Strategic Analysis

Food Security in India: Evolution, Efforts and Problems

D. P. K. Pillay & T. K. Manoj Kumar


To link to this article: https://doi.org/10.1080/09700161.2018.1560916

Published online: 14 Feb 2019.

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Food Security in India: Evolution, Efforts and Problems

D. P. K. Pillay and T. K. Manoj Kumar

Abstract: This article examines India’s efforts to achieve food security. It traces the problem, from the inadequate production of food grains during colonial times, to the challenges of procurement, storage and distribution of cereals in post-independence India, after achieving self-sufficiency in food production. The establishment of the Public Distribution System (PDS) and its evolution into the Targeted PDS and the National Food Security Act are outlined. The role of the Food Corporation of India and the efforts to improve it, are discussed. A critical analysis of India’s food security system is made in light of present day problems.

Introduction

Food security, as defined by the World Food Summit (WFS) and the Food and Agricultural Organization, ‘exists when all people at all times have physical and economic access to sufficient, safe and nutritious food that meets their dietary and food preferences for an active life’. Food security is also linked with a host of other factors, such as, socio-economic development, human rights and the environment. It has political ramifications as well. For instance, the price rise of various foods, such as onions and sugar, was a major issue during the general elections of 2014 in the capital. Therefore, a rise in food prices is bound to have consequences which cannot just be restricted to hunger and malnutrition, but it can also result in increasing health care expenditure and a greater economic burden on the citizens. Poor health and nutrition would also have an adverse impact on education, as children would be forced to stay away from schools. In fragile political and security situations, rising food prices can also trigger unrest and protest, and contribute to conflict.

The serious concerns related to food security in the developing countries have assumed global proportions in the last few years, with a need for urgent action. Henry Kissinger is reported to have declared, at the first World Food Summit, held in 1974, that in 10 years no child would suffer from malnutrition. He was, unfortunately, way off the mark in his prediction. The 1996 World Food Summit (WFS) in Rome had pledged ‘…to eradicate hunger in all countries, with an immediate view of reducing the number of undernourished people to half their present level no later than 2015.’ Further, the first of the Millennium Development Goals (MDGs), established in the year 2000 by the UN, had included the target of ‘cutting by half the proportion of people who suffer from hunger by 2015.’ Progress towards meeting this MDG target (Target 1c) is assessed not only by measuring under-nourishment or
hunger, but also by a second indicator, i.e. the prevalence of underweight children below the age of five.\(^4\)

As regards the MDG 1c, the developing regions, as a whole, have almost reached the target. On the other hand, the Rome Declaration goal of 1996 has been missed by a large margin.\(^5\) The under-nourished population of the world, in 1990–1992, was about one billion. This had to be brought down to 515 million. However, as a substantial number of these persons were freed from hunger, the world population also grew, and the number of hungry people stood at 750 million in 2015.

There were also regional variations in the achievement of the MDG 1c across developing countries. In South Asia, progress has been too slow to meet the international hunger targets. India still has the second highest number of under-nourished people in the world, and has not reached the WFS or the MDG targets. However, on the bright side, higher world food prices, observed since the 2000s, have not entirely translated to higher domestic food prices, thanks to the extended food distribution programmes, though higher economic growth has also not been converted to higher food consumption. India’s food security issues date back many years to the time of colonial rule, and are complex, involving problems of production, distribution, storage and dietary mix. They have immense ramifications for the nation’s health indicators and economic development, which can also impinge on national security. This article attempts to briefly trace the genesis of the problem, outline the strategies undertaken by the Indian State to tackle it, highlight various issues related to food security that have figured in the recent public discourse and also explain the response of the State to address the present problems.

**Historical problems of inadequate production**

Agriculture has been the backbone of the Indian economy, and even today it accounts for 54.6 per cent\(^6\) of the total employment in India. As a share of the GDP, agriculture has declined from 15.2 per cent to 13.9 per cent in 2013–2014.\(^7\) Indian agriculture has been beset with problems since the colonial era. The policies of the British aimed at extracting the maximum possible revenue from the farmers and paid scant attention to improving the agricultural productivity. The Permanent Settlement of 1793 created a new class of landlords and sub-agents who were far removed from the cultivators and interested only in maximising rents for themselves and their colonial masters. The destruction of traditional handicrafts by the British forced several artisans into agriculture for a living. This increased the pressure on land, reduced productivity and impoverished the cultivators and led to food shortages and several protests against the British.

Historical records, dating back to the colonial rule, speak of the frustration and anger of the farmers having led to revolts and high mortality rates. In the Deccan riots of 1875–1879,\(^8\) the peasants of Pune, Satara and Ahmednagar districts had revolted against the British due to the increasing agrarian distress, resulting from poor agricultural prices, heavy taxation by the government and the local chieftains and a sense of political powerlessness of the farming class that upheld the establishment with their hard labour. Similarly, the Pazzhassi Raja in Kerala had also revolted against the East India Company, for dictating the prices, as well as the merchants with whom the trade was to be carried out, resulting in a long-drawn war between the East India Company and the Raja,\(^9\) between 1793 and 1805.\(^10\) India has also suffered several famines that have killed millions of people. In the Great Bengal Famine of 1769–1770, nearly 10 million (or
about one-third of the then population of Bengal) are believed to have perished. In another famine that occurred between 1788 and 1794, an estimated 11 million people may have died in the Deccan. After Queen Victoria assumed paramountcy over India, following the First War of Independence of 1857, there were several famines in which countless Indians died. Notable among them were the Upper Doab Famine of 1860–1861, that killed nearly 2 million Indians, and the Great South Indian Famine of 1876–1878, in which nearly 5.5 million Indians died in British-controlled territories. If the princely states were to be included, then the toll of the famines could range up to 6.3 to 10 million.

