

## The status of hunger and Malnutrition in India after the intervention of Food Security Programmes by the Government

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**Abstract:** India became one of the major contributors of Global Hunger being ranked 107th out of 121 countries in Global Hunger Index, 2022. The most convincing cause of this low ranking seems to be the high proportion of underweight children in India. The fifth survey conducted by National Family Health Survey in 2019-2021, reported that 32.1% of children below the age of 5 years are underweight and 35.5% are too short for their age. The Food Corporation of India (FCI) advocated many Food Security Programmes which were executed by the Government of India at national level to conquer the problem and to enhance the Food and Nutritional Security of the nation. The most successful step taken by the Government is the National Food Security Act passed in 2013, covering nearly 2/3rd of the country's total population with the objective to provide for food and nutritional security in human life cycle approach, by ensuring access to adequate quantity of quality food to people at prices which are affordable to all so as to live a life with respect and for matters connected therewith or incidental thereto. Economic growth is the first step to eradicate or control the Hunger and Malnutrition in any country. So, the NFSA, 2013 encompasses the Mid-Day Meal Scheme, Integrated Child Development Services and the Public Distribution System to ensure the supply of free or cheaper food. The upgradation of the PDS to Targeted PDS has been reported to be effective in increasing caloric intake but have very little impact of anthropometric changes of the subjects. Many researchers examine the potential impact of the strengthening of the ICDS and MDM on child nutrition. However, the literature on ICDS and MDM is ambiguous. Some of the earlier studies failed to find a strong relationship between availability of ICDS program and nutritional outcomes while in contrast, the recent studies have shown the presence of Anganwadi centers to operate ICDS to improve children's nutrition, although often for selected groups of children. This shows that mere the implementation of the programmes is not enough to tackle the current situation. The government must chalk down a detailed action plan to achieve food and nutrition security with timelines and monitoring mechanisms attached to free India from malnutrition problem that directly affects the human capital formation of the nation.

**Key words:** Malnutrition, Hunger, National Food Security Act, Mid-day Meal scheme, Integrated Child Development Services, Public Distribution System

## Introduction

Being basic necessity of life and essential for sustainment, an adequate intake of food, in terms of quantity and quality, is the key to healthy life. The definition of food security encompasses the four dimensions: accessibility, availability, utilization and stability, which are necessary for a household to be categorized as food secure, when everyone, every time, have physical and economic access to sufficient, safe and nutritious food that fulfils their dietary requirements and food preferences for an active and healthy life [1]. Food security has been one of the major developmental objectives in world. Food security is a human right, yet close to 128 million of the world population is reported to be facing the hunger crisis in 2021, COVID-19 Pandemic being the major factor of this food insecurity. Furthermore, the Russia-Ukraine War erupted in Feb. 2022, which fueled the weak and slow recovery of food insecurity and world hunger [2]. Globally there has been a modest decline in food insecurity; however, the decline has been disproportionate. Containing 17.76% of world's population, India has recently achieved the title of most populous country of the world, with over 1.4 billion people residing in the country. In the fast-paced world, India has also seen stupendous growth over the period of past two decades. Gross Domestic Product has increased 3 times. Similarly, food grain production has increased 2 times. However, in spite of this remarkable industrial growth and despite being able to produce adequate food to feed its population, a large segment of India's population, especially women and children, are still not being provided the access to food. In fact, United Nations report "Nutrition and Food Security in India" stated India is one of the world's largest net food exporters, with the production of Food grains nearly 300 million in the year 2019-2020 [3]. Yet, according to Global Hunger Index 2022, the rank of India is 107th out of 121 countries. India is at the serious level of hunger with the score of 29.1, with 16.3 per cent of the undernourished population in India and 3.3% children dying before five years of age from poor diet related illness. The fact that 35.5 per cent of the children aged under five in India are stunted (too short for their age), while 19.3 per cent suffer from wasting i.e., low weight for height, as reported by Global Hunger Index, 2022, cannot be ignored [4]. India being number one country in context of population, it becomes important to emphasis on food security in the country, to handle the situation at Global Level. But in context of Food Security in the country, several important issues have emerged. These can be catalogued as (a) the modernization of the economy and its influence on agriculture and food security; (b) the foundation of the WTO and the agreement on Agriculture; (c) climate change and its effect on food production and prices; (d) the prevalence of hunger and poverty synchronizing with high levels of food stocks; (e) the introduction of the targeted Public Distribution System (f) the "Right to Food" campaign (g) the National Food Security Bill and (h) the impact of Covid 19. These important issues have become limiting factors for food security in the country. The execution of the National Food Security Act (NFSA) 2013, with the mission to eliminate hunger by 2030, is one of the major steps taken by the Government to bring down the incidence of undernutrition and hunger in the country and for the betterment of the food and nutrition security. Not only in context of population, India is also leading the world being a country with one of the largest numbers of food schemes in the world to ensure food security, by providing the availability and accessibility of good quality food for everyone, everywhere [5].

