

## Food Security In India: Policy Issues And Challenges

**Mrs. Sheeba K H**

Assistant Professor,  
Department of Business Administration,  
M E S College, Kerala, India

### **Abstract:**

The euphoria of green revolution and related measures started fading with time and there has been a

progressive decline in public investment in agriculture during 1960 and 2012. There have been challenges and gaps in tackling the problem of poverty and hunger across the States in the country. Although India has been able to eradicate famine or has reduced the risks of famine like situation through its Public Distribution System (PDS) network, the food sufficiency, quality and nutritive value of foodgrains have now emerged as a considerable challenge along with the related issues of poverty and nutrition. The debates are also on about the possible adverse impact of climate change over the years on agriculture sector towards sustaining the agro produce. In this context, the planners, the policy makers and researchers have been exploring ways and means to ensure food security to the country's millions of citizens.

**Keywords:** *Foodgrains, Poverty, Malnutrition, GDP, Food security, BPL.*

### **Introduction**

Evolution of public distribution of grains in India had its origin in the 'rationing' system introduced by the British during the World War II. In view of the fact that the rationing system and its successor, the public distribution system (PDS) has played an important role in attaining higher levels of the household food security and completely eliminating the threats of famines from the face of the country, it will be in the fitness of things that its evolution, working and efficacy are examined in some details. It was really the generation of World War's own compulsions that forced the then British Government to introduce the first structured public distribution of cereals in India through the rationing system-sale of a fixed quantity of ration (rice or wheat) to entitled families (ration card holders) in specified cities/towns. The system was started in 1939 in Bombay and subsequently extended to other cities and towns. By the end of 1943, 13 cities had been brought under the coverage of rationing and by 1946; as many as 771 cities/towns were covered. Some rural areas, suffering from chronic shortage were also covered. The Department of Food under the Government of India was created in 1942, which helped in food matters getting the serious attention of the government. When the War ended, India, like many other countries, decided to abolish the rationing system. This was in 1943. However, on attaining Independence, India was forced to reintroduce it in 1950 in the face of renewed inflationary pressures in the economy immediately after independence "which were accentuated by the already prevailing high global prices of foodgrains at the end of the War, which were around four times higher than the prewar prices".

Public distribution of foodgrains was retained as a deliberate social policy by India, when it embarked on the path of a planned economic development in 1951. It was, in fact, an important component of the policy of growth with justice. In the first five year plan, the system, which was

essentially urban based till then was extended to all such rural areas which suffered from chronic food shortages. It was also decided to have two variations of the system, Statutory Rationing Areas, where foodgrains availability was supposed to be only through the Ration Shops and Non-Statutory Rationing Areas, where such shops would only supplement the open market availability. The system, however, continued to remain an essentially urban oriented activity. In fact, towards the end of the first five year plan (1956), the system was losing its relevance due to comfortable foodgrains availability. The net (gross minus 12.5 per cent for seed, feed and wastage) retail level availability of foodgrains had jumped from 54.0 million tonnes in 1953 to 63.3 million tonnes in 1954 and remained at 63 plus million tonnes up to end of the first five year plan. This situation even prompted the government to abandon procurement of foodgrains and remove all controls on the private trading in foodgrains. However, true to its cyclic nature, the production dropped to 58.3 million tonnes in 1958, when the second five year plan had just started and forced the government to not only restart the procurement of cereals and put control on trading of foodgrains but re-examine the need for public distribution system (PDS). It was decided to re-introduce PDS. Other essential commodities like sugar, cooking coal, kerosene oil were added to the commodity basket of PDS. There was also a rapid increase in the Ration Shops (now being increasingly called the fair price shops-FPSs) and their number went up from 18000 in 1957 to 51000 in 1961. Moreover, quantity of foodgrains distributed through PDS started getting increased with PL-480 availability. Thus, by the end of the Second Five Year Plan, PDS had changed from the typical rationing system to a social safety system, making available foodgrains at a 'fair price' so that access of households to foodgrain could be improved and such distribution could keep a check on the speculative tendencies in the market. The concept of buffer stocks was also incorporated in the overall food policy, although no buffer worth the name was required to be created in view of easy and continuous availability of PL-480 grains.

### **Statement of the Problem**

The definitional jurisdiction of “food security” comprises three inherent and important dimensions viz., availability, accessibility and stability of food articles. While availability of food is a function of production of foodgrains, the accessibility to food relies on the State’s food policy coupled with the purchasing power of the consumer. The third dimension is “stabilization” which is influenced by the sustainability of the food system. To a large extent, the sustainability of a food system minimizes the probability of risks related to food insecurity in normal as well as difficult times by ensuring the food consumption at a required level.

