

Evolution of India's Policy Response to Hunger, Nutrition, and Food Security Since Independence



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1 Introduction

In recent decades, there has been a renewed concern regarding widespread prevalence of malnutrition and food insecurity in the world despite fairly high economic growth in several countries comprising most of the global population. In 2015, the global community of 193 sovereign nations committed to the United Nation's 2030 Agenda for Sustainable Development that contained 17 Sustainable Development Goals (SDGs). Earlier at the turn of the century, the Millennium Summit of the United Nations had set eight Millennium Development Goals (MDGs) to improve the wellbeing of the world's poor population and the first of the MDGs related to a substantial reduction in poverty and hunger. As NITI Aayog (2019) states the SDGs 'substantially reflect the development agenda of India'. The SDGs consider poverty and nutrition as two separate goals because the two are distinct, though related, problems. SDG 2 aims to 'end hunger, achieve food security and improved nutrition and promote sustainable agriculture'.

According to the State of Food Security and Nutrition in the World 2020 report,¹ about 690 million or 8.9% of the world's population were undernourished in 2019 and almost all of them resided in developing countries. A more worrisome point is the evidence that the number of people affected by undernourishment has been increasing since 2014 and the world is not on track on SDG 2. Further, the COVID-19 virus-induced depression in the world economy in 2020 led to the loss of job

¹ FAO, IFAD, UNICEF, WFP, and WHO (2020).

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and income by a sizable section of people resulting in serious problems in access to adequate food and deterioration in nutritional security.

During the colonial era, India witnessed repeated shortage of food production due to the absence of a systematic long-term policy to meet frequent droughts. Millions of people have been reported to have died in several famines between 1769 and 1943. After its independence, the Indian government's declared policy response laid priority on increasing aggregate food production. The situation did not improve much and aggravated in the mid-1960s due to two consecutive drought years. Assistance from the United States under Public Law (PL) 480 for food aid against rupee payments was particularly helpful then since foreign exchange was also in short supply. This crisis helped to introduce what is known as the green revolution which was a success within a few years. Once adequate aggregate production materialized in the country at the macro level, attention of public policy shifted to several other areas such as household access to adequate food, enhancing purchasing power, composition of food basket, production of protein- and vitamin-intensive food items, and improvement in sanitary conditions. This paper evaluates Indian policy response after independence in different areas related to SDG-2 covering hunger, nutrition, and food security.

We may begin with a few basic background features of India. As per census data, India's population grew from 361 million in 1951 to 1210 million in 2011. It is estimated to be 1355 million in 2020 compared to 1402 million in China in the same year and is likely to surpass China as the most populous country within a few years. India's population predominantly resides in rural areas, but urbanization is growing fast. The rural share has fallen from 83% in 1951 to 69% in 2011. India's total population is projected to reach 1.64 billion by 2050 and more than half of them are likely to live in urban areas.

India followed a mixed economy model with a major role in the public sector till 1990. Industrial activities were extensively regulated with high tariff barriers. Real Gross Domestic Product (GDP) grew at a low rate of about 4% (2% in per capita terms) for four decades till 1991 when India adopted market-friendly economic reforms. Growth picked up slowly after the reforms and the average GDP growth rate remained close to 7% during 1992 and 2019. Its average level of living at \$2100 in 2019 is still way below the world average of \$11,000. In PPP terms too, India's per capita income at Int\$ 7800 is less than half of the world average. In terms of the Human Development Index, India ranks 131 among 189 countries in 2019 reflecting a low social development process.² Life expectancy at birth stands at 69.7 years and literacy rate at 78% in 2019.

Section 2 explains the concepts of adequate nutrition, food security, and poverty. Section 3 describes the evolution of public policy responses for provision of nutrition and food security in India since independence. This section also discusses some major programmes undertaken by the government. Section 4 makes an evaluation

² There are large variations in human development attainment across states in India. It is well recognized that achievement in the state of Kerala has been comparable to those of some of the developed nations.

of achievements in various dimensions of food and nutritional security. Section 5 relates to way forward. Section 6 makes some concluding observations.

2 Concepts of Nutritional Adequacy, Food Security and Poverty

Nutrition Adequacy and Malnutrition

The human body needs various types of nutrients such as calories, protein, fat, and several vitamins and minerals in right amounts for proper functioning and growth. The food we take must provide all essential nutrients in the required amount. Malnutrition refers to a condition of health disorder that occurs due to lack of sufficient amounts of some nutrients. A household is nutrition secured if none of its members is malnourished.

Based on the requirement of nutrients and the nutritional contents of food items normally available and consumed in different countries or regions, nutritionists recommend diet baskets for different groups of the population classified by their age, sex and activity. These baskets meet the major nutrients in desired levels. But, specification of the adequate nutrient level for a population group is not simple because of inter- and intra-individual variations in nutritional need. Consider, for example, calories which are required for carrying out various activities, including metabolic activities when a body is at rest. Calorie need of a person is not fixed but varies over a large range depending on not only the age and sex of the person but also on physical activities,³ body weight and climatic conditions. Further, nutritionists point out that there is considerable variation in calorie intake of an individual from one day to another even when she/he is engaged in similar work and maintains body weight. The human body has an adaptation mechanism which means that calorie requirement varies from one day to another for the same person engaged in similar kind of activity depending on the intakes (Sukhatme, 1978, 1981). Human body maintains energy balance by adapting through an auto-regulatory 'homeostasis' system and hence calorie needs of people are better viewed by means of a probability distribution.

Now, let us denote the mean calorie need of an individual in a given age–sex–activity group by m and the standard deviation by s in calorie intake distribution of a healthy and active population of this group. Consider a person p with observed intake level x averaged over a short period of a few days. If x falls short of the recommended average m of the group the person p belongs to, it does not necessarily mean the nutritional need of the person is not met. But, if x falls below the minimum of the required range, we may conclude that there is overwhelming statistical evidence that the nutritional need of the person is not met. Under the assumption that nutrient

³ The recommended calorie range for an adult man, for example, varies from 2320 to 3490 depending on activity status (ICMR, 2010).

requirement of individuals belonging to a group follows normal distribution, and observed nutrient intake x falls below $m-2.s$ level, we may conclude that she/he will not be meeting the calorie need with a high probability of 95%. In such a case, the person may be defined as an undernourished. Similarly, obesity might be defined as intake above $m+2.s$ level.⁴ Malnutrition may then be operationally defined as a condition when certain nutrients are less than or in excess of the required range.

Nutritionists recommend calorie need considering the observed average calorie expenditure levels among healthy and active population groups. The recommended dietary allowances (RDAs) are meant for the average nutrients per day for a population group and cannot be used to judge nutritional adequacy of an *individual* which is best judged by the range approach discussed above.

Some groups of the population such as pregnant or lactating women, children, and the elderly have high risk of malnutrition in the developing world. More than half of child death is attributed to malnutrition in these countries. Several women do not receive the supplementary diet they need during pregnancies and breastfeeding. When mothers do not receive adequate nutrients, children can be at the risk of malnutrition even before birth. Elderly people face higher risk of malnutrition because of changes in appetite, chewing problem, and dependency on others.