## Historical Background

In Indian history major backdrop was faced by the population, the worst Bengal famine in 1943 due to which acute shortage of food, starvation, hunger was occurred and many other situations arose like agricultural production was low/depended on import, poor distribution and networking, very low purchasing power, inadequate dietary intakes, poor quality of drinking water, unhygienic environment/sanitation facilities, illiteracy and low awareness, poor access to health care facilities and high rates of under nutrition & micro-nutrient malnutrition. After the recovery from the famine during 1950 – 2008, yield of food grains increased at an average annual rate of 2.5% compared to the rise of population which averaged 2.1% during this period. The green revolution was a step towards self-sufficiency in agricultural production. Post liberalization and privatization period (1990-2008), the rate of growth of food grains production decelerated to 1.2%, lower than the annual rate of growth of population at 1.9%. While increased investments and technological breakthroughs can improve availability, they may not necessarily translate into increased accessibility and absorption of food [5]. To eliminate hunger and under nutrition, the Government of India has implemented several initiatives to achieve food security among the population, one approach is price control through public distribution system, second through the programme called food for work, and third is feeding programme at large scale such as the Integrated Child Development Service (ICDS) for children up to 0-6 years of age and pregnant and lactating mothers and National Programme of Nutritional Support to Primary Education (NP-NSPE). The Centrally Sponsored Scheme of Mid-Day-Meal Scheme (MDMS) was launched in 1995 [6]. National Food Security Act of 2013 has been executed to provide an ample amount of quality food at affordable prices to people to live a life with dignity. Furthermore, in 2017 the Zero Hunger Programme was introduced, to improve the small farmer productivity and income hence increase the food accessibility and reduce the stunting in children of aged up to 2 years, by the Indian Council of Agricultural Research, Indian Council of Medical research, the M.S. Swaminathan Research Foundation and Biotechnology Industry Research Assistance Council. Food fortification is also being done to cope up with the hidden hunger i.e., micronutrient deficiencies [7].

### Nutritional Status

Now let us turn our attention towards nutritional status of the most vulnerable groups namely women and children. The data provided by the National Family Health Survey (NFHS) indicates that the proportion of underweight children declined marginally from 35.7 percent in 2015 -16 to 32.1 percent in 2019-21 similarly stunting among children has also declined. While the percent of children wasted has been reduced but that of severely wasted children in the country has increased as depicted in Table 1 below.

**Table-1: Trends in Child Malnutrition**

Indicators	NFHS-4 (2015-16)	NFHS-5 (2019-21)
Nutritional Status of Children	Total	Total

Children under 5 years who are stunted (height-for-age)	38.4	35.5
Children under 5 years who are wasted (weight-for-height)	21.0	19.3
Children under 5 years who are severely wasted (weight-for-height)	7.5	7.7
Children under 5 years who are underweight (weight-for-age)	35.7	32.1

Source: Factsheets NFHS- 5 & 4 [8]

### *Determinants of Malnutrition*

The four major components that dominate the level of nutrition in most developing countries are (i) household food security (caused by low availability and access) (ii) inefficient maternal care and child care operation (iii) scarcity of healthcare services, clean drinking water and sanitation; and (iv) high gender inequality. Besides these the demographic factors like age of the child, size of the family, order of birth, sex, socioeconomic status of the children can also play a major role in malnutrition. There are direct as well as indirect or institutional determinants of under nutrition, while food and micronutrient intake, diet diversification, health services, water and sanitation are direct factors, empowering women and gender equality, growth in agricultural production and development of the rural non-farm sector are indirect or institutional factors.

### **Current scenario of India**

#### **Production performance of India**

##### **Per Capita Food Availability**

The per capita availability of food is a balance of population and food production with accommodations made for exports, imports, wastage, livestock feed, seeds and stocks at the beginning of the year.