Closer to modern times, while the world had been witnessing the holocaust of the Jews in Germany, a silent holocaust took place in Bengal, where nearly 5 million Indians died in the Great Bengal Famine of 1943–1944, since all the grain produced in Bengal had been diverted to British soldiers overseas and the war effort. Little was left in India for local consumption and thousands died from starvation, disease and malnutrition. Though many others had ruled India before the British, starvation deaths had never been recorded. Perhaps, this may be due to the fact that no records were kept except for the laudatory accounts of the rulers or travellers. Nonetheless, India had always been portrayed as a rich country exporting not just jewels, textiles and luxury items, but also home to the much sought-after spices, which made Europeans seek shorter sea routes to India. The fact also remains that the share of the Indian economy had plummeted, from 24 per cent of the world economy in the Mughal era, to a mere 2 per cent in 1947. By then, the famines and the food shortages had become a recurring feature.

**India’s efforts to achieve food security**

Independent India has overcome the problems of famines and mass deaths due to starvation, thanks to the focus given to agriculture, mainly, in the production of cereals. Today, the country produces 104 million tons of rice and 93 million tons of wheat annually, which is more than sufficient to meet the requirements of a widespread Public Distribution System (PDS), distributing cereals at highly subsidised prices. It is not the intention of this paper to go over the details of the Green Revolution and the success in agriculture, which resolved the problem of production. It focuses, rather, on the efforts for the distribution of grains to ensure food security for all, and the problems faced therein. First, a brief summary, of how the PDS came into being and its evolution into a Targeted Public Distribution System (TPDS), culminating recently in the National Food Security Act (NFSA), which confers the right to food on citizens, shall be given. Subsequent sections shall outline the problems faced by the PDS, and the issues which are yet to be resolved. The measures in place in India are as under:

The Public Distribution System, which was initially started as a system to manage food scarcity in the 1940s, has evolved into a system for the distribution of food grains at affordable prices, and is an important part of the government’s policy for food management. The main objectives of food management are: the procurement of food grains from the farmers at remunerative prices; the distribution of food grains to the consumers, particularly, the vulnerable sections of society, at affordable prices; and, the maintenance of food buffers for food security and price stability.

The PDS is supplemental in nature, i.e. it is not intended to make available the entire requirement of any commodity distributed to a household. The PDS is operated as a joint responsibility of the state and central governments. The central
government, through the Food Corporation of India (FCI), has the responsibility for the procurement, storage, transportation and the bulk allocation of food grains to the state governments.

The Food Corporation of India was setup under the Food Corporation Act 1964, in order to fulfil following objectives of the Food Policy:

1. Effective price support operations for safeguarding the interests of the farmers.
2. Distribution of food grains throughout the country for public distribution system
3. Maintaining satisfactory level of operational and buffer stocks of food grains to ensure National Food Security\(^\text{14}\)

The FCI is one of the largest corporations in India, with zonal and regional offices across India. Every year, the Government of India (GoI) declares a Minimum Support Price (MSP) to support the farmers and remove the exploitative middle men. Before each marketing season, the central government also assesses the availability of each crop and fixes targets for the procurement of food grains, at the MSP, through the FCI and the state government agencies. Up to a third of India’s wheat output and approximately 15 per cent of the rice produced are purchased. These stocks are then transported to the depots located all across India, in the FCI’s 24 regions, for issue to the state governments. The rates for sale are declared by the Government of India, and the food grains are distributed, through the Fair Price Shops (FPSs) of the PDS, to ration card holders by the state governments.

The operational responsibility for intra-state allocations, beneficiary identification and the issue of ration cards and the supervision of the fair price shops lies with the state governments. The commodities distributed under the PDS include rice, wheat and coarse grains. Some states also distribute additional items such as sugar, pulses, edible oils, etc.

The Government of India also supplies a limited amount of food grains, procured through the FCI, for Other Welfare Schemes (OWS) like the Mid-Day Meal (MDM) schemes of schools, the programmes of the Department of Women and Child Development, the SC/ST hostels, for natural calamity victims etc. This is small compared to the amount distributed under the PDS.

The Indian ration card system itself is another example of efforts to establish food security. The card, through which the holders establish their identity, makes them eligible and entitled to buy subsidised food and fuel (liquefied petroleum gas, as well as kerosene, both used as fuel for cooking by the poor) through the PDS. It is an important document and a much sought-after proof of identity, as well as a means to obtain essential food items and fuel. It used to be as important as the Aadhar card is today. It is, in fact, much like a passport to a world of benefits that the government announces for the poor.\(^\text{15}\)

Until 1997, the PDS had provided food security to all without any specific targeting of beneficiaries. Consequently, it was widely criticised for its failure to serve the entire population below the poverty line, its urban bias and the lack of transparency and accountability. It was felt that a substantial part of the PDS benefits accrued to the non-poor and it did not have much of an impact on the nutritional
status of those in need. As a result, there were calls for fundamental reforms for targeting the PDS to the poor.

