

## “MALNUTRITION IN INDIA: AN OVERVIEW”

SHARANABASSAPPA DAMBAL

M. Sc (Pediatric Nursing), Nursing Officer, All India Institutes of Medical Sciences, Raipur, Chhattisgarh

### ABSTRACT

*Among the current rising issues, one among them that needs immediate attention of the nation is malnutrition—comprising both under nutrition and over nutrition— which is an important indicator of the health of any country. It is observed that people who are either obese or undernourished underperform in various aspects of their life, making them vulnerable to missing out on opportunities and becoming productive members of society. India is one among those countries in the world which has one of the highest recorded numbers of undernourished population. As the nation aspires to fulfill its economic and social development goals, among the areas which requires greater attention malnutrition is one of them. This summary offers an overview of the condition of prevalence of malnutrition in India and documents efforts being made by the various sectors of the Indian society which includes Government initiatives, voluntary groups, corporate & individuals’ efforts to overcome the problem. It examines India’s performance of the policies measures/programs at the implementation/execution level by looking into some of the key malnutrition indicators, as well as the success, or lack thereof over the last few decades. This summary argues that the malnutrition challenge being faced by India can be addressed only when the Governments – both Central & State Government, work in coordination with each other and adopt a comprehensive and coordinated approach and demonstrate better governance. And since the public at large are the epicenter of the issue, their involvement becomes indispensable.*

**KEYWORDS:** Malnutrition, Under-Nutrition & Over-Nutrition

Original Article

**Received:** Oct 24, 2017; **Accepted:** Nov 14, 2017; **Published:** Dec 14, 2017; **Paper Id.:** IJMPSDEC20175

### INTRODUCTION

The overall Good health of a citizen not only benefits the individual, but also the nation as a whole. The quality of health of any nation is measured by the average health of its citizens. Across the Globe, many countries face the challenge of guiding its people to the path of good health, which entails various difficulties and hurdles being faced in this direction. In the growing and underdeveloped economies, irrespective of their income level, people face various health-related ailments. Though efforts are being made by State and non-State authorities to address these health problems, many countries continue to face the incompetence in meeting their goals and targets.

Various factors ordain the health conditions of an individual which include, diet, social status, economic condition, lifestyle, environment they live in, level of physical activity etc. It is because health is a reflector of these attributes and the conditions of the same in their area of habitat. The major victims are the ones with low incomes, living in environmentally degraded or remote areas, in both developing & underdeveloped countries.

The most critical for an individual’s health is, perhaps the foundation built in the early years of their lives. If, for instance, a lactating mother is undernourished, the milk produced although enough in quantity but, will lack the quality of energy and nutrients required by infant. Infants who do not get the required amount of nutrients will

not be able to physically grow on par with their peers & fail to develop the immunity to fight against the diseases they are prone to. Recent estimates of the mortality of developing countries, including India, indicated that every year about 50% children under the age 5 die due to malnutrition [1]. Those who survive under the same conditions experience serious health disorders at various stages of their life. The contrast between the poor, middle class & affluent class with respect to the upbringing of their children is way too different [2]. The poor can only bear the basic necessities but, cannot afford the costs of healthcare, if any. While, a major portion of the middle & affluent class can afford all of the luxury but this comfort leads to sedentary lifestyles, and the changing dietary styles – like dependency on processed and junk food, little or no physical activity all of these add to weight gain and lethargies, thereby impacting their productivity level. Such lifestyle makes them prone to contracting certain diseases and fall into the category of malnutrition [3]. The poor classes are undernourished, while the middle & affluent class are over nourished. Although, this is a generalized statement, but on a broader note this is the reality which cannot be ignored. But all in all, majority of the population face the general challenge of malnutrition undernourished or over nourished [4].

The paper commences with an explanation of the detrimental effects of malnutrition on general society which are broadly categorized into – Infants, teenagers & grownups. These explanation is based on the review of data from national, state, and Union territory level on anemia, wasting, obesity, and stunting. The latter part of the paper will cover the government policies and initiatives taken up by government of India soon after the independence to counter malnutrition. Various correlations are made with the progress achieved with regard to the key. References are made to progress achieved with respect to key indicators of health and nutrition, as well as the concerns expressed through the UN's Millennium Development Goals by the international community, particularly the Goal 1, which covers eradicating extreme hunger and poverty. Going forward, an explanation of the multiple factors that are responsible for the occurrence of malnutrition, including economic and employment situation, awareness, availability of safe & hygienic food and sanitation, functioning of the administration bodies, and the execution of the programmes at the grass root level and reaching out to the public at large, along with the challenges faced in the execution of the same. The concluding section summarizes the main points presented in the paper.