##### **Availability = Production + Imports - Exports + Change in stocks**

The net availability of food grains per unit population estimates for a particular year gives per capita availability of food grains in terms of kg/year. Any changes in per capita net availability are mainly due to fluctuations in production on account of variations in weather conditions, increasing population, change in stocks etc.

##### **Production and Availability of Food**

With an annual increase in production of food grains India is among the top producers of several crops such as wheat, rice, pulses, sugarcane and cotton. It is globally leading the production of milk and is second highest producer of fruits and vegetables. In the financial year 2021-22, the areas under cereals, pulses and oilseeds have been recorded to be about 102, 31 and 29.2 million hectares, respectively. The food grain production of 300 million tonnes was recorded in 2019-20. The highest food grain production of 323.55 million tonnes was recorded in 2022-23 crop year, which is 7% higher than the previous year. For the year 2023-24, target of 332 million tonnes of total food grain production has been set.

Wheat production is estimated to rise by 4.1% to 112.74 million tonnes in 2022-23, compared to 107.7 million tonnes in 2021-22, while production of pulses has reached to 28 million tonnes in 2022-23 and for the year 2023-24 the target of 29.25 million tonnes production is estimated to be achieved. Total production of Rice has been increasing gradually since 2017, which was 109.7 million tonnes in 2017, 188.87 in 2020 and in 2023 the production is recorded to be

135.54 million. Total Oilseeds production in the country is estimated at record level of 44 million tonnes, in marketing year 2023-24, which is nearly 4 million tonnes more than that of marketing year 2022-23.

In terms of area of cultivation for cotton, India ranks first globally, with the area of 12 million hectares that forms 36% of the total area cultivated for cotton all over the world. Whereas in terms of production, India ranks 38th with the net production of 510 kg/hectare in the year 2021-22, which has increased from 462 kg/hectare in 2020-21. Also, the production of mustard has shown an increase of 40% from 9 million to 12.8 million tonnes in the past three years. As 2023 is regarded as the International Year of Millets, the production of millets is also to be increased from 15.9 million in 2022-23 to 17 million tonnes in the year 2023-24, keeping in mind the global increase in demand of millets in the International Year of Millets [9].

The horticulture production of the country during 2021-22 is estimated to be around 342.33 million tonnes which is marginally higher (2.3%) as compared to 2020-21. The estimated production of fruits has reached 107.24 million tonnes in the year 2021-22 which has increased from 102.48 million tonnes in the year 2020-21. As of the production of vegetables, it is estimated to be around 204.84 million tonnes which is marginally higher than the previous year, i.e., 200.45 million tonnes in 2020-21. Production of onion is estimated to be around 31.27 million tonnes which is 4.63 million tonnes higher than the previous year (2020-21). Production of potato is estimated to be around 53.39 million tonnes in 2021-22 which was 56.17 million tonnes last year. Production of tomato is estimated to be reduced to 20.33 million tonnes from 21.18 million tonnes in 2020-21[10].

India is the largest producer of milk in world. During the years 2020-21 and 2021-22 the milk production registered an annual growth rate of 5.29 %. The per capita availability of milk is around 444 grams per day in 2021-22. The per capita availability of milk in India has increased from 176 grams per day in 1990-91 to 322 grams per day by 2014-15 and 444 grams per day in 2021-22. This represents a consistent growth in availability of milk and milk products for the growing population. The total poultry population in our country is 851.81 million (as per 20th Livestock Census) and egg production is around 129.60 billion during 2021-22. The per capita availability (2021-22) is around 95 eggs per annum [11,12].

Despite relatively high rates of economic growth India has failed to reduce hunger and under nutrition. Experts claim that despite abundant production of grains and vegetables, entrenched corruption and inefficiency in the distribution chain prevents the benefits from reaching the poor. The result is that India tops the world hunger list with 194.6 million (over 15 per cent of the country's population) of undernourished people [13].