Consequences of malnutrition could be grave in various ways. Severe deficiency of Vitamin A and iodine leads to blindness and goiter, respectively. Malnourishment adversely affects the immunity system of a person and risk of contracting infectious diseases rises. Childhood malnutrition is considered as the single most factor responsible for child mortality. Some estimates show that eliminating childhood undernutrition could reduce child mortality by half and the burden of diseases by about 20% (Murray & Lopez, 1997; Pelletier, 1994). Child undernutrition not only puts children at a greater risk of disease vulnerability but also adversely affects physical and cognitive development of children (Barker, 1995).

Nutrition deficient individuals suffer from illness and inactivity resulting in low work capacity and income at work. Low income or purchasing power in turn contributes to poor nutrition. Thus, a vicious circle gets formed trapping the poor (Strauss & Thomas, 1998). Studies have found that nutritional deficiencies can also inflict lasting damages on health of people. Height for age at 2 years has been found to be highly associated with human capital and undernutrition in early childhood might lead to permanent damage and even affect future generations. Children born to undernourished mothers are more likely to suffer low birthweight causing intergenerational transmission of malnutrition (Behrman et al., 2009; Bhutta et al., 2008).

The recent literature also emphasizes on anthropometric-based outcome measures of child undernutrition: (a) stunting (low height-for-age) (b) underweight (low weight-for-age) and (c) wasting (low weight-for-height). To illustrate the measurement of these indicators, let us take stunting. Consider the observed height of a child and compare it with growth reference norms for a given age–sex group specified by the WHO by computing a standardized indicator called Z-score which is defined as

⁴ Obesity or overnutrition is not focused in this paper.

$Z = (\text{observed height of child} - \text{reference median}) / \text{reference standard deviation}$. If the Z-score of a child is below $-2.Z$ value,⁵ the child is considered as stunted.

Hunger and Food Security

Hunger is commonly referred to as physical discomfort caused by insufficient food consumption. This is viewed as 'a relatively narrow measure' (Barrett & Lentz, 2016). Many analysts use a broad concept of food security that was adopted by the World Food Summit in Rome organized by the Food and Agricultural Organization (FAO) in 1996: 'Food security exists when all people, at all times, have physical and economic access to sufficient, safe and nutritious food to meet their dietary needs and food preferences for an active and healthy life'.

The above definition focuses on food sufficiency, safety, and nutritional content. To be relevant in practice, it goes beyond the normative biological issues and considers consumer behaviour through their tastes and preferences which are affected, among other things, by cultural attributes of the communities. Also, by containing the phrase 'at all time', the definition considers possible vulnerability in a forward-looking manner.

Analysis of food security often centres around four different pillars:

- **Availability:** Availability pillar considers supply side of the food security and gets reflected by sufficient aggregate food production to meet domestic demand.
- **Access:** Access pillar, on the other hand, displays the demand side at the household level. Sen (1981) asserted 'starvation is the characteristic of some people not *having* enough food to eat. It is not the characteristic of there *being* not enough food to eat. While the latter can be a cause of the former, it is but one of many *possible* causes'. This famous quotation was responsible for drawing world attention to demand side in policymaking through considerations of issues such as purchasing power, prices, inter- and intra-household distribution. In this process, the demand side links food security to income poverty and distribution issues.
- **Utilization:** Utilization pillar refers to the proper utilization of food expenditure by the households on nutritionally essential foods they can afford. It also includes considerations such as efficient absorption of food consumed by individuals and related issues like proper preparation, safe preservation, and sanitary conditions.
- **Stability:** Lastly, stability pillar considers the vulnerability of households to food insecurity due to inter-temporal fluctuations in availability or access.

Following Webb et al. (2006), we might describe the hierarchical nature of the four pillars. Adequate availability of food at macro level is essential but not sufficient to ensure access at the household level as emphasized by Sen. Similarly, access to adequate food is necessary but not sufficient condition for efficient utilization. The first three pillars do not ensure stability of food security over time which is a forward-looking feature. Analysts have also distinguished between chronic and transitory food insecurity. Chronic insecurity refers to long-term deficiency of food security and is normally associated with long-term structural problems of the economy; for example,

⁵ If the observed score is below $-3Z$, the child is considered severely undernourished.

the situation prior to the green revolution in India. Transitory insecurity is associated with lack of food security for a short period in availability or access. It could be seasonal and recurring in a lean season of agricultural activities, but may also occur during a natural calamity such as earth quack, severe drought, critical health crisis, and war causing large-scale starvation and death (Devereux, 1993; Ravallion, 1997; Devereux et al., 2008). Considering such conditions, Basu (2010) states that food security for all need not involve ‘the false promise that there will be food for all at all times, but simply that government will ensure that everybody has access to a certain minimal amount of food and, in case there is an overall shortage of food in the nation (which cannot be corrected through imports) then everybody will share in the shortage’ (P. 32).

Poverty

A closely related concept is poverty and poverty line on income dimension. The poor are defined as those persons who fall below a benchmark income or consumption called the poverty line. This benchmark is a minimum desirable income or consumption level needed for a decent life that a society can afford. Extent of poverty refers to the proportion of poor in a given population, also referred to as the headcount ratio (HCR) of poverty.

The poverty line is often derived on a normative basis by employing the relationship between income and nutritional intakes. The quantity of food needed by an individual is normally determined by his or her calorie need. If we arrange households by per capita income level and move from low-income group to high-income groups, the average per capita energy (calorie) intake rises and tends to reach a plateau at a high level of income. Based on this relationship, poverty line may be defined as that level of consumption expenditure (or income) at which energy intake is just sufficient to meet the average calorie requirement level of the society. Households whose income fall below the poverty line are called poor in this approach.

The quantity of food needed by an individual is normally determined by his or her calorie need, while other nutrients contribute to the quality of food and make the diet a balanced one. As in the case of specific nutrients, nutritionists recommend balanced diet baskets separately for various age–sex–activity groups that meet the need for major nutrients keeping in mind the social and economic circumstances. The average food need of a society may be obtained as a population-weighted average of the recommended dietary allowances (RDAs) for different groups⁶ and when some allowances are made for basic necessary non-food items, the expanded basket may be taken as a basic need basket.⁷ The cost of the basic consumption needs then gives the basis for estimating an alternative normative poverty line.

A point to remember is that poverty is not measured by comparing the cost of the basket item by item, but by comparing the cost of the basket as a whole with income or total consumption expenditure. A household is called poor if its income is not

⁶ See, ICMR (2010).

⁷ An Expert Group headed by Rangarajan to review methodology for measurement of poverty in India calls it the poverty line basket (Planning Commission, 2014).

sufficient to afford the total cost of the basket, even though its actual consumption of a particular item might fall short of or exceed the norm used in the basic need basket. Similarly, even in the calorie-based approach to define poverty line, a particular household with income equivalent to the poverty line might or might not have intake equal to the calorie norm; the equality holds for an average household at that level of income.

3 Public Policy Response Since Independence

3.1 The Constitutional Framework

The various organs of the government in India function within the framework of the Constitution which came into effect from January 26, 1950. The Directive Principles of State Policy in the Constitution of India are considered to be guiding doctrines 'fundamental in the governance of the country', though they are not enforceable by a court. They contain several provisions related to nutritional and food security of the citizens. Article 47 of the Constitution most directly recognizes the need to raise the nutritional level of the citizens by declaring: 'The State shall regard the raising of the level of nutrition and the standard of living of its people and the improvement of public health as among its primary duties...'. Article 39 specified 'certain principles of policy to be followed by the State' and the very first among them says that the State should direct its policy towards securing 'the citizens, men and women equally, have the right to an adequate means of livelihood'. Further, Article 35 stipulates 'The State shall endeavour to secure, by suitable legislation or economic organization or in any other way, to all workers, agricultural, industrial, or otherwise, work, a living wage, conditions of work ensuring a decent standard of life and full enjoyment of leisure and social and cultural opportunities ...'. Article 48 is another Directive Principle which states 'The State shall endeavour to organise agriculture and animal husbandry on modern and scientific lines...'. All these constitutional provisions relate to availability, access, and affordability dimensions of food and nutritional security.