Though India is one of the largest producers of the food in the world, yet nearly 300 million people struggle for meeting two square meals a day and 21% of the national population is malnourished. This indicates the issues of accessibility to adequate and nutritive food to the poor. Further, it is well documented that most poor families in the world spend 80% of their total income on food grains and insufficient purchasing power deprives them from accessing food in right quantity. In this backdrop, an attempt is made to assess the trends in the foodgrain production, yield and availability and examine the efficacy of food based security net of the government towards achieving its objective of universal food and nutritional security.

### **Objectives**

The basic objective of the study is to analyze food security in india: policy issues and challenges

The specific objectives of the proposed study are the following:

**Minor:**

1. To analyze the factors governing PDS in India.
2. To measure the effectiveness of PDS in India.
3. To analyze the changes made in the BPL sector for its upliftment through PDS in India.

**Major:**

1. To determine the cause and effect of Food security policies in India.
2. To analyze the changes brought about in the poverty status of India through PDS and food security measures.
3. To study the impact of policies and challenges faced in implementation of PDS and food security measures in India.

**Methodology****Approach**

The study basically relates to Management. Source materials are needed to be drawn from different branches of Management and Economics. Aspects of Food security and PDS are interdisciplinary in character and it is based on a fundamental premise that Poverty alleviation will be resulted with this phenomenon.

**Data Collection**

The study requires primary and secondary data. For collecting primary data, the envisaged field survey comprising an individual survey and an institutional survey were conducted. For a thorough investigation, structured schedules containing aspects of multifarious facets of the subject of enquiry were prepared and administered in consultation with the Research Guide and other Experts in the subject area. A comprehensive review of relevant literature including books, articles, news reports and other published and unpublished documents served as sources of secondary data.

**Analysis**

A study on the Food security in India: policy issues and challenges is multidimensional requiring a comprehensive approach. Analytical tools specific to those aspects were improvised and employed in the present study, apart from the conventional statistical and analytical tools that are appropriately applicable to the nature of the data collected and conforming to the stated objectives of the study.

**Review of the Literature****Review of PDS in India**

The PDS has been functioning for more than four decades now, if we leave aside its predecessor, the rationing system. Its greatest achievement lies in preventing any more famines in India. As recently as during the 1987 drought, considered worst in the century, the PDS helped the country overcome it with dignity and effectiveness. "The result of diet and nutrition survey during the 1987 drought showed that widespread hunger and its consequences experienced earlier in 1960, & 1970 were arrested in 1987". Of course, build up of a buffer in preceding years provided the wherewithal's to PDS as well as food for work type of programmes. Its major drawback, however, has been its lack of effective contribution towards household food security. In fact, it remains one of the weaker components of the food policy trioka of procurement, distribution and stocking. The other two components have fully exhibited their worth. But for carefully worked out support prices with a structure to guarantee these, the farmer would not have been induced to produce more and more foodgrains. In fact, without FCI and other procuring agencies ready at thousands of purchase centres to step in and purchase grain if the producer was not getting higher

price than the Government announced procurement price, the private trade could never have handled the huge quantities that come to market at harvest time and prices would have crashed, making all the efforts and investment of farmer go waste. As for the buffer stocks, it was the stock built in the preceding years (which had reached an all time high of 27 million tonnes on 1.7.1986), which came handy and enabled the country to meet the challenge thrown up by the great drought of 1986-87, a challenge which was met successfully without seeking any food aid from any quarter. No desperate purchases were required and import of some wheat and rice could be deferred to 1988-89 when the country could import on its own terms. The PDS also, no doubt, played a great role by making available rice and wheat at the fixed prices to consumers in all nooks and corners of the country, thereby preventing the spectre of famine in any part of the country. This distribution network also supplied grains for the "food for work" type programmes taken up on a large scale to fight the drought. The shortcomings noticed in the functioning of PDS as it is structured presently, range from it being urban biased and pro-rich to its ineffectiveness in reaching the poor. The system has, however, come to stay, notwithstanding its shortcomings, because millions of India's poor derive direct or indirect benefits from the very existence of this system. The World Bank in their report of 1991 has observed that "poverty consideration will compel India to sustain publicly sponsored foodgrain procurement, storage and distribution efforts. These programmes are even more important in a period of economic downturn and adjustment, to ensure an adequate safety net". As regards urban bias, a study has shown that "in case of all commodities except coal, more than 50 per cent of the total quantity purchased under PDS is in the rural areas... PDS is rural based at all-India level for rice, coarse cereals, sugar and cloth. These items constitute more than 60 per cent of the total PDS purchases. Hence, it appears that PDS is not urban biased but pro-rural" (Mahendra Dev & Suryanarayana, 1991). As regards its being pro-rich, the same study finds that "more or less all the population [income] groups depend uniformly to the same extent on the PDS with respect to all commodities in rural areas, even though there were slight variations", (Dev & Suryanarayana, 1991). Thus, even though PDS appears to be even-handed for all income groups, this very finding points to its failure in achieving its basic goal of helping the poor.