### **The National Food Security Act-2013**

The standards of food security are very low but the extent of hunger is huge in India. in spite of faster and more democratic political system India is still unable to provide at least two meals a day to its population. The outcomes of hunger and food insecurity can be understood by analyzing the level malnutrition in the country over the years. Considering the level of hunger, food insecurity and level of undernourishment, importance of Food Security Act 2013 cannot be ignored. No matter, how high is level of growth being achieved by India; it cannot be considered sustainable unless death of common man due to starvation is stopped. After the Act passed several limitations has been discussed by academicians. The main focus of this Act is to provide for food and nutritional security in human life cycle approach, by ensuring access to adequate quantity of quality food to people at prices which are affordable

to all so as to live a life with dignity and for matters connected therewith or incidental thereto. The NFSA, 2013 converts into legal entitlements for existing food security programme of the Government of India. It includes the Mid-Day Meal Scheme, Integrated Child Development Services and the Public Distribution Systems. Further the NFSA 2013 recognizes maternity entitlements. The MDM Scheme and ICDS Scheme are universal in nature whereas the PDS will reach about two third of the populations (75% in rural areas and 50% in urban areas). Every person belonging to priority households, shall be entitled to receive 5 kgs of food grains per person per month at subsidized prices by this act and the poorest of the poor (Antyodaya) households are entitled to 35kgs/household/month. Coverage of priority and Antyodaya households (“eligible households”) is up to 75% of the rural population and up to 50% of the urban population. Subsidized prices (for a period of three years) for rice, wheat and coarse grains are maximum rupees of 3, 2 and 1 per kg respectively. There are several critics of this Bill. This work counters with two crucial critiques that this act ignores supply side limitation of India and drawbacks of distribution system and second, it does not specify the role of market [14].

**Limitations of National Food Security Act 2013:** This law has created a broad framework of legal entitlements for 67 percent of the Indian population. The term priority household remains the bone of contention as the Indian Planning Commission (now the Niti Aayog) has not yet reached to a reflective definition of poverty and identification has been left to the discretion of the state governments. An expert group set up in 2009 to advise the Ministry of Rural Development estimated that about 61% of the eligible population was excluded from the Below Poverty Level (BPL) list. Various Committees have been established with different estimates of the poor. Whenever targeted benefits are provided to certain sections of the population, significant inclusion and exclusion errors have taken place in the past. So far, NFSA has been implemented only in 33 states and union territories, still some states are seeking extension [15].

**Recommendation:**

- Expand ambit of National Food Security Act (NFSA) by focusing on individual empowerment to feed oneself and family in dignity and focus beyond welfare schemes; promote access to natural resources; support production and utilization of coarse grains grown by local communities for the PDS.
- Include nutrition in all PDS and promote local procurement of all food grains from small and marginal farmers in order to ensure culturally acceptable food, reduce food wastage in transportation and empower local communities.
- Expand ICDS centers to counter malnourishment and provide child care as per Court's orders including converting existing centers into crèches and appointing a second worker.
- Increase in the quantity of food grains instead of restricting to 5 family members, knowing the fact that the majority of Indian households are large.
- New entry should not be frozen as it denies the right to food to a child born after the census till the next census, for 10 years which is the most important time for child's mental and physical growth and needs appropriate attention and nutrition.
- A complete balanced diet should include proteins, carbohydrates, vitamins and fats which go beyond wheat, rice and include edible oils and pulses as well.

- The Act must be sensitive to the migrants and the NFSA does not include migrants as a beneficiary, violating the Article 21 of the Indian constitution [13].

### Public Distribution System

The Public Distribution System is formulated to improve food security at the very basic level of household in India, which makes it an Indian food security system. Inaugurated by the Government of India under Ministry of Consumer Affairs, Food, and Public Distribution and are administered jointly by state governments in India, it distributes government sponsored food and non-food items to India's poor. This scheme was launched in June 1947. The PDS supply the basic 'ration' commodities namely rice, wheat, sugar, edible oils and kerosene to identified and registered beneficiaries through a network of dedicated retail outlets, known as fair price shops at fixed prices that are normally lower than open market prices. The PDS with its national network of over 5.35 lakh fair price shops. It has changed over many decades as an important instrument of food policy in India to get along with scarcities, controlling prices of essential commodities in the open market and securing physical availability of essential supplies at subsidized rate for the poor. The scheme however is supplemental in nature and is not intended to provide the entire requirements of households [5].

The presently operating Targeted Public Distribution System (TPDS) caters to all households in India and can thus be said to have ubiquitous coverage. However, these households/beneficiaries are treated differently on the basis of their income. The whole Indian household population is broadly classified into two income groups, those above the officially accepted poverty line are categorized as above poverty line or APL households; and those households below the poverty line are named as Below poverty Line or BPL households. Moreover, there exists a sub-category of the BPL households who constitute the “poorest of the poor” and who are categorized as the Antyodaya Anna Yojana (AAY) households consisting of the old and distressed population usually uncared for and abandoned by the younger members of the family. Left to fend for themselves they are most vulnerable requiring special treatment and assistance. The AAY category is thus provided their entitlements at specially subsidized prices, which are considerably lower than the subsidized prices fixed for the BPL households [16].

