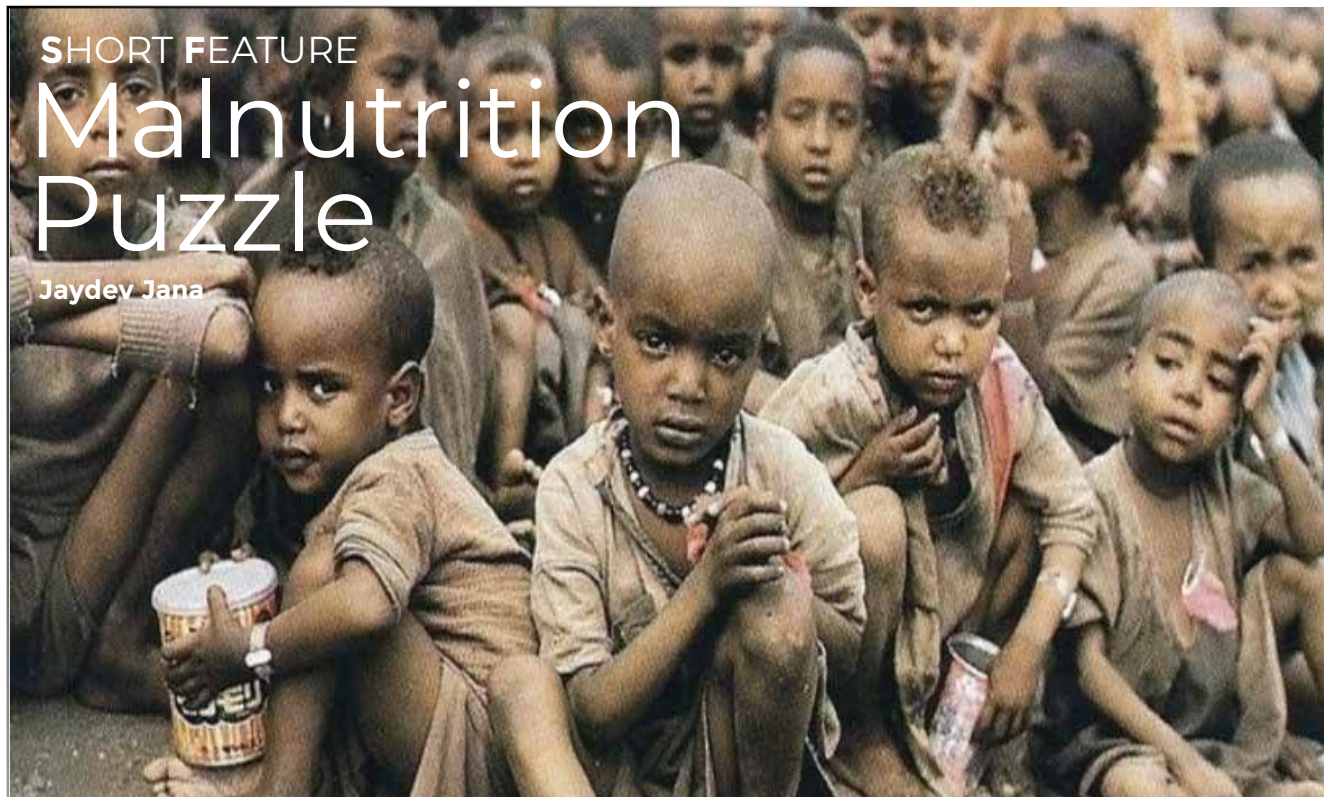




WHEREAS to be well nourished is both a development and an ethical imperative, the shocking prevalence of malnutrition despite its rapid economic growth and spending on several programmes is the urgent social and political issue of India today.