#### Malnutrition in India: a Snapshot

The present condition in India is of malnutrition and hunger terrifying. The statistics of Food and Agricultural Organization (FAO) states that, the African countries- esp. the sub-Saharan countries have the maximum hunger, in absolute terms, whereas country like India has the most number (almost 25%) of undernourished [5] (underfed) people of the global population (19.46 Crore or 15% of the country's total population between 2014 and 2016).[6]

Hunger and undernourishment accelerates several problems. Infants & Adolescents who are victims of hunger & undernourishment are prone to nutritional deficiencies which affect their overall health. The Statistics with respect to Indian population, during the year 2015-16[7] depicted the following details with respect to children under the age of 5 years:

- Stunted (Inadequate physical growth/height) - 38% (rural: 41% & urban: 31%)
- Wasted (Disproportionate weight for height) - 21 % (urban: 20%, rural: 22%)
- Under weight (Disproportionate height for weight) - 36 % (urban: 29%, rural: 38%)

Other data:

- Overweight (Excess weight for the individual's height) - 2% in 2006[8]; and
- Anemic - 58 % of children in the age range of 1 to 5 years (56% of urban, & 59% of rural)[9]

Every year out of the 13 lakh casualties, of children under 5 years, nearly 50% of them are directly linked with Malnutrition. And the count of overweight and obese adolescents in 2007 was measured at 10.8% & 2.02%, respectively [10]. Anemia is another major problem faced by the teenagers, reports suggest that about 56% of teenage girls & 30% of teenage boys are anemic.[11]

The trouble some long term effects of malnutrition are significant among grownups, too. Illustration-The body mass index is a value derived from the mass and height of an individual, also known as Quetelet index, of a considerable proportion of 23% of the female population, 20% of male population among teenagers is found to be falling below the healthy norm.[12] There are proven records to confirm that, people with unfavorable BMI (both below and above the accepted level) are more susceptible to certain diseases. Therefore, it is crucial that such portion of people are treated in time and an awareness is created so that they continue to contribute to the productive society instead of being a burden to their immediate family and society in general.[13] Further, the anemia issue, is not just faced by the teenagers, but it also haunts about 23% of men, and 53% of women in the age group of 15-49 years,[14] depicting efficiency of iron, which is the most common reason due to under nutrition. While, in the same age group, about 18% of male and 20.85% of females have BMI of above 30 & 35, who fall in the category of overweight and obese.[15]