In June 1997, the central government launched the Targeted Public Distribution System, with the focus on the poor. States were required to formulate and implement arrangements for the identification of the poor and the delivery of foodgrains to them. Six crore poor families were to be covered under the TPDS and 72 lakh MT (LMT) foodgrains distributed annually. The poor were to be identified by the states based on the methodology given by Professor D.T. Lakdawala’s expert group. Allotment to the states was to be made on the basis of the average offtake for the last decade. The most distinctive feature of the new policy was the division of the entire population into the ‘Above Poverty Line’ (APL) and the ‘Below Poverty Line’ (BPL) categories, based on the poverty line defined by the Planning Commission. The maximum income limit for the BPL families was kept at Rs 15,000 per annum. The TPDS also had a dual Central Issue Price (CIP) — one for the BPL families and the other for the APL families. The thrust was to include only the really poor and vulnerable sections of society in the BPL category, and the gram panchayats and the nagar palikas were roped in for beneficiary identification. The total number of the BPL families was raised to 652.03 lakh.

In order to make the TPDS more focused towards the very poor, a separate category, under the Antyodaya Anna Yojana (AAY), was launched in December 2000 for one crore families. The AAY identified the poorest of the poor families in the BPL category and provided them with food grains at the highly subsidised rates of Rs 2 per kg for wheat and Rs 3 per kg for rice. The total AAY coverage went up to 2.5 crore families (i.e. 38 per cent of the BPL category) by 2005–2006. The AAY selection guidelines stipulated that the landless agricultural labourers, marginal farmers, rural artisans, craftsmen, those in the informal sector, households headed by widows, terminally ill persons, primitive tribal households, etc., were to be included. All HIV-positive (Human Immunodeficiency Virus) persons in the BPL category were also to be included. Further, a limit was put on the number of AAY families to be identified in each state. The scale of issue was 25 kg per family per month, which was increased to 35 kg per family by 2002.

Under the TPDS, the states were to issue foodgrains at a difference of not more than 50 paise per kg over the CIP. This restriction was later removed and the states were allowed flexibility in fixing the retail prices, except for those under the AAY, where the end retail price for rice was Rs 2 per kg and Rs 3 per kg for wheat.

The allocation of foodgrains, under the TPDS, for the APL, BPL and AAY families was on the basis of the 1993–1994 poverty estimates of the Planning Commission, projected on to the 2000 population estimates of the Registrar General of India, or the number of families identified by the respective state governments, whichever was less. While the allotment of food grains to the BPL and the AAY families is made at the rate of 35 kg per month per family, the allotment to the APL category was made on the basis of stock availability in the central pool and the past offtake. The scale of rationing for the AAY and the BPL families went up from 10 kg per family per month in 1997 to 35 kg per month per family in 2002. This was done in order to enhance food security for the households and to liquidate surplus stocks in the central pool. The APL families were being
allocated 15 to 35 kg per family per month depending on the availability of stocks and the past offtake. The beneficiaries could lift their monthly quota or six months ration at one go.

The states were to bear the costs of distribution, the dealer margins and transportation and also do the beneficiary identification. The TPDS Control Order, 2001, empowered the state governments to take action in order to get the food grains to the beneficiaries, identify households, issue ration cards, license fair price shops, decide issue prices, etc.

The TPDS, though an important step in ensuring food security in India, was criticised on several counts — of leakage, mis-targetting and inefficient supply chain management — in the first 10 years of its implementation. The Planning Commission estimated in March 2005 that for every Rs 3.65 spent by the GoI, only one rupee reached BPL households. Studies showed that the system failed to reach the poor in most states, except in the southern states of Andhra Pradesh, Tamil Nadu and Kerala. Nevertheless, it was also found that the TPDS has improved over time. A National Council of Applied Economic Research (NCAER) study, in 2010, reported a high degree of satisfaction among the beneficiaries for the various indicators of the PDS, including, the quality and quantity of the grain supplied. In a nine-state study, Reetika Khera reported in 2011, that 80 per cent of the beneficiaries felt that the TPDS was important to cover their family’s needs. An increase in coverage was reported from Tamil Nadu, Odisha, Himachal Pradesh and Chattisgarh. But important changes were on the anvil.

These changes came when the Rashtriya Khadya Suraksha Adhiniyam, or the National Food Security Act (NFSA), 2013 (also, the Right to Food Act), was passed by the Parliament of India on September 12, 2013. The Act converts into legal entitlements the schemes such as the Public Distribution System, the Midday Meal Scheme in schools and the Integrated Child Development Services (ICDS). Broadly speaking, it seeks to provide not only food and nutritional security to the beneficiaries, by ensuring access to adequate quantities of quality food at affordable prices, but also a life of dignity.

The salient features of the NFSA are:

(i) Covers 75 per cent of the rural population and 50 per cent of the urban population (two-thirds of the total population)

(ii) Persons belonging to eligible households will be able to receive 5 kg of foodgrains per person per month at Rs 3 per kg for rice, Rs 2 for wheat and Re 1 for coarse grains. The AAY households will continue to get 35 kg per household per month.

(iii) Special focus on nutritional support to women and children, with emphasis on pregnant and lactating mothers and children up to 14 years of age.

(iv) Grievance redressal mechanisms at the district and state levels.