Despite India's 50 per cent increase in Gross Domestic Product (GDP) since 1951, it is facing a serious burden of malnutrition. According to a Global Nutrition Report 2017, more than half the women of reproductive age in the country suffer from anaemia. India is home to the largest number of malnourished children in the world. About 37 per cent of our under-five children are underweight, 39 per cent are stunted (low height-for-age), 21 per cent are wasted (low weight-for-height) and 8 per cent are severely malnourished. Stunted growth is caused by chronic malnutrition in the first 1,000 days of a child's life. Stunting, in fact, is intimately associated with poor socioeconomic and maternal nutrition status. India reports the highest figure for stunting, and one-third of all girls in the country suffer the condition.

Close scrutiny of the oft-repeated status of malnutrition prompts a certain amount of scepticism among both professionals and laymen alike as to evaluation of malnutrition. The term 'malnutrition' is quite often loosely used by laymen without paying much attention to its actual meaning. Even among biologists and nutritionists there is hardly any consensus on the basic question of how malnutrition should be defined and by what standard it should be measured.

In the nutrition literature, there is no universally accepted terminology to distinguish between various nutritional deficiencies. Many nutritionists do not make any distinction

between under- and malnutrition. It remains shrouded in myth and mystery. However, the term malnutrition is used in relation to under-nutrition (Protein-Energy Malnutrition — PEM), over-nutrition (consumption of too much calories) and also micronutrient deficiency (hidden hunger).

The standard method to measure the nourishment status of adults is by the Body Mass Index (BMI) – the ratio of the body weight (in kg) to the height squared (m^2). The international cut-off for being malnourished is a BMI of 18.5, with 18.5 to 25 being the normal range, beyond 25 considered obese, below 18.5 is said to be living in famine condition. In India, the National Family Health Survey-3 (NFHS-3), conducted in 2005-06, reports that in rural India 38.4 per cent of adult men and 40.6 per cent of adult women have a BMI of less than 18.5. This is suggestive of endemic near-famine conditions. However, the sanctity of BMI has of late been questioned.

The other two alternative approaches for measuring the extent of malnutrition come from two organisations of the United Nations – World Health Organisation (WHO) and the Food and Agriculture Organisation (FAO) – that give a contradictory and different global picture. While WHO's approach is based on the observed conditions of the human body and the basic functioning – the so-called 'anthropometric' measures – FAO estimates nutritional status through per capita food availability statistics. The FAO estimates suggest that the incidence of malnutrition in sub-Saharan Africa is about twice as high as that in South Asia. Indicators used by WHO reveal quite the reverse picture – the prevalence of malnutrition among children is twice as high in South Asia as in sub-Saharan Africa.

Anthropometric measures adopted by WHO for ascertaining malnutrition are stunting (low height-for-age), wasting (low weight-for-height) and underweight (low weight-for-age). Stunting is an indicator of chronic malnutrition resulting from prolonged food deprivation, and/or disease or illness; wasting is an indicator of acute stage of malnutrition, caused by more recent food deprivation or illness; underweight is an indicator of both acute and chronic malnutrition.

Children whose measurements fall below a certain threshold of the reference population, based on the World Health Organisation (WHO) standards, are marked as undernourished: stunted, wasted or underweight. By this measure, the NFHS-3 reports roughly half of the children under five are stunted, about one in five children under three is wasted. But WHO's methodology does not take into account race, culture, geographical locations, etc. Moreover, overlapping amongst the said measures also seems to be an interesting and puzzling feature. Some children who are stunted will be wasting and/or overweight. Those who are wasting will also be stunted and/or underweight. A more comprehensive measurement of child malnutrition is, therefore, imperative.

It is implied from standards adopted by the WHO that if the same and identical nutrition is provided, children population of entirely different races, ethnicities, cultures, genetic make-up, and geographical locations should look identical in terms of height distribution. But, in reality, it does not happen. Indeed, the basic flaw lies in the use of globally uniform height and weight cut-off points ignoring the differences attributed to genetic, environmental, cultural and geographical factors. Medical science duly recognises the importance of these external factors. Indeed, the appropriateness and correctness of using WHO's standards are not beyond doubt.