The APL group is provided a fixed monthly privilege at prices that cover “economic costs” thereby not involving any subsidy, whereas the BPL households are being provided a monthly entitlement of 35 kg of cereals and a fixed monthly entitlement of other basic necessities such as sugar and Kerosene oil at subsidized prices remarkably lower than economic cost. The AAY beneficiaries are also being supplied a fixed entitlement of 35 kg of food grain at specially subsidized rates of Rs 2 per kg of wheat and Rs 3 per kg of rice. It is important to mention that all the household categories of beneficiaries enveloped under the TPDS are effectively protected from open market prices, which normally rule at higher levels as compared to economic cost.

**Table 2: Central Issue Price (CIP) in Rs. per kg**

Commodity	APL	BPL	AAY
Rice	7.95	5.65	3.00
Wheat	6.10	4.15	2.00
Coarse grains	4.50	3.00	1.50

The Ministry of Consumer Affairs and Public Distribution has two Departments: (i) Food and Public Distribution, and (ii) Consumer Affairs. This note examines the allocations for the Department of Food and Public Distribution.

**Table 3: Allocations for the Ministry (Rs crore)**

Department	2020-21 Actuals	2021-22 Revised	2022-23 Budgeted	% change in 2017-18 over 2016-17
Food & Public Distribution	5,55,432	3,02,000	2,15,960	-28%
Consumer Affairs	11,365	2,454	1,725	-30%
Total	5,66,797	3,04,454	2,17,684	-28%

Sources: Expenditure Budget, Union Budget 2022-23; PRS.

**Department of Food and Public Distribution** is answerable for the food security through procurement, storage and distribution of food grains. The Food Corporation of India (FCI) is accountable for some of these functions. The Department has been allocated Rs 2,15,960 crore for 2022-23, which is 99% of the Ministry's allocation. Allocation to this Department accounts for 28% reduction than the revised estimate of 2021-22 of the central government's budgeted expenditure, [17].

The spreading awareness among consumers about their rights, protecting their interests and preventing black marketing is looked after by Department of Consumer Affairs [5]. In 2021-22, the Department has been allocated Rs 1,725 crore, which is -30% of the Ministry's allocation. As seen in Table 3, food subsidy has been the largest component of the Department's expenditure (99% in 2021-22), but expenditure on food subsidy has decreased. Food subsidy is given to FCI under the National Food Security Act, 2013 (NFSA) or to states for the decentralized procurement (DCP) of food grains. NFSA covers 80 crore people and it is mandated to cover 75% of the population from rural areas and 50% from urban areas [18].

The Public Distribution System (PDS) sought to provide food security to people below the poverty line. Over the years, the Department's expenditure on food subsidy has increased, while the ratio of people below poverty line has reduced from 54.9% in 1973-74 to 21.9% in 2011-12 and is 15% in 2019-21 (the expenditure is reduced). A similar trend can also be seen in the proportion of undernourished persons in India, which reduced from 24% in 1990 to 15% in 2014 which has now increased to 16.5%, as of 2020-2022 count. The NFSA guarantees wheat and rice to beneficiaries, to ensure nutritious intake of food but there has been a change in the nutritional intake pattern among people both in rural and urban areas. The share of cereals or food grains as a percentage of food consumption has reduced from 13% to 8% in the country, whereas that of milk, eggs, fish and meat has increased [8]. This indicates a reduced priority for wheat and rice, and an increased preference towards other protein rich food items. The NFSA



states that the state and central governments should undertake steps to diversify commodities distributed under PDS [18].

#### ***Major Concerns Regarding the PDS***

The reports of the High-Level Committee on Long-term Grain Policy and the Performance Evaluation of the Targeted Public Distribution System [19] have highlighted some major problems in the present TPDS.

There are high exclusion errors because of the improper identification of beneficiaries, the unfeasibility of fair price shops, its inability to effectively carry out the price stabilization function and high levels of leakages and diversion of grain to the open market.

There are yet other discrepancies in the distribution system such as irregular and infrequent supply of food grains by fair price shops, the inefficiency of the Food Corporation of India, proper system of inspection of entitlements are lacking, low margins and negligible profitability for fair price shops.