3.2 Policies Followed for Food and Nutritional Security

As noted earlier, India adopted a mixed economy model where public and private sectors coexisted. The Planning Commission played an important role in designing and monitoring public policy for the economy and preparation of the Plan documents. Role of the public sector declined over time after the economic reforms in 1991. A new government formed in 2014 finally discontinued the Planning Commission. Till

then, however, the Five-Year Plan documents provided the overall approach of the government towards various policies during the respective plan periods.

Attaining the maximum feasible GDP growth subject to available resources, obtaining corresponding sectoral composition and allocation of investment across sectors was the main objective of a plan exercise. This core exercise was complemented by feasible allocations to social welfare-improving sectors like health, nutrition, and education. The 5th Plan was the first plan to attempt to formally introduce a target on poverty reduction and integrate it with GDP growth target with certain assumptions on consumption distribution. We briefly document below the policies followed on nutrition front based on some of the Five-Year Plans supplemented by a discussion of major policies for attaining food security.

Nutrition Security

The First Five-Year Plan initiated by the government in 1951 recognized that nutrition was an important factor for preserving health of the people and that it affected the productive capacity of an individual. It noted the widespread existence of under-nutrition in the country and lack of protective food to supplement staple cereals leading to malnutrition in the country.⁸ The Second Five-Year Plan was frank in its admission that it was not possible then to provide nutrition at the optimal level to the entire population within the Plan period. Noting that damage to proper growth and development at early ages ‘cannot be made good even by providing adequate nutrition at a later age’, it initiated certain schemes aimed at nutritional improvement for the vulnerable groups of the population such as expectant and nursing mothers, infants, and children.⁹ The Third Five-Year Plan also expressed a similar view.

The Minimum Needs Programme (MNP) introduced in the Fifth Five-Year Plan¹⁰ aimed at the provision of certain basic services and facilities of social consumption up to specified norms. The MNP contained two types of activities: (a) basic human resources development activities covering elementary and adult education, health, drinking water supply, nutrition, and rural housing and (b) basic infrastructure for area development activities like rural roads and village electrification. The MNP continued in several subsequent plans too with new activities like cooking energy, sanitation, and urban slum development added to the list. Both individual beneficiary development and area development components were viewed from the angle of their productive capacity-enhancing roles. It is interesting to note that public distribution was added to the MNP list during the 7th Plan.

The Integrated Child Development Services (ICDS) Programme started in 1975 to improve the nutritional and health status of preschool children along with their learning and social development. It also aimed at maternal care and supplement their

⁸ First Five-Year Plan, chapter 32; the plan documents prepared by the erstwhile Planning Commission are available at: <https://niti.gov.in/planningcommission.gov.in/docs/plans/planrel/fiveyr/index1.html>.

⁹ Second Five-Year Plan, chapter 25.

¹⁰ The 4th Plan had only some peripheral references to nutrition and did not contain any substantive point on strategy or scheme.

nutritional needs. The services provided by the Anganwadi workers under ICDS include supplementary nutrition, immunization, health check-up, referral services and preschool education. It started in selected blocks and gradually expanded to other areas. Similarly, programmes for the prevention of iodine deficiency disorders, anaemia, and blindness due to Vitamin A deficiency were initiated.

The 6th Plan contained some detailed discussion on nutrition. It considered nutritional improvement as depending mainly upon the awareness, knowledge, and income of the family and viewed family employment and income as essential prerequisites for the improvement of nutritional status. It stated 'employment is the best and cheapest guarantee to enhance the nutritional status of the families'.¹¹ Thus, access to minimum income or poverty alleviation played a central role in the nutritional strategy of the 6th Plan, though it did recognize roles of several other factors such as food production, post-harvest processing, storage, expansion of fair price shops network, mid-day meal scheme, cropping pattern changes, fortified food, and participation of community-based organizations.

The 7th Plan quoted the National Nutrition Monitoring Bureau which showed that nearly 50% of the households surveyed consumed food which was quite inadequate to meet their requirements of either calories or proteins, or both, and that only 15% of children could be considered as having a normal status of nutrition; the rest suffered from varying degrees of under-nutrition.

A new element in the 7th Plan was that the objective of nutritional policy was stated as increasing the functional efficiency of the labour force and reduction in infant and maternal mortality rates¹² which implied that the Planning Commission was then mostly guided by the instrumental role of nutrition rather than its intrinsic role. In terms of policy instruments, the approach of the 7th Plan to nutrition problem was similar to that of the earlier two plans. It considered 'expansion of employment opportunities and stabilisation of income, especially among the vulnerable population groups' as the main long-term strategy for ensuring adequate nutrition. It also aimed at the expansion of public distribution system (PDS) covering cereals and non-cereal food to enable families for a balanced diet at 'reasonable prices'. Besides, it stressed on nutritional education, sanitation and hygiene, adequate spacing between births of children and safe drinking water.

The 10th Plan noted that 'over half the children under the age of five years in India are moderately or severely malnourished, 30 per cent of new born children are significantly underweight and nearly 60 per cent of pregnant women are anemic' (Chapter 2). It observed the impact of malnourishment on 'cognitive development and learning achievements, reducing the capacity to work and productivity among adults and enhancing mortality and morbidity among children'. On the positive side, it stated that 'nutritional deficiency diseases viz., Kwashiorkor, marasmus, pellagra, lathyrism, beriberi and blindness due to severe Vitamin-A deficiency, have become rare'.

¹¹ Sixth Plan, ch. 22.

¹² 7th FYP, ch. 13.

The 10th Plan noted a clear shifting of consumption pattern from foodgrains to other food items due to changing age, occupational structure, and higher income. It felt the changing consumption pattern was desirable on nutritional grounds and supported establishment of storage structure due to short shelf life of several non-grain food items and adjustment of minimum support prices to support diversification of food basket. It also advocated the use of huge public stocks of foodgrains built up by then for reducing widespread undernutrition.

The 11th Plan argued for multiple interventions such as dietary improvement, nutrition supplementation for children, better childcare practices, access to safe drinking water, improved sanitation, and immunization. It stated that the National Rural Health Mission could deliver a better system of affordable curative health care. It saw the need for raising public health spending to at least 2% of GDP during the 11th Plan period.

We document above the evolution of the approach of the government policies towards malnutrition over time. Policymakers have always recognized widespread prevalence of undernutrition and malnutrition. Some of the broad features of the nutritional problem in India talked about in the 2010s and 2020s were known even in the 1950s and 1960s. Resources were certainly a major constraint then. There was virtual admission of infeasibility of solving the malnutrition problem during the initial decades of independence and hence focus was on child and maternity care that required priority attention. Schemes like ICDS were tried on an experimental basis in limited blocks and got extended to other areas as more resources were available. Evaluation studies have pointed out deficiencies in ICDS such as inadequacy in the cold chain for vaccines, irregular supply of nutrition supplements and even inappropriate food. Multidimensional nature of the problem including safe drinking water and sanitation attracted policy attention over time. However, calorie intake which is more directly linked to foodgrains consumption has always received focused attention from the government.