The pregnant and lactating mothers and children under six years of age are to be provided nutritious meals free of cost under the ICDS. Children in the age group of 6–14 years are entitled to free mid-day meals in schools. The pregnant and lactating mothers are to receive cash maternity benefits (Rs 6000) in order to partly compensate the income losses during pregnancy and meet the additional
nutritional requirements. The eldest woman in the household, over 18 years of age, is to be considered the head of the household for the purpose of issue of the ration cards.

The NFSA also has some improved management features. It advocates using the ICT in order to improve service delivery and emphasises grievance redressal and transparency. Since all the states had not implemented the NFSA, after it was enacted, the TPDS Control Order, dated 2015, was superseded and replaced with fresh regulations in consonance with the NFSA provisions. The new TPDS order stipulated transparency measures like putting the BPL list in the public domain and reading it out in the gram sabhas. The NFSA also clearly demarcates the roles of the state and the central governments as follows:

Centre:

(i) Determine the total households, state-wise, that are eligible for ration under the PHH (Priority House Hold) and the AAY categories.
(ii) Fix the quantity and price of the food grains distributed and procured.
(iii) Transport food grains to the state godowns and share the burden for interstate transport.
(iv) Support the states in creating storage space and undertaking computerisation.

States:

(i) Lift food grains from the FCI godowns and ensure the intra-state storage and transportation and distribution to beneficiaries.
(ii) Identify and update the beneficiary list and issue the ration cards.
(iii) Establish institutional arrangements for grievance redressal, social audit and vigilance.

All States have now joined the NFSA. Today, it is one of the world’s largest social security programmes and makes 810 million Indians legally eligible for subsidised food grains. The Act gives legal rights to approximately 67 per cent of the population of India to receive foodgrains at a fixed price through the PDS and has special provisions for pregnant women, lactating mothers and a few categories of children.

No description of India’s PDS can be complete without indicating the figures related to the total requirement of food grains under the various schemes and the costs that the Indian State has to bear in order to meet these commitments. To recapitulate, India is resolute in its aim to provide food security as described in Goal 2 of the Sustainable Development Goals (SDGs), i.e. to end hunger, achieve food security and promote sustainable agriculture. Towards this, the government procures food grains from the farmers, through the FCI and the state agencies, at the MSP and distributes them to the consumers, particularly, the vulnerable sections of society, at affordable prices. It also maintains buffer stocks for food security and price stability. The annual demand for food grains, under the various schemes, presently works out to around 63.8 million metric tons (MMT), as indicated in the table (Table 1) below:
During the 2016–2017, paddy procurement target was 38 MMT and wheat procurement targets were 33 MMT.

Buffer stocks of food grains are also maintained as an operational reserve to ensure the monthly release of food grains for supply through the PDS/OWS. Furthermore, in order to meet the emergency requirements during natural calamities, etc., a strategic reserve is also maintained. The quarter-wise buffer requirements for India are as shown in the table (Table 2) below:

This includes the strategic reserves of 30 LMT of wheat and 20 LMT of rice at all times.

The stocks in the central pool can also be used for market intervention to augment supply and moderate open market prices. The excess stocks are sold by the FCI for this purpose through e-auctions. This also reduces carrying cost and averts deterioration. For 2017–2018, it is estimated that 2 MMT of rice will be sold at open market prices under the Open Market Sale Scheme (Domestic) (OMSS (D)). This quantity, thus sold, is not to be exported. The OMSS figures for the recent years are as given below (Table 3):

Table 1. Annual demand for food grains under various schemes.

<table>
<thead>
<tr>
<th>Sr. No.</th>
<th>Scheme</th>
<th>Quantity (MMT)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>TPDS</td>
<td>54.47</td>
</tr>
<tr>
<td>2</td>
<td>Natural Calamities/Festivals</td>
<td>2.90</td>
</tr>
<tr>
<td>3</td>
<td>Other Welfare Schemes MHRD, SC/ST Hostels, WCD, etc.</td>
<td>5.53</td>
</tr>
<tr>
<td>4</td>
<td>Total</td>
<td>62.90</td>
</tr>
</tbody>
</table>


Table 2. Quarter-wise buffer requirements.

<table>
<thead>
<tr>
<th>Sr. No.</th>
<th>Rice (MMT)</th>
<th>Wheat (MMT)</th>
<th>Total (MMT)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. April 1</td>
<td>13.58</td>
<td>7.46</td>
<td>21.04</td>
</tr>
<tr>
<td>2. July 1</td>
<td>13.54</td>
<td>27.58</td>
<td>41.02</td>
</tr>
<tr>
<td>3. October 1</td>
<td>10.25</td>
<td>20.52</td>
<td>30.77</td>
</tr>
<tr>
<td>4. January 1</td>
<td>7.61</td>
<td>13.80</td>
<td>21.41</td>
</tr>
</tbody>
</table>


Table 3. Offtake under the OMSS(D) scheme.

<table>
<thead>
<tr>
<th>Sr. No.</th>
<th>Year</th>
<th>Wheat in Lakh Metric Tons (LMT)</th>
<th>Rice in Lakh Metric tons (LMT)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td>2012–13</td>
<td>68.67</td>
<td>0.99</td>
</tr>
<tr>
<td>2.</td>
<td>2013–14</td>
<td>61.16</td>
<td>1.68</td>
</tr>
<tr>
<td>3.</td>
<td>2014–15</td>
<td>42.37</td>
<td>–</td>
</tr>
<tr>
<td>4.</td>
<td>2015–16</td>
<td>70.77</td>
<td>1.11</td>
</tr>
<tr>
<td>5.</td>
<td>2016–17</td>
<td>45.67</td>
<td>1.78</td>
</tr>
<tr>
<td>6.</td>
<td>2017–18*</td>
<td>07.49</td>
<td>3.01</td>
</tr>
</tbody>
</table>

*Up to December 2017.