***Open-ended Procurement:*** Acceptance of all incoming grains even if buffer stock is filled, which creates a shortage in the open market. The recent implementation of National food security act would only increase the quantum of procurement resulting in higher prices for grains. The cavity in required and existing storage capacity. Inadequate storage capacity with FCI. Rotting or damaging of food grains on the CAP or Cover & Plinth storage. Inaccurate identification of beneficiaries. Illicit Fair Price shops: The shop owners have created huge number of fake cards or ghost cards (cards for nonexistent people) to sell food grains in the open market. In transit leakage and deviation of food grains.

#### ***Suggestions for refinement***

There are a number measures that are recommended to be taken for ameliorating the efficacy of the procurement and distribution system. The NFSA states that the center and states should introduce schemes for cash transfers to beneficiaries. Various experts and bodies have also suggested replacing TPDS with a Direct Benefit Transfer (DBT) system [20].

Advantages and disadvantages of these techniques of delivering benefits have been mentioned below.

***TPDS:*** TPDS assures beneficiaries that they would receive food grains, and protects them against the rapid inflation and price volatility. Further, food grains are delivered through fair price shops in villages, which are easy to access [21]. However, high leakages have been encountered in the system, both during transportation as well as distribution. These include pilferage and errors of incorporation and omission from the beneficiary list. In addition, it has also been postulated that the distribution of wheat and rice may cause a disparity in the nutritional intake. The reports of receiving poor quality food grains as part of the system have also been registered by beneficiaries.

***Cash Transfers:*** There is a need to increase the choices available with a beneficiary for the cash transfer, and to provide the required financial assistance. The costs of DBT is argued to be lesser than TPDS, owing to lesser costs incurred on transport and storage. These transfers may also be undertaken electronically. It has been argued that cash received as part of DBT may be utilized on non-food items, which might include illegal choices. Further, the beneficiaries might get exposed to inflation due to such system. In this regard, the low penetration and access to banking in rural areas must also be considered.

The Cash Transfer for Food Security Rules, 2015 were notified in September 2015. The Rules ensure the provision of DBT by states with the approval of the centre, or in identified areas. As of March 2016, DBT for food subsidy was being enforced on a pilot basis in Puducherry, Chandigarh, and Dadra and Nagar Haveli. Note that the government has launched DBT for other subsidies such as LPG and fertilizer across the country.

The High-Level Committee on Restructuring of FCI in 2015 had also suggested the inclusion of biometrics and Aadhaar to plug leakages in PDS. Such transfers could be linked to Jana Dhana account, and be indexed to inflation. As of November 2016, 107.8 crore Aadhaar cards had been proclaimed, covering 89% of the population.

The decentralization of procurement and distribution has become necessary to improve and strengthen the PDS.

A greater and more active involvement of the panchayats in the PDS can significantly improve access at the village level [22].

For effectively tackling and plugging the diversion as well as other malpractices which hinder the potential outcomes, improving the turnover and margins of fair price shops, provision of credit to enable constant lifting and sale of commodities and the regular surveillance of retail sales is necessary.

Each state government is required to seriously review the number of retail outlets keeping their emphasis on an adequate number of well-equipped and financially practicable fair price shops rather than a proliferation of some useless and non-functional outlets supposedly licensed for providing location convenience to beneficiaries.

The issuance of smart cards to beneficiaries can become helpful for greater accountability and transparency and may come out to be a useful tool for easier computerization of records.

Technology based reforms are also suggested. Technology based reforms: transparency can be ensured in the whole process with the introduction of end-to-end computerization. It would help to reduce leakages and diversion of the supplies to a great extent [23].

Different states undertook various types of reforms which can be used at national level, as:

**Linking of Aadhaar and digitization of ration cards:** This made online entry and verification of beneficiary data more possible, enabling the online tracking of monthly entitlements and receipt of food grains by beneficiaries.

**Computerized Fair Price Shops:** automation of FPS by installing 'Point of Sale' device to swap the ration card, which made authentication the beneficiaries and keeping records of quantity of subsidized grains given to a family more effective and efficient.

**DBT:** Under the Direct Benefit Transfer scheme, cash is transferred to the beneficiaries' account instead of food grains subsidy component, giving them liberty to buy food grains from anywhere they want in the market. For taking up this model, pre-requisites for the States/UTs would be to complete digitization of beneficiary data and seek Aadhaar and bank account details of beneficiaries. It has been predicted that cash transfers exclusively could save the exchequer Rs.30,000 crore every year.