Food Security

Low productivity and rising population called for major restructuring of policy for increasing foodgrains production to meet domestic demand. Large-scale dependence on imports could not be a viable strategy for a large country like India since world trade in grain market is thin, particularly for rice where volume of world trade is only about 10% of our consumption. While international trade volume is not that thin for wheat, cartelization in food grains market is widely prevalent. It was clear to policymakers that the strategy of food security had to largely depend on the domestic production of foodgrains, staple food of Indians.¹³ But the strategy did not preclude international trade as the need arises to supplement domestic production with some imports in deficit years and exports of part of the surplus in other years.

¹³ Parikh et al. (1997) argue why free trade in rice may not be in India's interest.

Introduction of the Green Revolution¹⁴ initiated in 1968 in rice and wheat involved the use of high-yielding variety (HYV) seeds together with irrigation, chemical fertilizers, pesticides and use of tractors. Supported by research and extension services, the innovative and risk-taking farmers in Punjab, Haryana, Western Uttar Pradesh, and some parts of Tamil Nadu and Andhra Pradesh were the first to adopt the new technology that transformed the food production system. Application of the HYV in wheat was particularly a great success in raising its productivity. Institutional changes like consolidation of holdings carried out earlier in some states provided the right environment for the use of new technology. Agriculture was treated as a priority lending sector by the banks and farmers got better incentives through prices. The revolution slowly spread to other parts of the country. The success of the green revolution was evident in the 1970s when India became self-sufficient in grains production. This was an essential first step in India's attempt towards food and nutritional security. The emphasis on the Green Revolution continued over several plans with the required allocation of financial resources. As it turned out, India has become a net exporter of cereals since the 1990s.

Public Distribution System (PDS)

Food production in India is characterized by seasonality and annual fluctuations. To meet the consequent instability, government decided to undertake public buffer stocking operations involving procurement and offloading of foodgrains as per need. The PDS has been an important instrument to provide food security to the people in India. It started as a mechanism to distribute food at a fair price for the urban consumers during the war and slowly got expanded to supply rice and wheat at affordable prices to cover rural areas, particularly during the 1980s and 1990s. Both the Union and state governments are involved in the operation of the PDS. The Food Corporation of India (FCI) set up in 1965 by the Centre as a statutory corporation is responsible for the procurement and storage of grains. The state governments are responsible for issuing ration cards¹⁵ to the beneficiaries and distributing the entitled food quantities to them at subsidized prices through a network of fair-price shops. To meet the supply, FCI procures food grains from farmers at government-specified prices called minimum support price (MSP) intended to provide remunerative prices to farmers. The Central government decides the prices taking into consideration recommendations of the Commission for Agricultural Cost and Price (CACP). The difference between cost of procurement (including transport) and prices realized from the beneficiaries is borne by the government as food subsidy. Some states have added other food items like sugar, pulses, and edible oils at different times to be

¹⁴ The HYV seeds of wheat imported from Mexico were developed by Norman Borlaug and of rice from the Philippines developed by Peter Jennings and Henry M. Beachell. M. S. Swaminathan played a major role in introducing these seeds in India.

¹⁵ The ration cards issued by the government to a household states its drawing rights of grains from the PDS. For the poor, it was a proof of identity with address for several government transactions. Even for the relatively better offs, the ration cards used to be an important document for address proof and buying subsidized LPG from the government agencies.

available through the PDS. The FCI maintains buffer stocks to meet demand–supply gap due to shortage of rainfall or other calamities and to meet working stocks.

Subsidized distribution of food has been an integral part of India's food security for the low-income group. Without this support, small relative price or income changes can lead to considerable suffering for the poor (Sen, 1981; Dreze & Sen, 1989). The PDS has undergone several modifications. In 1997, the government launched Targeted Public Distribution System (TPDS) which operated under a dual price regime, one price for households below poverty line (BPL) and another for those above poverty line (APL). The BPL group had to pay lower prices for ration issued to it compared to the APL group. For beneficiary identification, most state governments roped in local bodies like Gram Panchayats. In 2000, the TPDS introduced a category called poorest of the poor households under the Antyodaya Anna Yojana (AAY) that received 35 kg of food grains at a highly subsidized rates of Rs 2 per kg for wheat and Rs 3 per kg for rice.

National Food Security Act

A paradigm shift occurred from 'welfare' to 'rights based' approach when Parliament passed the National Food Security Act (NFSA) in 2013 following a rights-based approach for 75% of rural population and 50% of the urban population or, about two-thirds of the total population in the country. The Act stipulated public provision of 5 kg of food grains per person per month to eligible households at Rs 3 per kg for rice, Rs 2 for wheat, and Rs 1 for coarse grains. The AAY households continued to receive 35 kg per household per month. There were additional provisions for pregnant and lactating mothers and children. The NFSA expanded the entitlement group for PDS substantially, though quantum of drawing rights per household did not change much and in fact might have reduced for some poor households not belonging to the AAY category due to adoption of per person criteria instead of per household. Yet, the NFSA was a major step aimed at food and nutritional security of the people. By converting subsidized food availability into legal entitlements, it empowered them and contained provisions for grievance redressal mechanisms and social audit.

Thus, government intervention in the food grain market has been widespread and persistent. The level of food grains procurement by the government has increased over the years to reach 25–30% of total food grain production of which about two-thirds get distributed through the PDS. PDS mechanism also helped in managing price stability in the open market to some extent. Farmers in different parts of the country have been complaining from time to time that they do not receive prices profitable enough for their produce. The stated preference of a substantial number of farmers has been to move out of agriculture if they can get job opportunities outside agriculture.

PDS, particularly TDPS, played a significant role in the nation's move towards ensuring food security of the people. Most evaluation studies have criticized PDS on grounds of inadequate coverage of the needy, leakages, inefficiency, and wastage at different stages of supply management. In a six-state study of TPDS, NCAER (2015) reported that beneficiary households felt that the TPDS was important to cover a substantial portion of their requirement of food grains at subsidized prices.

While the PDS was, in principle, supplemental in nature and was not initially intended to meet the entire requirement of grains of a household, the target groups under the NFSA could in practice meet most of their food grain needs through the PDS. The prices specified in the NFSA were so low that a rural labour household could purchase monthly entitlements with a few days' wage earnings. Given the popularity of NFSA among the masses and competitive potential electoral gains in a democracy meant that all the states adopted NFSA,¹⁶ although they had an option to join NFSA or continue with the TDPS.

3.3 Income-Generating Programmes

By the mid-1970s, Indian policy priority started focusing on the generation of a minimum income for poor households and in the process expanding their access for food and nutritional security. Since the low-income groups may not derive sufficient benefits from the economic growth process, several income-generating programs were introduced targeted at them. The antipoverty programmes broadly fell into two categories, one related to self-employment and another to wage employment.¹⁷

In the first category, the Integrated Rural Development Programmes (IRDP) was started in 1980 to enable poor households to cross over the poverty line through self-employment. Similar programmes in one name or another have continued with varying degrees of emphasis to enable livelihood opportunities. The government helped in acquiring productive assets or subsidized financial assistance for taking up activities like animal husbandry, fishery, weaving, food processing, small trade, or other services. These programmes have come under criticism for imperfect targeting and improper identification of viable projects.