It is also said that PDS is not cost effective, its operations are too costly and the ratio between procurement and transportation is too high pointing to 'wasteful' movements. It is also mentioned that storage losses are very high. However, if one was to analyze the various costs of FCI, it will be seen that almost 80% of the costs of FCI are non-controllable and FCI just cannot do anything if these rise. Example of such costs is minimum support price/ procurement price which have increased by almost 20% per annum in the past four years; interest rates for bank credit; rail and road transportation cost etc. Thus, hardly 20% of the costs are amenable to cost reduction by FCI and efforts need to be intensified in increasing labour productivity i.e., handling costs; rationalization of movement plans to avoid criss-cross movement; reduction in transit and storage losses etc. Another valid criticism of the PDS is its marginal impact, as far as income transfer to poor households is concerned, with too many or everyone being eligible to draw foodgrains from PDS, the per capita transfer of income is very small. In a study based on National Sample Survey's 42nd round (NSSO, 1990), it has been found that "the value of the subsidy is so little even for those households who make all their purchases of cereals from ration shops. For the bottom 20% of the rural population, the subsidy is no more than Rs. 2.08 per capita per 30 days. With the average family size of 6, the subsidy per family is almost Rs. 12.50 per month. In other words, it is useful to note here, one person day of additional employment per family per month would provide the same income support as provided by the cereals distributed under PDS". Most of the above shortcomings flow from the universal nature of the present PDS, with benefit having been thinly spread over all the beneficiaries, be they rich or poor. "While a number of studies have suggested proper targeting of PDS, none of them have discussed the costs and political feasibility of targeting. The

administrative costs of targeting have been reported to be high in some developing countries. Many studies have also reported a high percentage of leakages in the event of targeting". (Radhakrishnan & Rao, 1993). The main weakness in PDS i.e. not reaching poor effectively stems from the universality of the PDS coverage. Every household, irrespective of its income, can have an entitlement card and draw foodgrains against it. This in turn leads to low scales per household and first come first served system of delivery. These two combine to allow leakages and diversions on the one hand and "no commitment" syndrome on the part of the poor households on the other. If PDS could be targeted to the poor, a larger proportion of the household's requirement could be met by enhancing the scale and it would also be able to generate a commitment on the part of card holders on the system. Beneficiaries could then be organized and educated. They would then monitor the supplies and sales themselves to ensure that supplies reach the fair price shop in proper quantity and quality and are sold to genuine beneficiaries. The entitled households would also then demand their quota from the FPS owner and would not be turned away by the shopkeeper by saying that whatever quantity had come has been sold away or that the bad quality grains were supplied (in some cases replaced by unscrupulous vested interest) and beneficiary would find such stocks not worth purchasing at that price. Targeting of PDS to the really needy is, therefore, immediately required and an effective PDS maintained till such time the country has poor, needy households.

### **Suggestions for Improvement of Existing PDS**

The author had conducted a survey of the actual operation of the PDS in the two Himalayan hill districts of Uttar Pradesh state in the Northern India (Nawani, N.P., Unpub, Sept. 1993). PDS beneficiaries (i.e. head of the household) as well as Fair Price Shop (FPS) owners were selected on random basis although in case of FPSs, effort was made to select FPS, on the basis of distance from the motorable road. In all, 16 FPSs and 128 households were taken up for detailed survey on the basis of two different sets of questionnaires. Attempt was also made to select households from amongst various income groups i.e. under each FPS, two households each from out of farmers, salaried/businessman, part-farmers and labourers/unemployed. Research methodology adopted consisted of detailed survey of households and FPS owners as also personal discussions with selected households, people at large and local officials. Such talks and on the spot discussions were mainly held by the author himself although the two supervisors of Investigators in each of the two district also did this as they visited all villages selected for survey and they, in turn, had detailed discussions with the author. The survey threw up some suggestions for improvement in the functioning of PDS which without going into their details, are briefly mentioned below:

- i) Delivery of Stocks to FPSs should be on actual and not on sample weighing.
- ii) Retail price at FPSs should be uniform throughout the state/area after weight-averaging the transport cost for the FPS.
- iii) Regular supply of good quality grains has to be ensured.
- iv) Entitlement card's easy availability and improvement in its design and durability.
- v) FPS doorstep delivery of PDS commodities instead of delivery to FPS owners at FCI godowns.
- vi) Improvement in the viability of FPSs.
- vii) Enlarging the basket of PDS commodities to enhance its utility as also to improve economic viability of FPSs.
- viii) Steamlining of the supply chain by construction of small intermediary godowns between FCI's base godown and FPSs in the interior.
- ix) Introduction of a more effective Management Information System.