The food subsidy bill of the central Government has also steadily increased mainly due to the constant increase in the MSP and the reduction in the CIP, particularly, after the implementation of the NFSA. The trends for the subsidy bill are shown below (Table 4):

### Present criticism of the Indian food security system

As shown above, India’s problem of food security was initially centred on low agricultural output and the poor availability of food grains. The problems are now different. There is frustration regarding the state of agriculture and suicides by farmers. The high prices of essential commodities, and low returns for farmers, have been making news and have become rallying causes during elections. Suicides by farmers continues to make news and is a cause of great concern. The government has initiated several measures to assist farmers and promote agriculture, which continues to be the mainstay of the Indian economy. However, there are also issues like those of the growing water scarcity, climate change and the ecological hazards posed by the increasing use of chemical fertilisers and pesticides. These problems call for better agricultural methods, like, organic farming, integrated pest management, crop diversification, the use of bio fertilisers and proper water and land management, for ensuring sustainable food security. However, a discussion of these would be outside the scope of this article, which focuses on food security from the point of view of the management and the distribution of food stocks, especially, now that the nation has attained self-sufficiency in food production. The storage of food grains has been a problem in India. Large quantities of harvest are lost due to poor post-harvest handling. It is also alleged that the transportation of food grains has not been streamlined and huge losses occur even before the produce reaches the FCI godowns. Within the godowns further losses occur due to rodents or bad storage practices. There have been reports in the press alleging large-scale losses due to bad storage, transit and theft.

A study conducted by the Indian Council for Research on International Economic Relations (ICRIER) found that the highest percentage of pilferage takes place in the poorer states, and recommended cash transfers to tackle this fallout of poor governance. It also stated that while there is a proliferation of millions of ineligible, fake and bogus ration cards, there are also, simultaneously, several genuinely poor

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**Table 4. Trends in the food subsidy bill.**

<table>
<thead>
<tr>
<th>Sr. No.</th>
<th>Year</th>
<th>Subsidy (Rs Cr)</th>
<th>% increase</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td>2010–11</td>
<td>62929</td>
<td>8</td>
</tr>
<tr>
<td>2.</td>
<td>2011–12</td>
<td>72370</td>
<td>15</td>
</tr>
<tr>
<td>3.</td>
<td>2012–13</td>
<td>84554</td>
<td>16.8</td>
</tr>
<tr>
<td>5.</td>
<td>2014–15</td>
<td>113171</td>
<td>26.11</td>
</tr>
<tr>
<td>6.</td>
<td>2015–16</td>
<td>134919</td>
<td>19.2</td>
</tr>
<tr>
<td>7.</td>
<td>2016–17</td>
<td>130672</td>
<td>−3.14</td>
</tr>
<tr>
<td>7</td>
<td>2017–18</td>
<td>136901*</td>
<td>-</td>
</tr>
</tbody>
</table>

*As of December 31, 2017.
families in need that do not even possess ration cards. It alleged that the PDS shop owners, in collusion with the government officials, divert the subsidised food supply to the black market. The inflated number of ration cards—resulting from a proliferation of bogus ration cards, issued in the names of fake people, or duplicate cards, issued to those from other areas increases the leakages continuously, leaving the intended beneficiaries in the lurch. The ration allotments of fake people and the unused quotas of the real beneficiaries are shown as fully used, while the material is diverted to the black market instead, thereby causing a huge loss of public money.

The issue of leakages has been constantly debated and several solutions, including, Direct Benefit Transfer (DBT), have been proposed. The developed states, mainly some of the southern states, have managed to efficiently plug leakages. Some states, like Chhattisgarh, have used IT-enabled services for delivery, yet, complaints of huge leakages have persisted. This indicates a lack of governance measures to ensure ease of access, transparency, and a system that guarantees delivery in a fair and transparent manner. It is alleged that the current system in India is unable to fully accomplish its goals as it is too dependent on political will and accepts leakages. It makes rice available for ₹3 through the PDS, while it costs anything from ₹20 to ₹30 in the market. In order to do this, the FCI procures the rice at an economic cost of ₹30 per kg, which goes towards procurement, transportation, stocking and distribution. An Indian Express editorial recommended, what experts have been saying all along, that it would be more efficient for the Centre to directly transfer the subsidy to the beneficiary, having opened a record number of Jan Dhan Accounts, and being in a position to leverage the strengths of the Aadhar Card. The Centre would then only need to procure stocks and maintain buffers and intervene when the situation demanded. 25

The UN has expressed concern for the poor facing malnourishment and starvation. Economic growth does not guarantee the end of hunger, it has said, pointing out that even developed countries have safety nets to help the vulnerable groups. India, despite its massive economic growth in recent years, has continued to have a large number of children facing malnourishment. 26 In order to be healthy, children do not just need food, they also need nutrients such as vitamins and minerals. For instance, a deficiency of Vitamin A can cause blindness. Similarly, a lack of the mineral iron causes anaemia, and many Indian mothers, in fact, are anaemic. The UN agencies that are monitoring the progress towards the MDGs have also noted that while malnutrition in India has decreased, as a result of the food security systems and the PDS, it still continues to rank low on the Global Hunger Index. The implementation of the NFSA has also thrown up a host of concerns, many of which are still being resolved. Some of the significant issues are:

(i) The coverage in each state was determined by the Planning Commission with the help of the NSS Household Consumption Surveys. In case the NFSA allocation for a state was lesser than that under the TPDS, it would be protected up to the level of the average offtake for the last three years, at prices to be fixed by the central government through a tide over scheme. The overall requirement of foodgrains, under the NFSA, was initially estimated at 61 million tons per annum, for all components including allotments to beneficiaries under PHH and AAY, OWS and for tide over commitments. It was expected that the NFSA would lead to greater offtake, however/yet, some states, like Kerala, have complained that their NFSA offtake is less than that under the TPDS.
(ii) What would be the food subsidy bill, with the additional commitment of setting up new institutions and the need to protect the existing beneficiaries, many of whom were not grandfathered in the bill? It was feared that the NFSA would cost more than had been estimated. Were the costs of running the new State Food Commissions and the District Grievance Redressal Offices (DGROs) factored in, as also the cash benefits? Prachi Mishra has stated in the Economic and Political Weekly that the Department of Food and Public Distribution (DFPD) estimated that the total incremental costs were to be roughly Rs 20,760 crores annually, with Rs 8,760 crores incurred by the states and the remaining costs shared between the Centre and the states. The additional expenditure for these items was shown in Table 5 which is as under:

However, these costs did not include the estimates for identifying new beneficiaries, the strengthening of civil supplies corporations and the vigilance committees, etc. It would appear that the additional costs of the various extra items specified in the NFSB cannot be easily quantified 

(i) There is also the issue of who gains and who loses. Previous writers on this subject have made interesting projections. Prachi Mishra writing in the Economic and Political Weekly has said that as far as the AAY group is concerned, their entitlement remains unchanged at 7 kg per month per person, at the same issue prices of Rs 2/kg for rice and Rs 3/kg for wheat. The same beneficiaries will be fully covered and retain all of their earlier entitlements. The remaining BPL individuals (62%) will get 5 kg of foodgrains each, per month, but at lower prices. However, the reduction in the quantity of food, from the earlier 7 kg per person, will make them worse off on the whole. About 71 per cent of the APL group will move in to the covered category and receive 2 kg additional foodgrains at a lower issue price. They will, consequently, be better off. The remaining APL persons, however, will cease to be covered under the PDS and definitely be worse off. It may however be noted that the entitlements as factually mentioned in the NFSA are: 35 Kg of subsidized food grains to each Antyodaya Anna Yojana (AAY) household per month, and 5 kg of subsidized foodgrains per person per month to the Priority Household (PHH) category. Also there are no BPL and APL categories under NFSA and beneficiaries (other than AAY beneficiaries) are referred to as PHH individuals.

Table 5. Additional annual expenditure under NFSA.

<table>
<thead>
<tr>
<th>Sr. No.</th>
<th>Cost Element</th>
<th>State (Rs Cr)</th>
<th>Shared between Centre (Rs Cr) and State</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td>DGRO</td>
<td>320</td>
<td>0</td>
<td></td>
</tr>
<tr>
<td>2.</td>
<td>SFC</td>
<td>140</td>
<td>0</td>
<td></td>
</tr>
<tr>
<td>3.</td>
<td>Intra-State Transport/Handling</td>
<td>8300</td>
<td></td>
<td></td>
</tr>
<tr>
<td>4.</td>
<td>Maternity Benefit</td>
<td></td>
<td>12000</td>
<td>20760</td>
</tr>
<tr>
<td>Total</td>
<td></td>
<td>8760</td>
<td>12000</td>
<td></td>
</tr>
</tbody>
</table>

(ii) Overall, 46 per cent of the TPDS beneficiaries will be better off, 14 per cent will experience no change, while 40 per cent will be worse off. If existing beneficiaries are grandfathered off, then the estimated incremental costs could be higher. It is estimated that the additional costs for grandfathering the beneficiaries would be Rs 44,425 crores. The political pressure to include all erstwhile beneficiaries would lead to such incremental costs. There is a risk of including all those who had been erroneously classified as BPL in the first place. Further, it has been pointed out that the offtake increases as the prices decrease, and this poses a hazard of greater expenditure under the NFSA, in which case, all estimates for additional expenditure may be underestimates.

(iii) The passage of the NFSA was marked by controversy. More than 300 amendments were introduced in the Parliament. While some bemoaned the burden that it would impose on the exchequer and the resultant opportunity costs to other economic development projects, there were also those who wanted the ambit of the NFSA expanded instead—to include community kitchens, feeding programs, pulses, etc.