**Table 1: Nutrition Status of Indian Population, by State/UT, 2015-16**

State / Union Territory	Children (Under 5 Years)				Adults (15 – 49 Years)					
	Stunted	Wasted	Underweight	Anemic (6-59 Months)	BMI Below Normal		Overweight or Obese		Anaemic	
					Women	Men	Women	Men	Women	Men
A & N Islands-UT	23.3	18.9	21.6	49.0	13.1	8.7	31.8	38.2	65.7	30.8
Andhra Pradesh	31.4	17.2	31.9	58.6	17.6	14.8	33.2	33.5	60.0	26.9
Arunachal Pradesh	29.4	17.3	19.5	50.7	8.5	8.3	18.8	20.6	40.3	16.9
Assam	36.4	17.0	29.8	35.7	25.7	20.7	13.2	12.9	46.0	25.4
Bihar	48.3	20.8	43.9	63.5	30.4	25.4	11.7	12.6	60.3	32.2
Chandigarh-UT	28.7	10.9	24.5	73.1	13.3	21.7	41.5	32.0	75.9	19.3
Chhattisgarh	37.6	23.1	37.7	41.6	26.7	24.1	11.9	10.2	47.0	22.2
Daman & Diu-UT	23.4	24.1	26.7	73.8	12.9	12.0	31.6	30.7	58.9	23.6
D & N Haveli-UT	41.7	27.6	38.9	84.6	28.5	19.7	19.2	22.9	79.5	30.7
Delhi NCT-UT	32.3	17.1	27.0	62.6	12.8	17.7	34.9	24.6	52.5	21.6
Goa	20.1	21.9	23.8	48.3	14.7	10.8	33.5	32.6	31.3	11.0
Gujarat	38.5	26.4	39.3	62.6	27.2	24.7	23.7	19.7	54.9	21.7
Haryana	34.0	21.2	29.4	71.7	15.8	11.3	21.0	20.0	62.7	20.9
Himachal Pra.	26.3	13.7	21.2	53.7	16.2	18.0	28.6	22.0	53.4	20.1
Jammu & Kashmir	27.4	12.1	16.6	43.3	12.1	11.5	29.1	20.5	40.3	15.1
Jharkhand	45.3	29.0	47.8	69.9	31.5	23.8	10.3	11.1	65.2	29.9
Karnataka	36.2	26.1	35.2	60.9	20.7	16.5	23.3	22.1	44.8	18.2
Kerala	19.7	15.7	16.1	35.6	9.7	8.5	32.4	28.5	34.2	11.3
Lakshadweep-UT	27.0	13.8	23.4	51.9	12.5	7.4	41.4	24.6	45.7	10.7
Madhya Pradesh	42.0	25.8	42.8	68.9	28.3	28.4	13.6	10.9	52.5	25.5
Maharashtra	34.4	25.6	36.0	53.8	23.5	19.1	23.4	23.8	48.0	17.6
Manipur	28.9	6.8	13.8	23.9	8.8	11.1	26.0	19.8	26.4	9.6
Meghalaya	43.8	15.3	29.0	48.0	12.1	11.6	12.2	10.1	56.2	32.4
Mizoram	28.0	6.1	11.9	17.7	8.3	7.2	21.1	21.0	22.5	9.6
Nagaland	28.6	11.2	16.8	21.6	12.2	11.5	16.2	14.0	23.9	10.1
Nodessa	34.1	20.4	34.4	44.6	26.4	19.5	16.5	17.2	51.0	28.4
Punjab	25.7	15.6	21.6	56.6	11.7	10.9	31.3	27.8	53.5	25.9
Pondicherry-UT	23.7	23.6	22.0	44.9	11.3	10.2	36.7	37.1	52.4	15.9
Rajasthan	39.1	23.0	36.7	60.3	27.0	22.7	14.1	13.2	46.8	17.2
Sikkim	29.6	14.2	14.2	55.1	6.4	2.4	26.7	34.8	34.9	15.7
Tamil Nadu	27.1	19.7	23.8	50.7	14.6	12.4	30.9	28.2	55.1	20.4
Telangana	28.1	18.0	28.5	60.7	23.1	21.4	28.1	24.2	56.7	15.4
Tripura	24.3	16.8	24.1	48.3	18.9	15.7	16.0	15.9	54.5	24.7
Uttarakhand	33.5	19.5	26.6	59.8	18.4	16.1	20.4	17.7	45.2	15.5
Uttar Pradesh	46.3	17.9	39.5	65.2	25.3	25.9	16.5	12.5	52.4	23.7
West Bengal	32.5	20.3	31.5	54.2	21.3	19.9	19.9	14.2	62.3	30.3
India	38.4	21.0	35.7	58.4	22.9	20.2	20.7	18.6	53.0	22.7

**Source:** Ministry of Health and Family Welfare. NFHS-6. 2015-16. All-India and State/UT Fact Sheets.

Mumbai: IIPS.

The diversity of our country adds to this varied pattern of nutrition profile. In the normal course, statistics confirm that the condition of the poor families, with regard to their intake of nutrients, quality of food intake in terms of calories, hygiene, proteins, etc. is inferior in rural areas, poorer states, and in city slums. Meanwhile, the middle income and affluent class, concentrated in Indian cities, are being trapped in to the so-called ‘lifestyle diseases’ and ‘binge-eating disorders’

which is the effect of consumption and dependency on canned/processed food and excessive consumption of junk foods, combined with sugary food and aerated cool drinks. [16]

### Policy and Programme Interventions

The following are the policies and programmes launched by the Government of India in association with the State Governments, self-help groups and NGO's to counter and address the issue of malnutrition in India