### **Policy Reforms Required in PDS**

Almost all food-managers, experts and even members of the political executive feel that targeting PDS to poor is a fundamental reform that cannot be deferred for too long. In the study report submitted by the author to the Minister for Civil Supplies (Nawani, N.P., Sept. 1993) not only the targetisation of PDS has been strongly recommended but the way it can be implemented, keeping the twin objectives in mind, that of making PDS an effective safety net for poor and keeping distribution within limits set by domestic procurement and subsidy budget. As an effective PDS will greatly enhance food security for poor households, it is proposed to deal with it in somewhat greater detail. However, before we go on to that, a brief description of some measures already initiated by the Prime Minister (When he was also holding the portfolio of the Minister for Civil Supplies, Consumer Affairs and Public Distribution) in 1992 will be in order.

### **Revamping of PDS**

With the change of the political executive at the national level in 1991, the present Prime Minister accorded very high priority to the PDS and for quite some time himself looked after the Ministry. It was felt that the really vulnerable areas and people were not getting the desired benefits of PDS due to their disadvantageous geographic location, weak PDS infrastructure and low purchasing power. It was, therefore, decided that PDS should be reoriented for ensuring effective reach to the remotest and the most disadvantaged areas of the country which also had the concentration of poor. Accordingly, around 1750 blocks, composed of tribal, hilly, drought prone and 'de-certified areas, were identified and included in crash programme designated "Revamped PDS" or for short "RPDS". The plan of action included:

- i) A number of new FPS to be opened so that physical access of beneficiaries is improved;
  - ii) Special campaign to be mounted by the state governments to cancel the bogus entitlement cards and to issue new cards to households found to be without them;
  - iii) To progressively bring more and more FPS under the system of FPS doorstep delivery of PDS commodities;
  - iv) Set up vigilance committees of local people with substantial representation of women for each FPS at the village level and also at higher levels;
  - v) Improve the supply chain by constructing or hiring small intermediary godowns;
- and
- vi) Introduce additional commodities through FPS, in these areas.

"An analysis of the implementation of RPDS has shown that during 1992-93, per capita allocation in RPDS areas was higher than other areas and whereas off take (actual distribution) against allocation was only 73 per cent in other areas it was 91% in RPDS areas. States were also moving towards the norm of 20 kg./family/month. The positive trend that emerges from the analysis is that the PDS, which was predominantly urban till the mid 1980s has now been effectively targeted for the traditionally deficit areas covered by RPDS." (Min. of Civil Supplies etc., 1993).

### **Targeting PDS to only Poor Households**

Poverty and associated hunger is a curse and every civilized society endeavors to alleviate extreme manifestations of poverty in their own way. Every country tries to do it-be it an economic giant and torch-bearer of the free markets like USA or a small happy go lucky Jamaica. The underlying policy approach is, however, more or less same and is basically built on 'providing direct assistance to poor households' so that their access to essentials of life like food is improved. The policy could be implemented through an income transfer mechanism like Food Stamps or cash

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doles (as in USA etc.) or a dual price system (e.g., through a PDS as in India etc.). These mechanisms or their variations, cost money and this have to come from the food subsidy budgets of the country. In India, a country of around 900 million people, of which around one third lived in poverty as per 1986-87 estimates, any programme seeking to achieve such a goal will require vast sums of subsidy and it, therefore, becomes imperative that it is utilized in the most cost effective manner so that it helps poor households to attain adequate levels of food security in the true sense. An important question that arises is whether, in the present scenario, when availability of subsidy is greatly constrained by overall fiscal deficit, can we continue to fritter away whatever amount of food subsidy we can mobilize? Since we simply cannot do this, we just cannot continue with a PDS which consumes none-too-small Rs 30000 million subsidies annually, but allows it to be available to anybody who wishes to draw on it, irrespective of whether he is poor or rich. Besides, the inherent weakness of a universal PDS, as organized now, allows quite a bit of diversion and leakage. Part of the subsidy is, therefore, going to the non-poor and even to the FPS dealers, handling contractors and some state functionaries involved in unscrupulous siphoning off and replacement of commodities. Such wastage of this precious and limited subsidy cannot be allowed any longer, and therefore, there is no alternative but to direct the subsidy to the poor and nobody else. Once this is accepted, the mechanism for achieving such focus can be chosen, depending on the situation prevailing in the country. We will also have to decide whether to create an altogether new mechanism or build upon the four decades old foundation provided by the PDS. It will also be necessary to ensure that the size of the population to be covered should be such that they all can be effectively accommodated under the newly created safety net, the largeness of the net being limited by the physical (government stocks of foodgrains) and financial (amount available for food subsidy) resources of the country. The present PDS can hardly be described as a safety net. Each and every Indian and also some ghost card holders, presently constitute the unorganized crowd that jostles under the ungainly net, nobody knowing who is able to receive the shelter under it or who, requiring such shelter badly, is being kept out or pushed out. As explained earlier, in this vast country, with millions of poor, we cannot dispense with the net altogether; there is therefore, no option but to mend the net, erect it afresh with only the needy households under it.