**Use of GPS technology:** Use of Global Positioning System (GPS) technology can be used to prevent diversion by tracking the movement of trucks carrying food grains from state depots to FPS.

**SMS-based monitoring:** during the dispatch and arrival of TDPS commodities, the citizens with registered mobile numbers can receive/send SMS alerts which allows monitoring by citizens.

**Use of web-based citizens portal:** Public Grievance Redressal Machineries, such as a toll-free number for call centres to register complaints or suggestions [24].

### **Mid-Day-Meal-Scheme (MDMS)**

Education is thought to be central to economic development, leading to higher productivity and living standard. Mid-day-meal is one important policy and the main intension of it is to lower the cost of schooling and also to improve child nutrition to foster learning, thereby increasing returns to education. The Mid-Day-Meal-Scheme (MDMS) is a school meal programme of the Government of India launched in 1995 designed to improve the nutritional status of school aged children nationwide. The main objectives of this scheme are to improve the nutritional status of children in classes one through seven in government schools and government-aided schools. To encourage children from disadvantaged backgrounds to attend school regularly and help them to concentrate in school activities and to provide nutritional support to students in drought-ridden areas throughout summer vacation. The central government provides free food grains to the state and union territory governments at the rate of 100 grams per child per school day from the nearest Food Corporation of India (FCI) godown and also the cost of transporting the food grains from the nearest FCI to the Primary School. The scheme provides assistance for meeting the cooking cost also. The Scheme estimates a cooked mid-day-meal with a minimum of 450 calories and 12 grams of protein to all children studying in class I to V and for Upper Primary meals consist of 700 calories and 20 grams of protein by providing 150 grams of food grains (rice or wheat) per child per school day [25].

#### ***Issues regarding the MDMS***

- The problems relating to the scheme were reflected in the performance audit report on the Mid Day Meal Scheme by the Comptroller and Auditor General of India [26].
- The report shows the lack of any system of cross checking the enrolment data furnished by the state governments. It was also indicated that in most states children were not given micronutrient supplements or de-worming medicines.
- The other problems that the scheme encountered are the lack of satisfactory infrastructure for the clean and hygienic operation of the programme, unprofessional and unsafe storage of food and other cooking materials, as well as poor and adulterated quality of ingredients used. This serious neglect of quality and hygiene has recently even led to the sickness and death of school children.

#### ***Suggestions for Improving the MDMS***

Keeping in mind the various flaws and limitations of this important nutritional intervention, the following recommendations are being made for its improvement.

- The local community, the PRIs and NGOs, must manage the MDMS and should not be contractor-driven.
- Promote the use of locally grown and procured nutritionally rich food items such as leafy vegetables and pulses. This may be enhanced by promoting kitchen gardens in the school campuses with the active assistance and support of the corresponding state government, department or line agency.
- Proper infrastructure for the MDMS should be mandatory, including cooking sheds, storage space, clean drinking water and proper cooking utensils.

- The MDMS should be inclusive with the school health services and must include immunization, de-worming, growth monitoring, health check-ups and micronutrient supplementation.
- The role of the Panchayat and local parents must be ensured in this regard.
- If any act of social discrimination in the MDMS, which may be detected or reported to the authorities, serious and prompt action must be taken after due and proper investigation by a competent authority.
- The regular social audit of the MDMS and its concurrent monitoring by independent agencies must be carried out [27].

### **The Integrated Child Development Services (ICDS)**

ICDS was established on 2nd October 1975 with the following intentions ; 1) Inclusive development of children up to the age of six years, prioritizing children up to the age of two year, 2) to bring down the occurrence of mortality, morbidity, malnutrition and school termination; 3) to attain the effective co-ordination of policy and administration amongst the various departments to encourage child development; and, 4) to intensify the role of the mother to safeguard the normal health and nutritional needs of the child by taking care of proper nutrition and health education. The objectives are sought to be achieved through the provision of a package of services such as basic health check-ups, immunization, referral services, supplementary feeding, non-formal pre-school education, and the needed guidance on essential health practices and nutrition. The ICDS team comprises the Anganwadi workers and helpers, supervisor, Child Development Project Officers (CDPO), District Programme Officers, Medical Officers, Auxiliary Nurse Midwife and Accredited Social Health Activist. In spite of its extension and acceptability over the last three decades its impact has been limited. It is seen that the problem of child and maternal malnutrition still persists. Child malnutrition has not declined significantly and it is reported that anaemia among children and women has increased with as many as one-third of all adult women being undernourished. The services have also had a limited coverage and outreach. The solution thus lies in increasing its coverage to ensure effective universalization, changing and improving its design, and planning its effective implementation in order to achieve its objectives [28].