Direct Policy Measures	Indirect Policy Measures
<ul style="list-style-type: none"> <li>Widen the safety net through ICDS to cover all vulnerable age groups</li> <li>Consolidate essential foods with appropriate nutrients</li> <li>Revive low cost and affordable nutritious food</li> <li>Regulate micro-nutrient deficiencies among the vulnerable groups</li> </ul>	<ul style="list-style-type: none"> <li>Safeguard food security through promotion of massive production of food grains</li> <li>Boost the existing dietary pattern by prioritizing production and increasing per capita availability of nutritionally rich food</li> <li>Taking up measures to reduce the increasing gaps between haves and have knots, by bringing about income transfers</li> <li><b>Other:</b></li> <li>Devise land reforms (tenure, ceiling laws) to reduce vulnerability of poor;</li> <li>Increase health care facilities at rural levels, immunization centers, Creating awareness and good diet practices;</li> <li>Prevent food adulteration;</li> <li>Community involvement</li> </ul>

### Government Policy Interventions and Programmes to Combat Malnutrition

<ul style="list-style-type: none"> <li>✓ Mid-day Meal Programme, Universalized in the year 1995</li> <li>✓ National Iodine Deficiency Disorders Control Programme ( Known for its focus on Goitre as Goitre Control Programme) 100% centrally assisted programme, launched in the year 1962</li> <li>✓ Special Nutrition Programme, launched during 6th and 7th five year plan (1970)</li> <li>✓ Balwadi Nutrition Programme, yet another ICDS programme</li> <li>✓ Nutritional Anaemia Prophylaxis Programme for the Vulnerable age groups</li> <li>✓ Prophylaxis Programme to combat Blindness, due to Vitamin A Deficiency for all the vulnerable age groups</li> <li>✓ Integrated Child Development Services (ICDS), which was started in 1975 to bring all the similar policies under one umbrella</li> <li>✓ National Diarrheal Diseases Control Programme, in 1981 to combat the fatal communicable disease of diarrhea.</li> <li>✓ Wheat-based Supplementary Nutrition Programme, 1986 to promote wheat product and consumption.</li> </ul>	<ul style="list-style-type: none"> <li>✓ National Plan of Action on Nutrition, 1995</li> <li>✓ Public Distribution System, 1997</li> <li>✓ National Nutrition Mission, 2003</li> <li>✓ National Health Mission, 2013 (subsumes former Rural &amp; Urban Health Missions)</li> <li>✓ National Iron+ Initiative, 2013</li> <li>✓ Promotion of Infant &amp; Young Child Feeding Practices Guidelines, 2013</li> <li>✓ Weekly Iron &amp; Folic Acid Supplementation, 2015</li> <li>✓ National Deworming Day, 2015</li> <li>✓ Establishment of: Nutritional Rehabilitation Centers; Village Health Sanitation &amp; Nutrition Committee</li> <li>✓ Bi-annual Vitamin-A Supplementation</li> <li>✓ Village Health &amp; Nutrition Days</li> </ul>
---	---

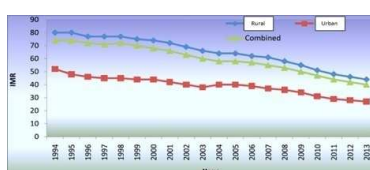
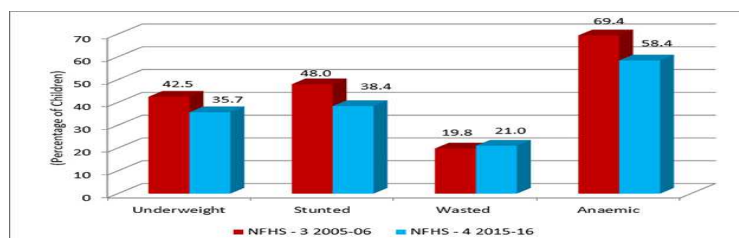


Figure 1: Infant Mortality Rate in India, 1994-2013

**Figure source:** CBHI. National Health Profile, 2015, p. 19;

**Data source:** Registrar General of India. SRS Bulletin, September 2013;

**Note:** IMR in per 1,000 live births.



**Figure 2: Nutrition and Anemia Status of Children in India**

**Source:** NFHS - 4, 2015-16; **Note:** Data on anemia pertain to children aged 6-59 months.

The government initiatives which were launched almost five decades continue to be in action till now and have been assisting our nation in combating the problems related to nutrition, health and family welfare which are now bearing us the long term benefits of disciplined implementation of the policies. The statistics of key health variables have witnessed a favorable decline, thereby show casing the success of the various programmes, launched by govt. of India, like