## **Data Analysis and Interpretation**

### **Production, Yield**

The trend in the area, production, yield and irrigation coverage under foodgrains during 1992-93 to 2013-14 is described in Table 1. During 1992-93, 102.09 million hectares were covered under foodgrain. The total foodgrain production achieved in 1992-93 was 59.2 million tonnes with a per hectare yield of 580 kilograms/hectare. Between 1992-93 and 2013-14 only 19.28 million hectares were added to the existing area under foodgrain cultivation. However, due to the impact of green revolution and the use of modern agro services, the total production increased from 59.20 million tonnes in 1992-93 to 218.20 million tonnes in 2013-14 and yield increased from 580 kilograms/hectare to 1798 kilograms/hectare in the intervening period. While 18.1 % area under foodgrains had assured irrigation in 1992-93, the irrigation coverage increased to 46.8% by 2013-14. Table 1 also indicates that since 2007-08, the area under foodgrain has remained more or less stagnant with a relatively stagnated yield rate.

The rate of growth in areas under rice cultivation was 0.7% during the period 1990-91 to 1999-00. The area under wheat registered a growth rate of 1.7% while pulses marked a negative growth rate in areas by -0.6% during the same period (Table 2). An analysis of the production and yield growth of food crops under irrigation between 1990-91 to 1999-00 and 2000-01 to 2011-12 indicates that the rice production between 1990-91 and 1999-00 has recorded an annual growth of

2% vis-à-vis a growth rate of 1.9% between 2000-01 and 2011-12. The rate of growth of production of wheat and pulses from 1990-91 to 1999-00 to 2000-01 to 2011-12 was 3.6% and 1.4%, respectively, and -0.6% and 3.4%, respectively. A comparison of the growth registered in the area under major crops, their yield and production and the growth in the area during 1990-91 to 1999-00 and 2000-01 to 2011-12 paints a grim picture in maintaining the soaring staple food demand in the backdrop of the country's burgeoning population growth. In the absence of a continuous follow up to the green revolution of 1960's and the dearth of a suitable technological breakthrough in Indian agriculture in the post-green revolution era, there has been a continuous decline in the factor productivity of Indian agriculture. Annual rate of growth in GDP in agricultural and allied production reduced from 4.9% in 2011-12 to 1.6% in 2012-13. The Central Statistical Organization (CSO) had estimated agricultural growth rate at an annual rate of 0.2% during 2013-14. The volatility in the growth in the agricultural sector has posed a real challenge in ensuring food security for all.

### **Availability and Price Movement**

The availability of per day per capita foodgrains since independence is indicated in Table 3. The per capita availability of foodgrains was estimated to be 384.5 grams in 1992-93. The net per capita availability witnessed an upward trend till 2003-04. Thereafter, the trend did not have a specific pattern. One can see a fluctuation in the per capita availability of foodgrains since 2003-04 till 2012-13. During 2012-13, the per capita foodgrain availability was 436 grams which was 30.1 grams less than that of in 2003-04. The per capita availability of cereals went down from 458.7 grams per day during 2006-07 to 374.6 grams during 2012-13. However, the per capita per day availability of pulses increased from 35.4 grams during 2006-07 to 41.8 grams during 2012-13. The per capita per day availability of pulses has reduced drastically by 29.5% from 59.1 grams during 1992-93 to 41.8 grams during 2012-13.

The pattern in the availability of foodgrains (Table 3) indicates that the six decades of economic planning has not been successful in ensuring sustainable food grain availability either through its production and pricing policy or through its initiatives launched towards fair distribution of foodgrains to the vulnerable poor in the country. The affordability dimension of food security is influenced by the price movement of foodgrains in the country. The food inflation based on Wholesale Price Index (WPI) at 1996-97 prices during 1997-98 to 2013-14 indicates that the growth in the net availability of the foodgrains have not been able to influence the demand for the foodgrains as the same foodgrains over the years have become unaffordable (Table 4). This upward price movement in foodgrains will pose a serious challenge to the food security in India.