#### **Issues**

- Despite its extension and acceptance over the last three decades its impact has been limited.
- It is seen that the problem of child and maternal malnutrition still persists.
- Child malnutrition has not declined significantly and it is reported that anaemia among children and women has increased with as many as one-third of all adult women being undernourished.
- The services have also had a limited coverage and outreach [28].

#### **Measures to Improve the ICDS**

These suggestions, which are very inclusive as well as administratively attainable, are as follows:

- The spending on infant and young child nutrition during the first 24 months when malnutrition is most frequent and adversely affects the very foundations of life and development, should be increased.
- Each centre must have the necessary minimum infrastructure and equipment for providing effective services.
- Minimum two freshly cooked meals (breakfast and lunch) should be provided.
- Take home Rations (THR) for children who are below the age of three years, should be provided.
- Weaning foods are also crucial, the budget for which should be significantly increased.

- The programme needs local involvement and control to maintain and sustain services of good quality. It is therefore essential to involve the active participation and control of Panchayats and other community groups [29].

### Key Recommendations

- ✓ Control on Inflation is a most essential and immediate step that needs to be taken by the policy makers for which sufficient political will needs to be exhibited since ascending food prices often result in a descending food consumption, both quantitatively and qualitatively.
- ✓ The dietary diversification of the poor comes out to be a major challenge to food security. If cereal pricing is left to the market forces instead of being administered and government playing the facilitating role, land will be released from rice and wheat cultivation to meet the growing demand for non-cereal crops such as oilseeds, fruits and vegetables in accordance with diet diversification.
- ✓ Strengthening of social sector investments in health and education. Major investment in improving storage facilities is necessary.
- ✓ Adequate monitoring system needs to be place to check such diversions and leakages.
- ✓ Faulty food distribution system poses a challenge. Inadequate distribution of food through public distribution mechanisms (PDS i.e., Public Distribution System) is also a reason for growing food and nutrition insecurity in the country. Issues of identification of beneficiaries, wrongful inclusion and exclusion of beneficiaries and migration of population between APL and BPL status.
- ✓ Further adding to the problem low quality of grains and the poor service at PDS shops has become another major challenge.
- ✓ At the policy level, achieving inclusive growth in agriculture is important for strengthening the linkages between agriculture and nutrition. Hence technology will play a vital role in raising productivity through usage of high-quality seeds and fertilizers that would enhance nutrition value of the food grains.
- ✓ Synergy across Sectors needs to be achieved. A multifaceted approach is obligatory so as to improve nutrition and health outcomes. Synergy between the processes and programmes of various departments and ministries directed at improving drinking water facilities, sanitation, and public hygiene, access to elementary education, nutrition, and poverty alleviation and the processes that improve access to public health and medical services are important for positive nutrition and health outcomes.
- ✓ Women's empowerment through education and health.

### Conclusion

In this paper an attempt has been made to explain the condition of food security, hunger and malnutrition in the country and challenges of existing programme under National Food Security Act in India. Besides faster and more democratic political system, India is still unable to provide two times food to all population. Considering level of hunger, food insecurity and level of undernourishment, importance of Food Security Act cannot be ignored. So, this paper has a closer look at the PDS, the ICDS, as well as MDMS to identify the major shortcomings with these schemes and also to suggest specific and effective steps and amendments in each of them to improve their efficiency and impact which

is most essential for ensuring food security. However, the major problem is with the proper design and execution of policies and programmes at ground level. There is in particular an urgent need to address governance issues with main emphasis on those related to effective and efficient public service delivery systems. Governance needs to conform closely to the socio-economic environment and appropriate institutions are needed to improve the governance system. Hence achieving food and nutrition security through various policy measures as suggested above is extremely important for maintaining pace of high growth rate. Recent efforts of the government towards achieving food and nutrition security by way of higher budgetary support are laudable but proper implementation of the current programmes is necessary for their success. Hence government must chalk down a detailed action plan to achieve food and nutrition security with timelines and monitoring mechanisms attached to free India from malnutrition problem that directly affects the human capital formation of the country.

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