- There was a drastic fall in the undernourished from a 24% in 1990-92 to 15% in 2014-16;[17]
- The steady decline in MMR (Maternal mortality ratio), which fell down to 167 in 2011-13 from 398 per 1,00,000 live births in 1997-98;[18]
- The favorable fall in IMR (Infant mortality rate) was almost halved, which stood 80 per 1,000 live births in 1991 to 41 per 1,000 live births in 2015-16;[19]
- Even the mortality rate of Under-five has declined drastically (almost 60%), from 115 in 1991 to 50 in 2015-16;[20]
- The declining trend in the proportion of children with causes related to under nutrition[21]

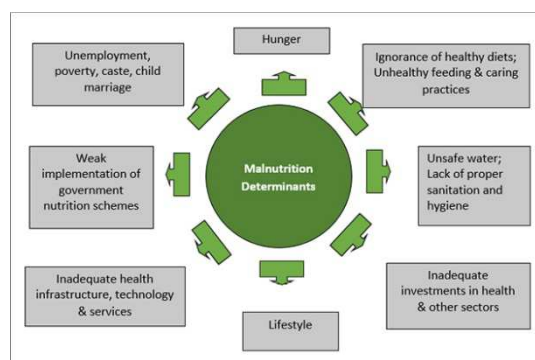
The UN came up with the Global Issues which it wanted its member countries to focus upon and eradicate those problems from the face of the earth. These issues varied from social, economic, political and other matters. Among its initial International Goals- Eradicating Hunger from the face of the globe was the pioneering one. Upon, the reports submitted by India on countering Hunger in India, and assessment done, UN had mentioned that India had a long way to go (i. e. with respect to India the progress in achieving this goal has been unsatisfactory and below the standard which it had set) the set target for 2015 (No. 1. C) Was to bring down the figure of 53.5% in 1990 to 25% by 2015 was not achieved, and ended up reaching only 40%. Millennium Development Goals (MDG) period were done with in 2015, next set of goals were announced in 2016 by United Nations named as Sustainable Development Goals, which covered 17 key areas that needs to be addressed by the UN Member countries. These Sustainable developments Goal 2 Targeted to Eradicate Hunger, improve Nutrition, promote sustainable agriculture, and achieve food security.

Recently, On 22nd November, 2017 the Union Agricultural Minister Mr. Radha Mohan Singh, has sent a proposal and urged United Nations for declaring the year 2018 as “International Year of Millets”, so that the affordable nutrition is available to everyone and thereby promoting the production of millets which are nutritious and affordable and have been

dying a slow death due to the lack of demand, despite being one of the most nutritious food grains. [22]

### A Web of Factors Causing Malnutrition

Numerous factors have direct impact on an individual's ability to receive/have proper diet that has the required nutrients, and therefore adds up to the complexity of factors that result in the occurrence of malnutrition in India (Figure 3).[23]



**Figure 3: Common Reasons for Prevalence of Malnutrition**

**Source:** Author's own

It is evident from above figure that the economic factors play an important role in overall affordability of the essentials and basic necessities. In any given case, the economic background of the household decides the level of necessities the family can afford without being a problem for their other needs. Comparatively, in India we have a significant class of population who have uncertain and un-uniform income pattern [24] especially in the labor class and agrarian population whose earnings are heavily dependent on the rains, thereby making the majority rural population vulnerable to unstable income. It is also important to note that almost 30% (22.40 Crore) of Indian population are living below the international poverty line, (i. e.< \$ 1.90 per day).[25]

Apart from income, there is lack of awareness among the general public with regard to personal healthcare, Hygiene, and balanced nutrition. Such awareness could be as simple as Hand washing techniques, Child feeding techniques, Cleanliness and adopting balanced diet depending on individual needs[26]It inessential, therefore to devise and implement newer ideas and methods to reach to the general public more effectively I . e Women and Children, who could in turn communicate their learning's to their families and other peers. The Indian households have a special bonding, which could used to benefit these campaigns. Such kind of campaigns shall be more effective and the results can be visible very easily.

The recent enactment of National Food Security Act, 2013 was one such move to eradicate hunger and provide greater access to adequate quantity of quality food at affordable prices to every Indian through PDS. The States & UT are required to identify the needy sections of the society who will be benefit out of this law which entitles the eligible rural and urban population 3/4th and ½ respectively to obtain food grains (five kg per person per month of rice, wheat, coarse grains at subsidized prices of INR 3/2/1 per kg, respectively) Along with supply of Food grains, the act also gives monetary benefits for maternity, girl child etc.