Wage Employment programmes too have evolved over time under various names like National Rural Employment Programme or Employment Assurance Scheme to provide the rural poor with gainful wage employment through public works such as construction of village roads, watershed developments, irrigation wells, school buildings, and houses for the poor. Finally, a legally binding act called Mahatma Gandhi National Rural Employment Guarantee Act (MG-NREGA) got adopted in 2006. The Act guarantees 100 days of public manual employment to a household in a year within 15 days of demand at a specified wage rate. It was visualized as an open-ended demand-driven scheme and, by and large, the demand for employment has been met. One of the main merits of public wage employment programme lies in its self-targeting nature due to manual work and consequent effectiveness in reaching the poor.

¹⁶ NITI Aayog (2021) states 99.5% of the targeted beneficiaries have been covered.

¹⁷ See, Panda (1999) for a discussion of several poverty reduction programmes undertaken till the 1990s.

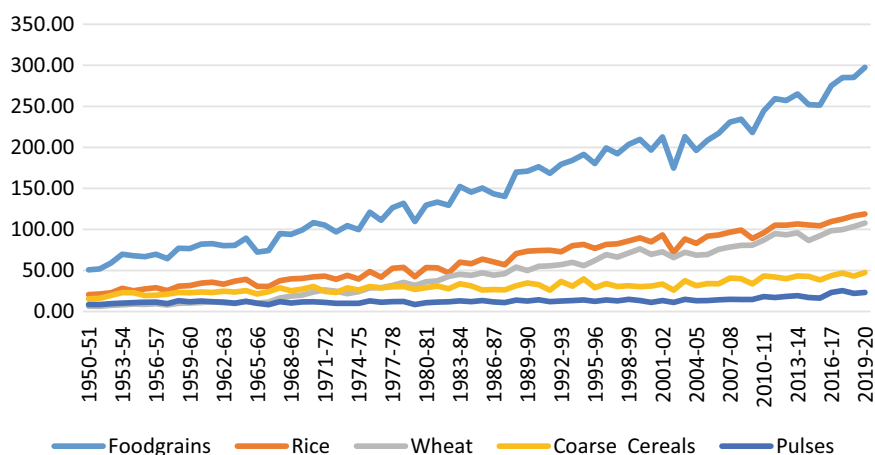


Fig. 1 Production of food grains (million tonnes).
Source Economic survey

4 Achievement and Prevalence

We now turn to a discussion of trends and achievements in some key variables related to nutritional and food security.¹⁸

Food Production and Availability

After the commencement of the green revolution in 1968, food grain production in India rose from 95 million tonnes in 1967–68 to 130 million tonnes in 1980–81 and crossed 300 million tonnes in 2020–21 (Fig. 1). Except for the bad years, it has remained higher than population growth rate by above 1% per year for over five decades. The green revolution took place mostly in wheat and rice. Production of coarse cereals and pulses did not show spectacular rise and, in fact, declined in per capita terms (Fig. 2).

Following the success of the green revolution, India has been an exporter of food grains for about 3 decades now. The huge increase in production of wheat and rice has, however, not been accompanied by an increase in per capita net availability to the same extent. On a per capita per day basis, food grain availability (defined as net production + net imports—changes in government stocks), which was 395 g per day in 1951, rose to 469 in 1971 and reached 510 in 1991. It exhibited both falling and increasing trends thereafter: declined to 436 in 2008 and rose again to 495 in 2019. Wheat and rice are the staple foods in the country and constitute three-quarters of the total food grains production. Per capita availability of pulses has increased from 33 to 55 gm/capita/day during the last two decades.

¹⁸ See, Dev and Pandey (2022) for a status report on nutrition and food security.

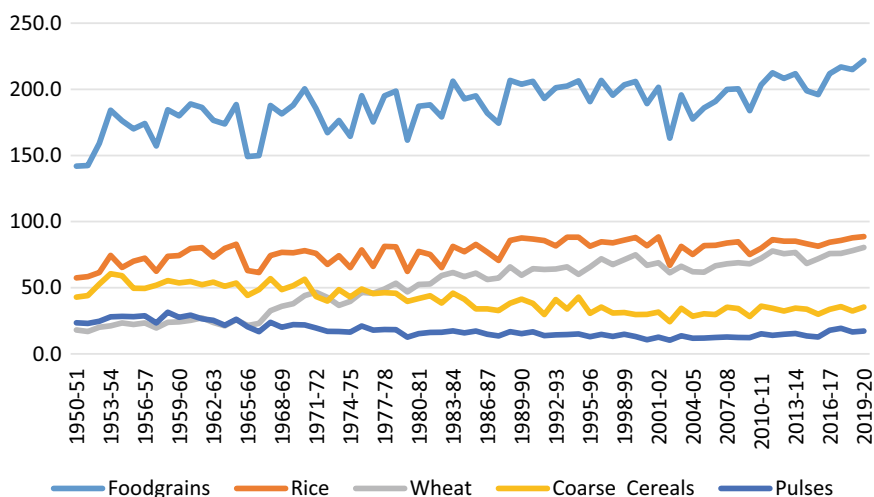


Fig. 2 Per capita food grain production of food grains (Kg).

Source Author's calculation based on data in Economic Survey

Consumption expenditure surveys conducted by the NSSO reveal that per capita monthly domestic consumption demand for cereals has fallen from 12.1 to 11.2 kg in rural areas and from 9.9 to 9.3 kg in urban areas during 2004–05 and 2011–12.¹⁹ Reduced incidence of heavy manual activities due to mechanization, general shift in lifestyle towards sedentary activities, and diversification of the consumption basket are some of the factors contributing to the fall in cereals demand. The reduced demand could partly also be due to the fact that cereal consumption in the survey does not include the cereal content of food that is received by the household from outside in the form of meals, cereal preparations, or snacks.

Per capita consumption of pulses decreased from 705 gms in 2004–05 to 651 gms in 2009–10 but rose to 783 gms in 2011–12 in rural areas and exhibited similar trend in urban areas too with 824, 786, and 901 gms in the 3 years. Monthly milk consumption has shown a rising trend from 3.9 kg in 2004–05 to 4.3 kg in 2011–12 in rural areas and from 5.1 kg in 2004–05 to 5.4 kg in 2011–12 in urban areas.

The success of the green revolution on the production or availability front did not translate to household-level food and nutritional security for *all*, primarily due to lack of purchasing power by a significant section of the population. While famine-like situations or starvation deaths on a large scale have been avoided, incidence of malnutrition and food insecurity is not insignificant, though magnitude of undernutrition or calorie deficiency has fallen considerably.

¹⁹ NSSO report No. 558, P. 22.