(iv) The arguments against the NFSA have been financial. Economist Surjit Bhalla argued that the costs would come to Rs 3 lakh crores annually (3% of the GDP), which was more than DFPD’s estimates, taking into account the existing leakages in the PDS, as well as the increased offtake under the NFSA. He estimated that the NFSA would have to supply 8.53 kg per head, in order to deliver 5 kg, due to the leakages. Ashok Gulati, at the Commission for Agricultural Costs and Prices (CACP), pegged the figure at 2.23 lakh crores per year, based on a foodgrain requirement of 75 MMT per annum, rather than the 61.4 MMT estimated by the DFPD. Prachi Mishra, writing in the Economic and Political Weekly, anticipated that the increased cost of the NFSA would be between Rs 44,000 crore to Rs 75,000 crore, given the inevitable need for grandfathering previous beneficiaries of the TPDS, who may have been excluded from the NFSA, and the costs of setting up the state and district grievance redressal systems. All of these arguments, however, have their drawbacks. Bhalla assumes a continued trend of leakages and theft in the PDS. This may not be fully correct, since the FCI has already reduced its figures of damages/leakages in recent years, and may reduce them even further, thanks to the spread of digitisation and increasing citizens’ awareness. The present NFSA offtake does not justify Professor Gulati’s arguments either. As for the arguments made by Prachi Mishra, the jury is still out on them, as the sharing pattern between the states and the Center has not been decided yet. The grandfathering of beneficiaries may not pose very high costs, as many states had been giving only 5 kg per head to BPL persons, and had excluded the APL families from the TPDS already.

The real issues, however, may lie elsewhere. Will the NFSA be able to select the beneficiaries correctly? Will the Socio Economic and Caste Census (SECC) provide the right basis for this exercise? How can we further reduce the cost of supply by reducing the damages and the leakages, and increasing decentralised procurement? Finally, did the failure of the NFSB to include pulses and edible oils in its ambit, in
order to truly tackle the problem of malnutrition, represent a lost opportunity?\textsuperscript{36} But, it is worth noting that given the high costs, these measures would have been difficult to push through.

**Some recent developments**

After the passage of the NFSA, there have been some developments in the management of India’s food security. These are, mainly, in terms of the streamlining of the system, as well as improving the managerial efficiency, and are worthy of mention.

First, the Government of India set up a High Level Committee (HLC) in 2014, with Shri Shanta Kumar as its Chairman, and six other members, to make recommendations regarding the restructuring/unbundling of the FCI, with a view to improve its efficiency and financial management. This included exploring more effective methods for the storage and movement of foodgrains across the country, as well as the integration of the supply chain. The Committee held wide-ranging consultations with stakeholders and submitted its report in January 2015. The HLC concluded that while India has moved far away from the food shortages of the 1960s, into the surpluses of the post-2010 period, yet, somehow, the food management system has not been able to deliver its objectives very efficiently. The benefits of procurement have not gone to a larger number of farmers, beyond a few states, and the leakages in the TPDS have continued to be high. The main recommendations of the HLC, to combat these problems, were as follows:

(i) The FCI should decentralise the procurement of wheat and paddy to those states that have built up the necessary capacities and infrastructure for this purpose, and focus, instead, on procurement from those farmers that suffer from distress sale conditions in states like UP, Bihar, West Bengal, Assam, etc., i.e. the states from where a second green revolution is expected. The DFPD will draw out the costing norms for such decentralised procurement (DCP).

(ii) The Negotiable Warehouse Receipt (NWR) system should be taken up and scaled up quickly in order to enable the farmers to get better storage facilities, better returns and bank pledge financing for their produce.\textsuperscript{37}

(iii) To reduce the high leakages from the PDS, the government should speed up end-to-end computerisation and defer the implementation of the NFSA in states that have not yet done this. The end-to-end computerisation should be done for the entire food management system, from procurement to depot stocking, and movement to distribution, in the PDS.

(iv) The coverage of 67 per cent of the population under the NFSA may be reconsidered. It may be brought down to 40 per cent, which will comfortably cover all of the BPL families, and some above that. The allotments to the beneficiaries may then be increased to 7 kg per person per month, as the present 5 kg makes them worse off than they were under the erstwhile TPDS.

(v) Cash transfers (DBT) may be gradually introduced in the PDS, starting with large cities with more than 1 million population. This will reduce the leakages in the PDS and the burden on the exchequer.
(vi) The FCI should opt for greater containerisation and silos for storage. Cover and plinth (CAP), a temporary open storage, should be phased out, and the state governments and the private sector should be involved through the private entrepreneur guarantee (PEG) scheme for building new storage facilities.

(vii) Buffer stocking should be managed efficiently so that the FCI does not carry more than the required stocks and excess stocks are pro-actively liquidated through open market sales.

(viii) The FCI should rationalise its policies towards its departmental and contract labour work norms so that excess payment is not made to some and low payments made to others.

(ix) Direct subsidies may be given to farmers for the purchase of fertilisers and inputs, rather than subsidising the fertiliser companies for their production.

Pursuant to the HLC report, several initiatives to improve efficiency were undertaken by the FCI and the DFPD. These are briefly summarised below:

(i) The decentralised procurement (DCP) operations were extended to 17 states by 2017. This resulted in considerable savings in inter-state transportation and storage charges, besides bringing in more farmers under the ambit of MSP procurement.

(ii) The programme of end-to-end computerisation was vigorously followed by the DFPD on a cost sharing basis with the states/UTs. This included the digitisation of the beneficiary database and the ration cards for proper beneficiary identification. By 2017, 62 per cent of the ration cards in the country were digitised and seeded with Aadhar numbers, identifying and removing 2.16 crore bogus cards in the process. This is 9 per cent of the total 24 crore ration cards in the country. Many states/UTs started automating their fair price shops by installing electronic point of sale (e-pos) machines. This allows correct beneficiary identification and reports sales data to the public domain. The FCI also undertook the digitisation and networking of all its depot transactions, leading to better control and coordination.