Most of the staff at the Anganwadi/ Balawadi centers are unable to play their role, for which they are recruited, to

address the problem of malnutrition due to lower wages being paid and lack of requisite training. [27] This is obviously linked with the amount of funding being allotted to these agencies and its effective utilization, which has been an issue for every government agencies meant for welfare activities across the globe.

A proposed policy would provide for adding essential vitamins and minerals (iron, folic acid, vitamin, iodine) to food items (rice, wheat flour, salt, edible oil, milk) sold in markets. The Food Safety and Standards Authority of India (FSSAI) has set nutritional benchmarks to ensure that manufacturers responsible for fortifying food add desirable levels of micronutrients to the food items. Valuable lessons in this regard have been learnt from practices followed in the Gajapati district of Odisha, where training was given to school staff engaged in preparing mid-day meals for school children so that, they are able to fortify the rice with iron for increasing its nutritional value. About 1,449 schools in the district have been covered under the programme, and the Central government is interested in extending this initiative, to other parts of the country as well. [28] According to the Department of Biotechnology (DBT), “clinical studies have substantiated that regular feeding for one year increases iron store and decreases anemia in school going children”. Care is however needed in ensuring that people do not consume iron beyond the required amounts, as some studies suggest a direct link between iron and diabetes. [29]

Needless to say, adequate funds are needed for the successful implementation of any nutrition scheme. In the case of India, with respect to centrally supported schemes such as ICDS, data show that the budgetary allocations have decreased over time. Between 2014-15 and 2015-16, financial allocations were halved from INR 166 billion to INR 83 billion. More recently, while the allocations have increased in absolute terms, the annual rate of change is down to 12.76 percent (Table 2). The national government maintains that the State governments must play a more pro-active role in combating malnutrition and themselves generate funds for this purpose.

**Table 2: Central Budgetary Allocations for Integrated Child Development Services Scheme**

Financial Year	Budgetary Allocations (in INR billions)	Annual Change (percent)
2013-14	163.12	-
2014-15	165.61	1.53
2015-16	83.36	- 49.66
2016-17	148.50	78.14
2017-18	167.45	12.76

**Source:** Ministry of Women and Child Development. Press Information Bureau releases, 19 March 2015 and 1 February 2017.

Article 47 of the Indian Constitution provides that it is the “duty of the State to raise the level of nutrition and the standard of living and to improve public health”. Compliance with this provision is seen in the form of nutrition missions launched by some State governments.

Maharashtra’s nutrition mission (2005), for instance, aims to reduce malnutrition in all its forms. The mission strategy includes the following aspects: deliver evidence-based interventions; focus on adolescent girls’ nutrition, education and empowerment; combine facility, outreach and community-based interventions to bring services and support closer to the people; and monitor pregnancy weight gain at every ante-natal care visit. For this purpose, a multi-sectoral action plan is in use.[30] Today, the mission is seen as a model because it has contributed to encouraging improvements in the people’s nutritional status.[31]



In Madhya Pradesh (2010), meanwhile, INR 500 million were allocated under the mission, and the following steps were taken: preparation of district-level action plans; initiation of pilot projects; monitoring and evaluation of progress indices; and provision of meals to pregnant women at Anganwadi centers. [32]

Similar initiatives have been undertaken in Karnataka (2010), Gujarat (2012), and Uttar Pradesh (2014). In 2015 a mission was also launched, with technical support from UNICEF, in Jharkhand where the situation of malnutrition is critical (see Table 1).[34] Some of the mission's goals and features are the following:

- Make the State malnutrition-free within 10 years;
- Create a database of pregnant mothers;
- Modernise Anganwad is through the use of corporate social responsibility funds;
- Improve nutrition awareness of communities;
- Foster inter-sectoral collaboration for nutrition action among departments.

Further, nutrition interventions and tracking progress cannot be done without sufficient information and reliable, updated data, and the operational is action of a national nutrition surveillance system. Thus, there exists the need to collect and maintain real-time data on various nutrition indicators using ICT and GIS.