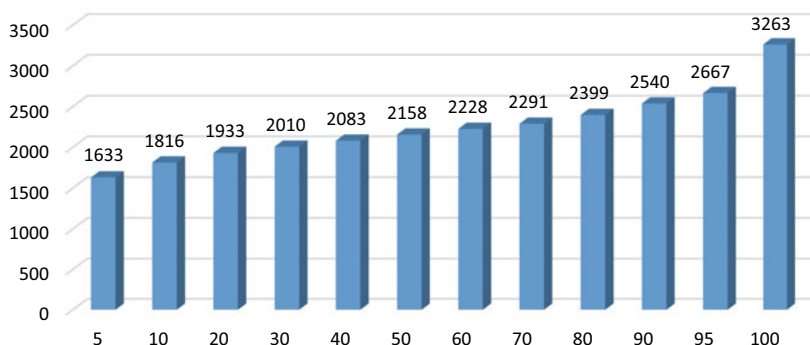


Fig. 3 Per capita calorie intake per day by fractile classes: rural India 2011–12. *Note* Fractile classes 5 and 10 above denote 0–5 and 5–10 percentiles, respectively, and so on. *Source* Based on NSSO report no. 538

Nutrient Intakes

This brings us to nutrient intake side. Figures 3 and 4 depict the per capita calorie intake by different fractile groups for the years 2011–12.²⁰ Per capita per day calorie intake for the bottom 5% of the population was only 1633 and 1637 in rural and urban areas, respectively, in 2011–12. A Task Force on poverty estimates (GoI, 1979) had worked out the per person calorie norm to be 2400 cal for rural areas and 2100 cal for urban areas. Subsequently, ICMR (2010) has revised its recommended dietary allowances (RDA) for different nutrients for various age–sex–activity groups. An Expert Committee headed by Rangarajan (Planning Commission, 2014) for the estimation of poverty reworked out the average norms considering the revised recommendations by ICMR and the weighting diagram of these groups based on more recent population distribution. The new average norms for the population as a whole turned out to be 2155 and 2090 for rural and urban areas, respectively. Further, in view of the criticisms by Meenakshi and Viswanathan (2013) and Sukhatme’s homeostasis hypothesis discussed in Sect. 2, they treat calorie norm to be lying in the range of $\pm 10\%$ and conclude that ‘intakes at the lower level need not compromise the health and activity status’ of the population. This practically reduces the average calorie norms to 1940 and 1880 for rural and urban populations, respectively. The Rangarajan Committee also worked out protein and fat requirements on a similar basis and obtained average nutrient requirement levels as in Table 1.

The Expert Committee found the requirements of calorie, protein, and fat are met by the 25–30 percentile group in rural areas and by the 15–20 percentile group in urban areas. Calorie intake levels by fractile classes for 2011–12 are given in Figs. 3 and 4 and protein and fat intake levels in Table 2. Judged by the new norms arrived at by the Rangarajan Committee and permitting a 10% lower limit for calorie norms, it is found that about 20% of the population did not meet the calorie norm in both rural and urban areas. For protein and fat too, the population proportion below the

²⁰ NSSO consumption survey data are not available after 2011–12.

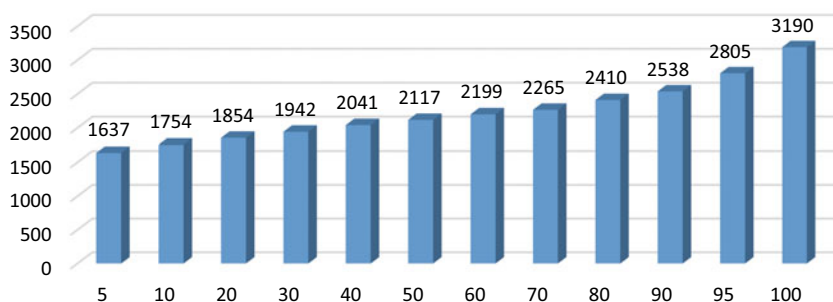


Fig. 4 Per capita calorie intake per day by fractile classes: urban India 2011–12. *Note* Fractile classes 5 and 10 denote 0–5 and 5–10 percentiles, respectively, and so on. *Source* Based on NSSO report no. 538

Table 1 Nutrient requirement norms per capita per day as estimated by the Rangarajan expert group

	Rural	Urban
Calorie	2155	2090
Protein (gms)	48	50
Fat (gms)	28	26

For calorie, a $\pm 10\%$ variation was allowed by the expert group
Source Planning Commission (2014)

norm is no more than 20%. Overall, the prevalence of undernutrition was about 20% of the three main nutrients: calorie, protein, and fat.

However, conclusion regarding the nutritional inadequacy of a person and of a society may not be arrived at using the same norm. If calorie intake of a person is at or above the lower bound advocated by Sukhtma and others, the evidence is not significantly beyond doubt to define her as undernourished. But, the intake level at its lower bound cannot be used for judging sufficiency of average calorie intake of a nutritionally secured society. Consider, for example, if calorie intake of most of the population in a society is found to be at or close to the lower limit and nobody below it, it may not be described as a nutritionally secured society. The closer the average intake is to the minimum, the higher is the risk of incidence of undernutrition for the society, even though it is difficult to arrive at such a conclusion for a specific person. Since both requirement and intake follow certain statistical distributions, judgement about adequate supply or intake must be based on the parameters of the distributions.²¹ The population-weighted RDAs will then seem to be more relevant for comparison with average availability.

On the calorie intake side, the averages were 2233 and 2206 for rural and urban areas, respectively. Given the reworked out per capita calorie norms of 2155 and 2090 for rural and urban populations by the Rangarajan Committee, the overall

²¹ Chakrabarti and Panda (1981) argue for determining incidence of undernutrition considering the joint distribution of intake and requirement.

Table 2 Per capita protein and fat intake per day by fractile classes in 2011–12

Fractile class	Protein intake (gms)		Fat intake (gms)	
	Rural	Urban	Rural	Urban
5	42.8	44.0	20.8	26.5
10	48.0	47.5	26.0	34.4
20	51.5	50.6	30.4	39.5
30	53.8	53.3	33.8	44.9
40	56.2	55.9	38.2	50.2
50	58.3	57.7	42.3	54.7
60	60.5	60.2	45.6	58.6
70	62.5	62.1	49.9	63.4
80	65.8	66.0	54.7	69.8
90	70.3	69.6	61.6	75.3
95	74.1	77.2	69.5	86.7
100	90.9	86.5	92.2	99.7
All	60.7	60.3	46.1	58.0

Note Fractile classes 5 and 10 denote 0–5 and 5–10 percentiles, respectively, and so on
Source Based on NSSO report no. 538

calorie intakes were higher than the respective norms for both rural and urban areas. We may also note that the average calorie intake has nearly remained stable between 1993–94 and 2011–12. The average protein intakes were higher than average RDAs in 2011–12 by about 3 g a day. In the case of fat, average intake has gone up by about 10 g a day since 1993–94 and has remained above the RDA since then. Thus, the broad conclusion seems to be that India has moved a long way in meeting the *average* quantum of food required for calorie, protein, and fat, the three macronutrients.

The undernutrition problem mainly lies on adequate purchasing power due to lack of purchasing power for the lowest 15–20% of the households who constitute 200–250 million population. They are among the most deprived sections economically such as small communities living in remote areas, destitute, unemployed without other means of living, and children and old age persons without family support. Reaching out to this last mile is a very challenging job at the grassroots level. The universal nature of the NFSA 2013 for the bottom income groups is a major step for empowering them. After its implementation, the proportion of calorie-deficient households could have considerably come down further from the 2011–12 levels, though we have to wait for the next round of NSSO consumption survey data for comparable numbers.