### **PDS Supplies and Off-take**

The PDS is the main plank of India's food management initiatives. The food management aims at procuring foodgrains from farmers at remunerative prices, distributing foodgrains to consumers, particularly, the poor and the vulnerable sections of society, at affordable prices and maintaining food buffers for food security and price stability. National Sample Survey on PDS and other sources of Household Consumption 2010-11 has indicated that at the all India level 81% of rural households and 67% of urban households have held ration cards. An analysis of the percentage distribution of households by ration card in 17 major states of India (Table 5) highlights that Below Poverty Line (BPL) cards were held by 26.5% of rural households and 10.5% of urban households. Antyodaya card holders (the ultra-poor) formed less than 3% of rural households and less than 1% of urban households. Poverty and food and nutrition security are intricately linked. Recently, Government of India (GOI)'s two Expert Committees (Saxena Committee of the Ministry of Rural Development and the Tendulkar Committee of Planning Commission) have examined the



existing poverty figures and their estimation methodology had recommended revision of existing poverty figures upwards. Thus, if the recommendations of these committees are accepted, then there will be an automatic expansion in the coverage of the PDS and other Government schemes where beneficiaries are decided on BPL basis. Further, the National Advisory Council has suggested promulgation of a National Food Security Act (NFSA) wherein legal entitlement to subsidized foodgrains to 75% of the country's population covering 90% in rural areas and 50% on urban areas would be guaranteed.

The prime instruments used in the PDS are the Minimum Support Price (MSP) and Central Issue Price (CIP). Food Corporation of India (FCI) carries out the procurement, distribution and storage of foodgrains. While the procurement of foodgrains is open-ended, its distribution is regulated by the scale of allocation and its off-take by the consumers. The off-take of foodgrains is primarily under the Targeted Public Distribution System (TPDS) and for other welfare schemes of the GOI, Antyodaya Anna Yojana (AAY), Mid-Day Meal Scheme (MDMS), Wheat Based Nutrition Programme, Welfare programmes for SC/ST/OBC institutions, Annapurna Scheme, Food for Work Programme, Village Grain Bank scheme, etc. TPDS draws the major share of foodgrain for distribution in the country. The off-take of foodgrains under the TPDS has gone up from 29.7 million tonnes in 2008-09 to 34.8 million tonnes in 2012-13. However, the off-take has not been commensurate with the allocation made for TPDS (Table 6).

The slump in the demand for PDS foodgrains vis-à-vis allocation may be due to the abnormal increase in the procurement price and the consequent upward revisions in the central issue prices. The upward revision of issue price has reduced the difference between the issue price and open market price. Moreover, by paying issue price, the consumer will have to accept whatever the quality of wheat and rice sold at fair price shops of PDS. But in the open market he has the leverage to decide his purchase depending on the quality of the foodgrains in the open market sales. The rise in the support price has also an important impact on the food procurement by FCI as it had to buy more foodgrains than it could manage since the off take from PDS has declined due to upward revision of the issue price. This has also led to the increment of buffer stocks much beyond the recommended stock in a given year. The uneconomical rise in the stock of foodgrains with FCI has given rise to the overall economic cost of foodgrains to FCI and has had an adverse impact on the efficacy of the food based safety nets in India.

### **Findings and Suggestions**

1. One of the most critical issues before the policy maker is the decline in the aggregate areas under operational holdings from 165.51 million hectares in 1990-91 to 159.90 million hectares in 2010-11, a net decline of 5.61 million hectares. This trend, if not arrested, may adversely affect food, employment, and income securities, as per hectare productivity of major crops have either decelerated or stagnated during the last one decade and scope of bringing more land under cultivation is limited. Therefore, a suitable national policy is required in context of using agricultural land for non-agricultural purposes.
  2. Improve the productivity and profitability in agriculture through enhancing public investment in agricultural infrastructure, R&D, extension, irrigation and water management, market, post-harvest technology, storage and distribution.
  3. About 55% of consumers of the country draw their livelihood directly from agriculture as cultivators and agricultural labour. Moreover, rural non-farm workers, such as rural artisans, rural service providers, etc., also depend on the growth in farmers' income. Furthermore, 82% of total farmers' households are having size of land holdings less than two hectares and many of them are net buyers of some essential agricultural commodities.
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Increase in agricultural productivity would improve their livelihood and consequently affordability of food items.