Indian children, on average, are shorter not only than children in the poorer sub-Saharan African (SSA) countries; they are among the shortest in the world. Such large scale stunting has been described as the 'Asian enigma'. Experts have strongly ascribed this intractable puzzle to the consequences of widespread open defecation (OD).

Nutrient intake is indeed a poor measure of malnutrition. Nutritional status of consumers predominantly depends on the conversion efficiency of food into energy and absorption of micronutrients. Poor environmental sanitation, health care and unclean water adversely affect the biological absorption and retention of food. India's proportion of OD in the world rose from 55 per cent in 2006 to around 61 per cent in 2011 (WHO and UNICEF 2013). OD is much less common in SSA, China and even in Bangladesh. No country measured in the last 10 years has a higher rate of OD than Bihar. Poor sanitation is not the only cause of stunting because if Indian babies are reared in a better environment of developed countries they grow much taller. Here remains another mystery.

The most important and lethal form of malnutrition is PEM which is referred to when world hunger is discussed. The micronutrient malnutrition does not necessarily create a feeling of hunger, hence called hidden or silent hunger, but it undermines child growth and development, intelligence,

educability and academic achievement lowers work productivity and reduces occupational choices. It predominantly affects adult women and men. Consequences of malnutrition transcend generations. The risk of malnutrition is higher among children whose mothers suffer from chronic malnutrition. The mother's present nutritional status in turn depends on her childhood nutritional status. Thus a vicious circle (mother-child-mother) of malnutrition seems to have set in for generations.

There remains a myth that poverty and per-capita income is the major underlying cause of malnutrition. NSS data on nutrient consumption debunk the myth. Engel's law of food demand appears to be fully operational in India, as is evident from the declining income elasticity for calorie-consumption with rise in income. Over the past four decades, average per capita calorie consumption has declined less than 2100 calories in urban areas and 2400 in rural areas – numbers that are often cited as minimum requirement for individuals engaged in manual labour, even as real average Monthly Per Capita Expenditure (MPCE) has increased over time. For instance, during the period between 1983 and 2009, estimated average calorie intake in rural India declined by about 15 per cent, while during this period MPCE increased by 42 per cent. This trend – started in 1972-73 (NSSO, 1996) – has been termed as the 'calorie consumption puzzle' – as people become richer, they consume less calories. The sustained decline in per capita calorie consumption can largely be ascribed to lower levels of physical activities and improvement in health and sanitation environment. But the consumption of calories seems to be 19 per cent less than the requirement of calories for 'sedentary activity' of the average Indian.

India is now passing through a phase that nutrition experts call a 'dietary transition'. Dietary preference is shifting from cheap calories (e.g. cereals) to more expensive non-cereal foods like meat, fish, milk, milk products, fruits and vegetables. Clearly, India is eating less and also eating bad. Diets are more energy-dense – rich in saturated fat and sugar but deficient in complex carbohydrate (main sources of dietary fibre) and micronutrients, iron, etc. Dietary transition seems to cause double burden – under-nutrition and over-nutrition. As per NFHS-3 data around 25 per cent children below 3 in the wealthiest 20 per cent families are stunted and 20 per cent chronically underweight in India. It also revealed that around 44.7 per cent of Gujarat's children are underweight, which is above the all-India figure average of 42.5 per cent.

There is no consensus among biologists and nutritionists on the basic question of how malnutrition should be defined accurately and by what standard it should be measured flawlessly. Likewise, there is also little agreement on the causes of the malnutrition. All these are intra-disciplinary as well as interdisciplinary. Malnutrition should be looked into as a multidimensional phenomenon. Solution of the obvious puzzle necessitates more researches.

Mr Jaydev Jana, IAS (Retd), is Ex-Director of Inspection and Quality Control, Food and Supplies Department, Govt of West Bengal. Address: 6, Motilal Gupta Road, Kolkata-700 008. Email: jaydev.jana@gmail.com