Turning to anthropometric outcome indicators like the prevalence of stunting, wasting, and underweight among children as revealed by the National Family Health Survey (NFHS) data, their high levels have been a matter of concern. Prevalence of stunting and underweight has fallen over time, but that of wasting has nearly remained stagnant (Fig. 5). Admittedly, anthropometric outcome indicators yield

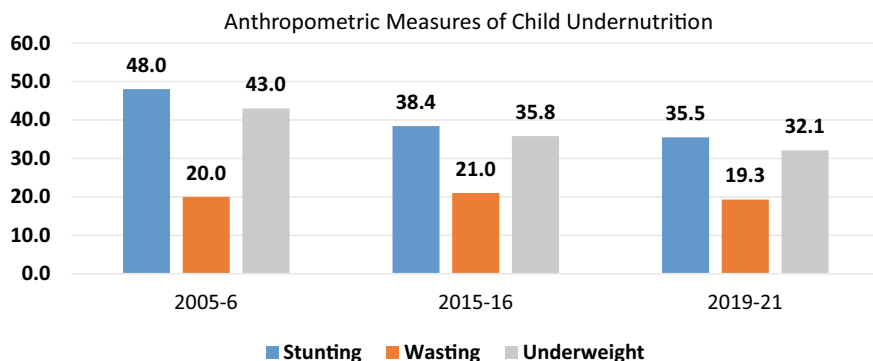


Fig. 5 Anthropometric indicators of child undernutrition. *Source* NFHS factsheets

results only over a longer time span, but the prevalence of stunting and underweight have remained fairly high at 36 and 32%, respectively, even in the recently conducted NFHS-5 during 2019–21.

Consumer demand pattern has been changing over time: from food to non-food and from cereals to non-cereals within food. This is expected by Engel's law which states that the share of income spent on food decreases as household income rises. NSSO consumer expenditure data shows that the share of food has fallen from 63% of total consumption expenditure in 1993–94 to 48% in 2011–12 for an average consumer in rural areas and the share in urban areas has dropped from 55 to 39% during the same period. Share of cereals within food has declined from 39 to 25% and from 26 to 19% in rural and urban areas. Even though the poor continue to spend more than half of their total consumption expenditure on food, the shift away from cereals to other food items such as milk and milk products, and fruits and vegetables is a desirable change.

Turning to another point, if hunger is perceived by the common man as not being able to afford two square meals a day, then India may claim near elimination of hunger. In this sense, less than 2% of the Indian population reported hunger in the late 1990s. The NSSO stopped asking the question pertaining to two square meals a day due to its low incidence. Hence, policy focus moved to other forms of hunger at the turn of the millennium. Note that a higher percentage of persons reporting perceived hunger in some poor areas may not be inconsistent with the small percentages in NSSO surveys at the national level.

Poverty

Considering the international poverty line of US\$1.90 a day, India had the largest number of poor across countries at 224 million (World Bank, 2016). But, percentage of population below poverty line has been falling over time. As per the poverty line suggested by the Tendulkar Committee (Planning Commission, 2009), the head-count ratio (HCR) fell from 37.2% in 2004–05 to 21.9% in 2011–12 at the all-India level (Planning Commission, 2013). The Rangarajan Committee report (Planning

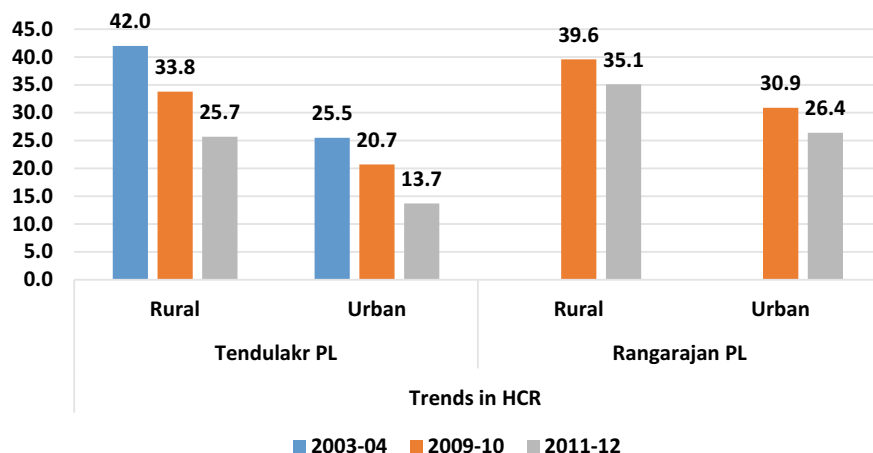


Fig. 6 Trends in headcount ratio of poverty.

Source Planning Commission (2013) and Planning Commission (2014)

Commission, 2014), which had been set up to re-evaluate the methodology for determining the poverty line, showed HCR reduced from 38.2% in 2009–10 to 29.5% in 2011–12 at the all-India level. Figure 6 shows that poverty fell in both rural and urban areas. Most of the public intervention programmes for poverty alleviation also have specific proportions of funds earmarked for the socially disadvantaged groups like Scheduled Tribe (ST) and Scheduled Caste (SC) which account for a substantial proportion of the poor.

Datt et al. (2016) show that poverty declined by 1.36 percentage points per annum after the reforms post 1991 as compared to that of 0.44 percentage points per annum prior to 1991. They also find that, within the post-reform period, poverty declined faster during the 2000s than during the 1990s. Based on the Tendulkar Committee poverty lines, poverty declined only 0.74 percentage points per annum during 1993–94 to 2004–05 and by 2.2 percentage points per annum during 2004–05 to 2011–12 (Planning Commission, 2013). The various pieces of evidence thus strongly indicate that economic growth has a poverty-reducing effect.

COVID-19 Impact

The outbreak of COVID-19 pandemic in early 2020 led to lockdown in most of the countries in the world. India imposed a nationwide lockdown during March last week to May 2020 which got relaxed in stages from June onwards. All production activities, except agriculture and some essential services, were completely closed during the lockdown. Many workers engaged in small- and medium-scale industries lost jobs. The migrant labourers returned home from the cities where they were working, some of them walking on foot hundreds of kilometres. The loss of jobs and income meant a large number of persons struggling to adequately feed the family. A well-functioning supply chain is crucial to food security in such a condition. The

government soon intervened to save life and released additional food stocks for distribution to people through the PDS network. Distribution at the rate of 5 kg per person per month was *free* in addition to normal entitlement under NFSA. This helped to avoid the possibility of a large-scale hunger problem. According to several telephonic surveys by research bodies and social groups, about 80% of households having ration cards did receive the food grains meant for them (Dreze & Somanchi, 2021). This confirms an earlier conclusion by Radhakrishna (2005) that PDS had made a significant contribution in 'protecting the poor by smoothening their consumption from shocks'.

Similarly, a large number of migrant returnees to the villages could be provided manual work through the employment guarantee programme MGNREGA. Government increased financial allocation for the programme to provide needed social protection since demand for MGNREGA work remained at a higher level during the pandemic in different months in 2020 and 2021 compared to corresponding pre-pandemic level in 2019. Economic Survey 2021–22 notes that employment under MGNREGA reached a peak of 45.9 million persons in June 2020 (P. 371). A critical factor for feasible expansion is the development of capacity at the grassroots level 'to quickly translate funds into jobs' (Afridi et al., 2021).

5 Way Forward

Analysts have also been drawing attention to several problems in current policies for food and nutritional security from long-term sustainability point of view. While government expenditure has been fairly large, more attention needs to be given towards its effective utilization of resources. Large-scale leakages are not uncommon in some programmes. Involvement of the non-government organizations (NGOs) with good track record for social audit has been found to have helped in reducing such leakages in some cases. Also, participation of local self-government bodies in the implementation, and monitoring of projects is a good step undertaken in recent years.