Lack of sanitation is also an important determinant of malnutrition. In India, open defecation remains a severe problem as a significant proportion of the population either does not give importance to the use of clean toilets and therefore do not build them, or are in no position to build within their living spaces due to income or space issues. This situation is observed mainly in the rural areas as well as among the city's slum dwellers. Data from the National Sample Survey conducted in May-June 2015 show that more than half of India's rural population (52.1 percent) defecates in the open, while the prevalence among the urban proportion stands at 7.5 percent.[33] Poor sanitary conditions caused by open-defecation and other issues, in turn, lead to the incidence of diarrheal diseases; these diseases make children susceptible to stunting.[34] The government aims to make India open defecation-free by 2019, and accordingly, work is underway on the construction of household, community, public toilets under the Swachh Bharat Mission. Yet again, the implementation and maintenance is weak, as observed from the slow progress in meeting the targets, and the existence of several newly constructed but non-functional toilets.[35]

Besides the above-mentioned government interventions, judicial and civil society activism is making inroads in bringing down India's malnutrition rates.[36] For example, the Right to Food Campaign (launched in March 2014), which is an informal network of individuals and organizations, is the result of public interest litigation. Under the campaign, organized efforts are made to persuade State governments to attend to the most pressing demands of society, including proper nutrition.

## CONCLUSIONS

An overview of the malnutrition situation in India presented in this paper has shown that a sizeable proportion of the country's population is malnourished and anaemic, and for this, numerous factors are responsible. Some of these factors directly cause malnutrition among people, whereas many others affect indirectly. Significant among these are poverty; unemployment; ignorance and lack of education; unhealthy lifestyle; lack of access to nutritious food, safe water,



sanitation and hygiene; non-availability of reliable and timely data, and sufficient funds; and unimpressive performance by the government in the implementation of schemes.

Many of the reasons for the occurrence of malnutrition, as well as the solutions to overcome the challenge, are known. Attention, however, needs to be paid to understanding what prevents the nation from achieving its goals related to nutrition. Undoubtedly, the agencies of State governments have to adopt a comprehensive and coordinated multi-sectoral approach, which is formulated by taking into account the varied nature of local-level challenges. They have to demonstrate better governance, too. For its part, civil society must respond in a responsible manner. In particular, attention needs to be paid on building neighborhood health and nutrition profiles and carrying out interventions based on identified needs.

## REFERENCES

1. UNICEF, WHO, World Bank Joint Child Malnutrition dataset, updated May 2017. Available from: <https://data.unicef.org/topic/nutrition/malnutrition/>
2. Giri, Rujuta and Vanisha S. Nambiar. 'Dietary habits, parental history and dual burden of malnutrition among affluent school going children', *International Journal of Current Research*, 8 (5): 31446-31451, May 2016.
3. Bierly, Allison. 'Certain foods linked to long-term weight gain'. *National Institutes of Health*, 11 July 2011.
4. FAO, IFAD and WFP. *The State of Food Insecurity in the World*. Rome: FAO, 2015.
5. Undernourishment is “a state, lasting for at least one year, of inability to acquire enough food, defined as a level of food intake insufficient to meet dietary energy requirements” (FAO. *Op. cit.*, p. 53).
6. FAO, IFAD and WFP. *Ibid*; *International Business Times*. 'India has most number of hungry people in the world: Report', 31 May 2016.
7. Data on different nutrition indicators are generated through National Family Health Surveys (NFHS). So far, four rounds of surveys have been conducted, i. e., NFHS-1 (1992-93), NFHS-2 (1998-99), NFHS-3 (2005-06) and NFHS-4 (2015-16).
8. Ranjitha. D et al., Curry Leaves (*Murraya Koenigii*) Incorporated Iron Rich Curd: Production, Phytochemical, Nutritional and Proximate Composition, *International Journal of Medicine and Pharmaceutical Sciences (IJMPS)*, Volume 6, Issue 4, July - August 2016, pp. 13-16
9. IFPRI. *Global Nutrition Report, Nutrition Country Profile – India, 2015: data beyond 2006 are not available*.
10. NFHS – 4. 2015-16. Anaemia implies deficiency of red cells or of haemoglobin in blood, which causes weakness.
11. IFPRI. *Op. cit.*, data beyond 2007 are not available.
12. *The Indian Express*. 'Health ministry kicks off programme to reduce anaemia among adolescents', 30 December 2015.
13. NFHS – 4. 2015-16; According to the WHO definition, a BMI of less than 18.5 kg. per square meter indicates severe thinness.
14. Mousumi Das & Suman Kalyan Mandal, Assessment of Nutritional Quality and Anti-Nutrient Composition of Two Edible Grasshoppers (Orthoptera: Acrididae) - A Search for New Food Alternative, *International Journal of Medicine and Pharmaceutical Sciences (IJMPS)*, Volume 3, Issue 5, November - December 2013, pp. 31-48
15. Bhargava, Anurag. 'Undernutrition, nutritionally acquired immunodeficiency, and tuberculosis control'. Editorials, *British Medical Journal*, October 2016.
16. NFHS – 4. 2015-16.