4. Develop such a supply chain system for agricultural products that benefits both farmers and consumers. High market prices of agricultural commodities paid by the consumer do not always benefit the farmers due to inefficient supply chain system. Therefore, effective linkage between farmers groups and consumers groups need to be established to eliminate the multi layers of intermediaries between farmers and consumers.
5. Due to inadequate post-harvest infrastructure, about 10% of the foodgrain produce (about 20 million tonnes) go on waste every year. Saving of 20 million tonnes of foodgrains through efficient supply chain management and creating better storage and distribution infrastructure can help to release about 6 million hectares of land under foodgrain cultivation for other remunerative crops or can produce additional 20 million tonnes of foodgrain.
6. Groundwater recharge and rainwater harvesting must be given priority in the groundwater depleting regions. Farmers should be provided subsidies to build tank/pond in their land holdings for aquifer recharging. This is more desirable in the rain-fed and dry regions that constitute about three-fifth of total cultivated area.
7. The main cause of farmers' problem is that the income earn from farming is not adequate to meet out their consumption needs mainly due to adverse terms of trade, low yield and high dependence of rural workforce on agriculture. These issues should be properly tackled through suitable policy actions.
8. Considering the enhancement in the benchmarked poverty line, variation in the availability of foodgrains, restricted inter-State movement of foodgrains and price volatility, productivity growth and a sound price management in the food sector have become necessary. The right to food and food security will require an enhancement in procurement and distribution of foodgrains.
9. The shift in the consumption pattern of the consumers from cereals to non-cereals needs to be examined to identify the issues and challenges in the demand side factors.

## Conclusion

Food security is not less than the national security. It needs to be given top priority in the national planning. We cannot depend on imports for maintaining food security and mitigating food inflation. The Government needs to think of conducting a continuous and thorough research to track the demand and supply of foodgrains traded in the market. This would ensure future forecast on food prices and would facilitate the Government in policy making. Universalization of foodgrain distribution needs an alternative clean and transparent PDS mechanism other than through the FCI at the national level and Fair Price Shops at the grass-root level. This calls for framing suitable operational policies for FCI to rationalize its buffer stocks, gradually unload excessive inventory of cereals and strengthening of the existing PDS by bringing in transparency and accountability at the ultimate distribution point. This initiative will improve supply situation and prevent price rise. Thus, while NFSA addresses the supply driven distribution side of the foodgrains, the country needs to devise an appropriate strategy of food management keeping in view the overall demand and supply situation.

## Notes

### Indian Agri-Business: Facts

1. Varied agro climatic zones:
  2. 2<sup>nd</sup> largest arable land (184 million hectares) in the world
  3. Largest irrigated land (55 million hectares) in the world
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4. Largest producer of wheat (72 million tonnes), accounting for nearly 15% of global wheat production
5. Largest producer of pulses (15 million tonnes), accounting for nearly 21% of global pulse production
6. Largest producer of milk (90 million tonnes)
7. Largest producer of tea, accounting for nearly 28% of global tea production
8. Largest producer and exporter of spices
9. 2<sup>nd</sup> largest producer of rice (92 million tonnes), accounting for nearly 22% of global rice production
10. Largest producer of world's best basmati rice
11. 2<sup>nd</sup> largest producer of fruits (50 million tonnes), and vegetables (100 million tonnes)
12. 2<sup>nd</sup> largest producer of sugarcane (296 million tonnes), accounting for nearly 21% of global sugarcane production
13. 3<sup>rd</sup> largest producer of coarse grains (31 million tonnes), including maize, accounting for nearly 4% of the global coarse grain production
14. 3<sup>rd</sup> largest producer of edible oilseeds (25 million tonnes), accounting for nearly 7% of the global oilseed production
15. Largest livestock population
16. India produces 6.3 million tonnes of fish (3<sup>rd</sup> largest in the world)
17. Meat production is estimated at 2.3 million tones

### **Major challenges before Indian agriculture:**

1. Stagnation in Indian agriculture
2. Small and marginal land holdings
3. Hunger and poverty
4. Food wastage
5. Climate Change
6. Little accountability in investment in agriculture research and education
7. Dry land agriculture
8. Agro-Infrastructure

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**Appendix-List of Tables**
**Table 1:** Area, Production, Yield and Irrigation Coverage under Food grains in India

Year	Area(Million Hectares)	Production (Million Tonnes)	Yield (Kg/Hectare)	%Coverage under Irrigation
1	2	3	4	5
1992-93	102.09	59.20	580	18.1
2002-03	117.84	80.15	680	19.8
2003-04	119.28	97.03	813	25.4
2004-05	125.10	129.52	1035	30.8
2005-06	123.15	179.48	1457	37.4
2006-07	113.86	174.77	1535	42.8
2007-08	123.45	213.19	1727	42.2
2008-09	120.00	198.36	1652	44.2
2009-10	121.60	208.60	1715	45.5
2010-11	123.71	217.28	1756	46.3
2011-12	124.07	230.78	1860	46.8
2012-13	122.83	234.47	1909	NA
2013-14	121.37	218.20	1798	NA