(iii) The DFPD also started DBT operations in the three union territories of Puduchery, Chandigarh and Dadra and Nagar Haveli, in place of the traditional TPDS. The food subsidy component was credited to the bank accounts of the beneficiaries, who were free to buy foodgrains from the market. 8.26 lakh beneficiaries were identified.

(iv) The FCI has targeted the construction of 100 LMT of modern silo space within five years and also continued with its PEG scheme, initiated in 2013, for the construction of godowns through the private sector.

(v) The FCI has steadily reduced its storage and transit losses. It signed an MoU with the DFPD for this purpose. The target for storage losses for 2015–2016 was 0.15 per cent of the foodgrains handled, as compared to 0.21 per cent the previous year. The transit losses target for the same period were 0.42 per cent and 0.45 per cent, respectively.
Conclusions and a SWOT analysis of food security in India

In conclusion, we may state that the major strength of the Indian food security system has been in achieving self-sufficiency in the production of cereals and in setting up the PDS. The PDS, through the distribution of essential foodgrains across the country, at subsidised and affordable prices, has prevented famines successfully. Amongst India’s strengths is also the system of procurement that has been put in place and the capacity built up to hold large buffer stocks. The strong political and administrative will that has been exhibited in the country, through all these years, to sustain and improve the PDS, is no doubt a major strength. This is apparent when one looks at the measures such as the TPDS and the NFSA, which have been successfully put in place and implemented.

The weaknesses, however, as evident from the facts brought out in this article, are those of post-harvest storage and the transit losses due to inefficient systems. The fact that the MSP procurement does not cover a large number of farmers, and also many important crops, adequately, is also a weakness. It encourages the presence of middlemen who extract the farm produce at low prices, and sell it at much higher margins. Another weakness of the system has been that while it has prevented starvation and famines through the supply of carbohydrates, it has not successfully overcome the issues of malnutrition and stunting. Despite the large and unprecedented buffer stocks, huge pockets of hunger and deprivation continue to exist.

The opportunities, nonetheless, lie in the availability of improved and cheaper IT-based technology and management systems. These can be utilised for supply chain management and the control of retail operations at the ration shops. This includes the use of Aadhar-based beneficiary identification at the ration shops and software for the tracking of stock movements in order to prevent theft. The availability of modern storage techniques like silos, as well as public private partnerships to construct new storage, are also opportunities.

Several threats also loom large. There is the ever-present threat of corruption, which results in the denial of essential foodgrains to the vulnerable groups. This is present from the procurement stage to that of distribution. Recent developments in the World Trade Organization (WTO) have also threatened to adversely impact our food security system. Simply put, many of the WTO members, particularly the developed nations, have opposed our MSP-based public stock holding on the grounds that it distorts markets, and have suggested many limitations on it. This paper will not go into the details of this matter as it is a vast subject in itself. We will restrict ourselves to stating that this is a problem area that needs to be addressed and that, for the moment, the threat has been put in abeyance by the stand taken by the country at the WTO.

Strengths must be used, weaknesses remedied, opportunities seized and threats overcome if we are to preserve and improve the nation’s food security. Several methods have been suggested by experts, including, most recently, the HLC. It may be seen that some essential steps have been taken.

For instance, the use of IT-based end-to-end computerisation has succeeded in reducing the FCI’s storage and transit losses considerably. The same, however, cannot be said regarding the losses due to corruption and the diversion at level of distribution and fair price shops. Yet, the digitisation of ration cards and the introduction of e-pos machines are steps in the right direction. If assiduously
implemented, these shall definitely show results. The recent identification of 2.16 crore bogus ration cards shows that major results can be achieved.

It is not yet clear how the issues of stunting and malnutrition can be addressed by the PDS. Did the NFSA’s failure to include pulses and edible oils in its ambit, in order to truly tackle the immense problem of malnutrition, represent a lost opportunity? Could it have focused on providing food to the destitute and the starving? This may have reduced the costs of inaction on hunger and malnutrition, which ultimately manifests itself in reduced health and productivity outcomes. But given the high costs, these measures would have been difficult to push through. This is clear when one looks at the food subsidy bill and the debate on the NFSA.

The NFSA contains provisions for grievance redressal and the implementation of IT-enabled monitoring systems has placed large amounts of data in the public domain. These are steps that could reduce corruption in the PDS, though they would have to be accompanied by considerable administrative will. The implementation of DBT as a measure to reduce leakages and corruption has not progressed beyond three urban areas, to make an impact. There is also the issue of who would procure from the farmers, to encourage and sustain food grain production, if DBT usage is widened.

India’s stand at the WTO has staved off any immediate threat to the MSP-based public stock holding, which is essential for our domestic obligations to feed and sustain the millions of India’s poor. India will have to continue to find ways to balance the demands of the international community and this obligation.

Having drawn the above inferences, it must also be stated the food security system requires constant improvements to ensure good delivery mechanisms, supply chain management and an easy accessibility with price stability through fair prices shops. The food security framework has evolved from the PDS to the TPDS and now to the NFSA. It has been studied carefully by expert bodies like the HLC. Within this framework, there must be continuous attempts to reduce the food subsidy bill by controlling losses and leakages through a greater use of technology and better management. Attention must be given to ensure that farming continues to be supported in the face of threats like climate change and the failure of the monsoons. The present agricultural production situation may look comfortable, but coupled with a growing population, the situation could get more difficult in the future. Ceaseless efforts are, therefore, required to improve upon the food security in the country.

**Disclosure statement**

No potential conflict of interest was reported by the authors.

**Notes**


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