17. *Ibid.*
18. Bierly, Allison. *Op. cit.*
19. FAO, IFAD and WFP. *The State of Food Insecurity in the World*, p. 46, *Op. cit.*
20. Ministry of Health and Family Welfare. *Annual Report 2015-16, Chapter 3 – Maternal and Adolescent Healthcare*, p. 26. New Delhi: Department of Health and Family Welfare.
21. NIMS, ICMR and UNICEF. *Infant and Child Mortality in India – Levels, Trends and Determinants, Fact Sheet; Ministry of Health and Family Welfare. Annual Report 2015-16, Chapter 4 – Child Health Programme*, p. 37. New Delhi: Department of Health and Family Welfare; NFHS - 4.
22. NIMS, ICMR and UNICEF. *Infant and Child Mortality in India – Levels, Trends and Determinants, Fact Sheet; Ministry of Health and Family Welfare. Annual Report 2015-16, Chapter 4 – Child Health Programme*, p. 37. New Delhi: Department of Health and Family Welfare; NFHS - 4.
23. *Ibid.*
24. Union Minister, Mr. Radha Mohan Singh urges United Nations to declare 2018 the “International year of Millets” - <https://timesofindia.indiatimes.com/india/india-proposes-the-un-to-declare-the-year-2018-as-international-year-of-millets/articleshow/61756112.cms>
25. For writing this section of the paper, the author has also reviewed the UNICEF conceptual framework which describes three levels of causes of undernutrition. Available from: <https://www.unicef.org/nutrition/training/2.5/4.html>
26. IDFC. *India Rural Development Report 2013-14*. Delhi: Orient BlackSwan.
27. *Business Today*. ‘India has highest number of people living below poverty line: World Bank’, 3 October 2016.
28. Planning Commission. *Addressing India’s Nutrition Challenges, Report of the Multistakeholder Retreat*, p. 25, 7-8 August 2010.
29. Tripathi M., et al. ‘Perceived responsibilities and operational difficulties of anganwadi workers at a coastal south Indian city’, *Medical Journal, D. Y. Patil University*, Vol. 7, Issue 4, pp. 468-472, 2014.
30. Rice-fortification was first launched in Odisha by the UN (under their World Food Programme).
31. Simcox, Judith A. and Donald A. McClain. ‘Iron and Diabetes Risk’, *Cell Metabolism*, 17 (3): 329-341, 5 March 2013.
32. RajmataJijau Mother-Child Health and Nutrition Mission – Government of Maharashtra. Available from: <http://www.mahnm.in/about>
33. Krishna, Vandana. ‘The Maharashtra nutrition mission’. Seminar, No. 681, May 2016.
34. Government of Madhya Pradesh, Women and Child Development Department. ‘Atal Bihari Bajpai Child Health and Nutrition Mission’. Available from <http://www.mpwcd.nic.in/web/wcd/sc-ic-abm>
35. UNICEF. ‘Jharkhand Nutrition Mission Launched’, 13 November 2015, Available from <http://unicef.in/PressReleases/400/Jharkhand-Nutrition-Mission-Launched->
36. [National Sample Survey Office. *Swachhta Status Report 2016*. Ministry of Statistics and Programme Implementation.
37. UNICEF. *The Impact of Poor Sanitation on Nutrition, Policy Brief*. London: SHARE Research Consortium in collaboration with the WASH and Nutrition Sections of UNICEF India, 2015; Spears, Dean. ‘The nutritional value of toilets: How much international variation in child height can sanitation explain?’, Working paper. Delhi: Delhi School of Economics, June 2013.

38. *The Hindu*. ‘Most of rural India still opts for open defecation: NSS Report’, 18 September 2016.
39. Mohmand, Shandana Khan. ‘Policies without politics: Analysing nutrition governance in India’. *Institute of Development Studies*, February 2012.