NA: Not Available

**Table 2:** Rate of Growth of Area, Production and Yield for Foodgrains during 1990-91 and 1999-00 and 2000-01 and 2011-12 (in percent)

Crops	1990-91 to 1999-00			2000-01 to 2011-12		
	Area	Production	Yield	Area	Production	Yield
1	2	3	4	5	6	7
Rice	0.7	2.0	1.3	-0.1	1.9	2.0
Wheat	1.7	3.6	1.8	1.3	1.4	0.1
Pulses	-0.6	0.6	0.9	1.9	3.4	1.7

**Table 3:** Population and Per capita per day net availability of foodgrains

Year	Population (in million)	Per capita net availability per day (in grams)		
		Cereals	Pulses	Total
1	2	3	4	5
1992-93	369.2	325.4	59.1	384.5
2002-03	452.2	398.9	62.2	460.9
2003-04	563.9	419.1	47.0	466.1
2004-05	703.8	415.6	39.2	454.8
2005-06	867.8	434.5	34.3	468.8
2006-07	1050.6	458.7	35.4	494.1
2007-08	1068.2	408.5	29.1	437.6
2008-09	1085.6	426.9	35.8	462.7
2009-10	1102.8	390.9	31.5	422.4
2010-11	1119.8	412.8	32.5	445.3
2011-12	1136.5	407.4	35.5	442.8
2012-13	1153.1	374.6	41.8	436.0

**Table 4:** Trend in WPI of Foodgrains at 1996-97 base prices (1997-98 to 2013-14)

Year	All Commodities (100.00)	Food Articles (15.40)	Food Grains (5.01)	Cereals (4.40)	Pulses (0.60)
1	2	3	4	5	6
1997-98	112.6	112.8	114.7	113.6	122.2
1999-00	127.2	137.3	137.6	135.7	151.3
2001-02	140.7	159.4	152.0	150.9	160.1
2003-04	155.7	170.5	173.8	173.0	179.6
2005-06	166.8	179.2	174.3	173.5	180.6
2007-08	187.3	186.3	177.5	177.9	174.4
2009-10	206.2	210.5	206.0	199.4	254.2
2011-12	233.9	239.8	234.1	230.5	259.8
2013-14	242.9	275.1	270.6	261.9	333.8

Note: Figures in the parentheses are respective weights.

**Table 5:** Percentage Distribution of Households by Ration Card Type in Major States: 2010-11 (in percent).

State	Rural		Urban	
	Antyodaya	BPL	Antyodaya	BPL
1	2	3	4	5
Andhra Pradesh	2.8	54.0	1.5	26.6
Assam	0.6	12.0	0.2	3.2
Bihar	2.3	15.0	0.8	4.7
Chhattisgarh	4.4	35.0	2.1	15.2
Gujarat	0.8	36.0	0.1	8.4
Haryana	2.6	16.0	1.5	9.9
Jharkhand	3.0	23.0	0.8	7.5
Karnataka	9.6	42.0	2.0	14.4
Kerala	1.8	28.0	0.9	19.8
Madhya Pradesh	3.3	31.0	1.9	12.7
Maharashtra	4.4	31.0	0.3	8.0
Orissa	2.0	42.0	1.3	11.8
Punjab	0.1	12.0	0.0	3.9
Rajasthan	2.8	16.0	0.6	2.4
Tamil Nadu	1.5	19.0	0.6	12.8
Uttar Pradesh	2.8	14.0	0.7	7.2
West Bengal	3.2	27.0	0.8	8.8
India	2.9	26.5	0.8	10.5

**Table 6:** Trend in the PDS Off-take of Wheat and Rice vis-à-vis Allotment from FCI (in percent)

Year	Wheat				Rice			
	PDS	AAY	MDMS	Annapurna	TPDS	AAY	MDMS	Annapurna
1	2	3		5	6	7	8	9
2008-09	29.6	66.5	103.9	88.3	39.4	74.5	81.1	71.1
2009-10	35.0	79.0	76.9	90.9	36.0	70.7	76.8	76.7
2010-11	70.1	90.1	79.9	37.7	36.7	71.7	75.8	67.8
2011-12	89.1	90.7	83.3	39.0	64.1	73.3	77.9	76.1
2012-13	67.4	66.7	91.4	40.3	25.3	68.8	73.6	69.6
2013-14	65.3	73.5	91.0	82.4	65.6	64.8	81.2	90.2