from polished rice, to chicken and legumes from beef and eggs, along with leafy vegetables and coconut could reduce India's micronutrient deficiencies and reduce greenhouse gas emissions, a study titled 'Healthy, affordable and climate-friendly diets in India' suggests. It was published recently in the journal *Global Environmental Change*.

A team of researchers from Austria, the U.S. and India, headed by Narasimha D. Rao from the International Institute for Applied Systems Analysis, Austria, used the National Sample Survey of Consumption Expenditure in India (2011-12) and the National Nutrition Monitoring Bureau to examine Indian diets. They found that while nearly three-quarters of Indians consume less than the ideal number of calories a day, and more than half have protein deficiency, the deficiencies of micronutrients were more prevalent: nearly nine in 10 Indians are iron-deficient, 85% do not meet the required intake of vitamin A, and two-thirds have zinc deficiency.

Cost was clearly a concern as deficiencies were found to decrease as household incomes increased. Surprisingly though, urban households had increased deficiencies compared to their rural counterparts (apart from Vitamin A), which the researchers attribute to greater diversity of cereals in rural areas. Having identified 32 representational diets each for north, south, east and west India, the researchers found that the rice-based diets of south and east India make the people in these areas more vulnerable to micronutrient deficiencies than people elsewhere.

The researchers found that while those above the poverty line can make up for this nutritional inadequacy without their food budgets being affected much, nearly 160 million people below the poverty line cannot without exceeding their food budgets. The researchers try to address these concerns while proposing solutions.

They suggest that the required micronutrients can be met by reducing the intake of rice (from 61% to around 40% of calorie share) and meat (expensive and with high greenhouse gas emissions) and replacing them with coarse cereals such as bajra and ragi, along with legumes, dark, leafy vegetables, and coconut. These dietary changes could also reduce agricultural greenhouse gas emissions in India by up to 25%, the study shows.

The India-Japan economic relationship remains underwhelming in relation to strategic ties

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