Government market intervention in procurement and distribution has played an important role in lessening the distress of the low-income groups. It also led to building up of huge public stocks which have attracted criticisms from several quarters. As argued earlier, per capita cereals demand is tending towards a plateau and domestic demand will increase mostly due to population growth of about 1% a year. Other factors influencing future cereals demand will be rising income of the lowest two deciles, changing dietary patterns, and growing urbanization. The demand-increasing effect of the first factor will be mostly offset by the demand-reducing effects of the other two factors. World market can absorb only a small part of India's production. The rest feeds to the growing stocks which reached 78 MT in 2020–21 rising from 43 in 2017–18. The fact is that stocks rose by 4 MT even during the pandemic year 2020–21 despite enlarged food distribution involving food subsidy of more than 2% of GDP. This obviously implies excess production relative to demand

involving wastage of resources. Public sector management of grain trade needs major changes to provide right signals to the producers.

Different scholars have, however, different views on reforms needed on market intervention. Chand (2003) was of the opinion that private traders would derive excess profit in the absence of a public agency such as the FCI. He stated: 'What now goes as inefficiency of FCI would go as excessive profit of private trade' and advocated modernization and professionalism in management. According to him, the maximum level of grain stock should be sum of stocks needed for 6 months by PDS and the highest shortfall in production during the previous decade.

Another view is that food grain management policies adopted in the past to attain self-sufficiency have served their purpose and have lost their relevance. According to Ganesh-Kumar et al. (2007), for example, the cost of continuation of past policies has risen and the benefits have declined. They state that the dominance of the public sector in the grains market discourages development of the private markets that could promote modernization of market and reduction of inefficiency in food security policies.

Procurement at remunerative prices and distribution at subsidized prices are instruments that have created their own constituencies over the decades. Proposals to introduce certain legal changes in the agricultural market to provide more scope to private traders in 2021 were fought with resistance from a section of the beneficiary farmers in the west and north India leading to repeal of the bills. Competitive political pressure in a liberal democracy makes it very difficult to remove existing subsidies. On the whole, however, a consensus exists among scholars on the need for reducing excess surplus in stocks.

Another point related to food grains production in the country is the issue of water use. The pioneering regions of Green Revolution in Punjab and Haryana have been experiencing indiscriminate withdrawals of groundwater. This has resulted in mining of groundwater resources more than the annual replenishment. As a result, there has been a continuous fall in water table in this region. Gulati et al. (2012) is of the view that water use in Punjab's agriculture has reached an alarming state and policy priority be shifted from subsidies to investment. Product prices must reflect scarcity value of water. It is important that procurement policy for rice considerably improves in Eastern India where water is abundant. Simultaneously, new policies need to be designed for providing equally attractive alternative options to the existing rice producers in Punjab and Haryana to enable them to shift to other crops.

Income support will be less distorting to prices and cropping patterns. Some states have recently introduced income support to farmers and lessons learn from this experiment could be used to expand it to other states. But, if income support is provided in addition to existing procurement schemes, then government finance would be strained further and hinder other welfare schemes. It is necessary to examine the entire system of production of crops, procurement, and distribution of food grains in an integrated manner. As Basu (2010) argued 'Trying to correct one segment of this complicated system is likely to end up in failure and, at best, have limited success' (P. 9).

This paper has mostly focused on policy evolution to tackle undernutrition and evaluation of the extent of success of the policy. We list below some important nutrition and food security issues which were not the focus here:

- India remains home to the largest number of undernourished people in the world. About 15–20% of the population with an absolute size of 200–250 million were likely to be calorie deficient in 2011–12. The introduction of the NFSA in 2013 would have largely reduced this number by 2022. But, the left-out group needs special attention at the ground level in terms of both access and affordability for their nutritional and food security.
- Deficiency of several micronutrients with serious consequences on a large scale continue to be a problem. Urgent attention needs to be given to micronutrient supplements, fortification of food items, production of fruits and vegetables, and communication strategy. There has been a shift from quantity to quality in an average food consumption basket. Increased production and consumption of milk, pulses, fruits, and vegetables in recent years is a welcome development and this trend needs to be continued to overcome an extensive deficit of certain micronutrients.
- We need to guard against vulnerability of population to possible disasters and natural calamities following lessons learnt during COVID-19 to strengthen institutions for their efficient functioning.
- For the top two deciles, calorie intake remains above the upper limit of the RDA. While it may partly be due to meals taken by guests and other external members who are not counted as household members, it also partly reflects overconsumption leading to obesity which needs separate consideration. Obesity causes several diseases such as cardiovascular diseases, diabetes, cancers, and chronic respiratory diseases. Some of them are also referred to as diseases of affluence. Estimates indicate the incidence of obesity to be roughly about 15% in India with some urban areas having higher rates.

6 Conclusions

Food and nutrition adequacy are important measures of human welfare. The issues involved should be analysed from various angles such as food production, household access, adequate purchasing power, expenditure allocation, nutrient intake, access to clean water and sanitation, and nutritional education and communication. Faced with widespread hunger in the country, Indian policymakers focused on increasing food grain production in the initial decades after independence. The success of the green revolution was evident in the production of adequate food grains to meet domestic demand by the early 1970s when India did not depend on imports and subsequently turned to be an exporter of grains to the world market. Production exceeded domestic and external demand resulting in huge public stocks.

Success of the green revolution did not translate to food and nutritional security for *all* even after half a century. As government budgetary constraints got relaxed with

GDP growth, policymakers shifted attention to provision of minimum income to the poor to equip them with adequate purchasing power. The incidence of income poverty reduced over time due to the overall growth of the economy and specific wage and non-wage income-generating measures for the poor. Even then, the bottom 15–20% of the population do not get sufficient nutritional intakes like calorie, protein, and fat. Deficiency of micronutrients prevails for a wide section of the society. Anthropometric evidences related to stunting, wasting, and underweight among children point towards the prevalence of even larger incidence of undernourishment.

Several specific programmes and schemes have been introduced over the years for ensuring food and nutritional security. Included among them are the PDS system, the ICDS, and the self- and wage employment-oriented programmes. The National Food Security Act and the Mahatma Gandhi National Employment Guarantee Act empowered the poor with legal entitlements on food grains and employment for manual work. The mistargeting problem has reduced considerably in some of the programmes in part due to the technology-enabled identification process, but still remains to some extent.

The utility of the existence of institutions like the PDS could be evident during the COVID pandemic in so far as it enabled the government to quickly distribute food to a vast number of households. Similarly, MGNREGA played a major role in providing wage employment in rural areas for up to 100 days a year.

There have been commendable achievements during the last half a century in making the country self-sufficient and enabling exports. Yet, there is no room for complacency on food security front and major tasks remain ahead. Reaching out to the bottom of the pyramid for adequate nutrition remains a major challenge for the near future. Children and women particularly belong to the vulnerable malnourished groups even among those who are above the poverty line and programmes like the ICDS need reorientation for coverage and efficiency. Deficit of micronutrients among the poor as well as the rich call for urgent policy attention. Huge food grains stock with the government is putting strains on government budget and calls for a new look for designing an efficient market intervention mechanism.

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