Review Paper

Effectiveness of the Public Distribution System: A Critical Review

Abstract

Public Distribution System (PDS) started from 1997 for providing essential commodities like rice, wheat, sugar etc. to a large number of people through a network of 5.35 lakh Fair Price Shops (FPS) on a recurring basis at a subsidized price to boost food and nutritional security in India. Whether the PDS is effective to reach targeted people is under serious concern. The problem arises as supply exceeds demand at Minimum Support Price (MSP) of food grains. Over the last 7 years, the average procurement of food grains (rice and wheat) has been around 25 per cent of production. The rising MSP of foodgrains during the last 7 years which enhances the chance of increased subsidy amount given by government resulting increased quantity of food grains procurement and inflation in input prices at constant Central Issue Prices (CIP). Gulati and Saini (2015) evaluated under various studies- since 1999-2000 to 2011-12 which narrates about rising leakages of food grains from 9 per cent in 1999-2000 to 36 per cent in 2011-12. In terms of absolute quantity of grains pilfered, of the total quantity of 25.91 MMT pilfered, UP stands at the top with almost 4 MMT (15.3%) pilfered from PDS in 2011-12. There are 39.6 per cent poor having ration cards and 60.4 per cent poor having no cards. There are 26.3 per cent non-poor having ration cards causing inclusion error. The exclusion error is severe as a Type-II error causing 70.5 per cent total in India. There are many loopholes in PDS, leading to ineffectiveness and inefficiency in achieving its objectives. It needs reforms like the transparent selection of beneficiaries, universalization, end to end computerization, more commodities to be included, an effective grievance redressal agency, ADHAAR based PDS, the inclusion of innovative schemes like food coupon, smart card etc. More or less, the innovative mechanism in PDS has to be assessed before implementation to enhance effectiveness and check further error.

Keywords: public distribution system, fair price shops, minimum support price, ADHAAR

1. Introduction:

The journey of food grain production from subsistence to surplus has stabilised Indian agriculture as a masterstroke of the Green revolution in the Sixties. The increased food grain production enhanced the likelihood of food security as meeting the rising population demand in the country.The statistics say that from 51 Million tons in the 1950s to 276 Mt of food grains (rice=110 Mt, wheat=98 Mt) in 2017 is a great achievement for Indian agriculture and food security as concerned. Annual Report on Agriculture 2017-18). But at the same time, the alarming situation of hunger in the country creates doubt on the historical food grain production. India occupies the 100th rank in the Global Hunger Index whose score is highest (35-50) under alarming or extreme danger condition as shifting from 67th in 2010. The downgrade index creates the paradox of hunger amidst plenty. As per National Family Health Survey (2015-16), every third woman in India was undernourished (35.5 % with low Body

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Mass Index) and every second woman (15-49 years) was anaemic (55.3%). Over 40% under three years of age are malnourished. About 38 per cent of the children under five are affected by stunting. 70% of children between 6-59 months are anaemic. India accounted for almost 43 %, underweight children. 50% of pregnant women are anaemic. 80% of the rural population and 64% of urban households are having per capita calorie consumption below adequate levels.

1.1 Public Distribution System: Distribution of essential commodities to a large number of people through a network of Fair Price Shops (FPS) on a recurring basis at a subsidized price. Essential commodities are Wheat, Rice, Sugar and Kerosene. The main instrument of the Government's economic policy is ensuring availability and accessibility of food grainsand reasonable and affordable prices. Also, it acts as attaining the food security for the poor and stabilizing the market prices and curb inflationary trends - open Market Sale for domestic consumption. It serves as a safety net for 330 million poor who are nutritionally at risk. Distribution occurs through various welfare programmesas per allotment made by the Government of India with a network of 5.35 lakh Fair Price Shops (FPS).

2. Decentralized Procurement Scheme (1997):

The designated states procure store and issue food grains under the TPDS and welfare schemes of the GoI. It covers more farmers under MSP operations, improving the efficiency of the PDS, providing food grains varieties suited to local tastes, and reducing transportation costs. Procurement is under open-ended commitments where FCI is obligated to procure all the grain that the farmer is willing to sell as long as the grain meets the Fair Average Quality. But the problem arises as Supply exceeds demand at MSP. Minimum Support Prices (MSP) for paddy and wheat in excess of the levels prescribed by the CACP which leads to additional procurement more than needed.

The Production of rice has been increased from 96 Mt in 2010-11 to 109 Mt in 2017. The procurement of rice has been increased steadily to 38.7 Mt which is around 25% of its production. Similarly, wheat production has been increased from 87 Mt to 98 Mt in 2017 after 7 years period but witnessed fluctuating rise and fall in procurement by the Central and State agencies along with food corporation of India (FCI). Over the last 7 years, the average procurement of food grains (rice and wheat) has been around 25% of production. Procurement has increased steadily from 57million tonnes in 2010-11 to 62million tonnes in 2016-17. It is required to procure nearly 61 million tonnes of food grains consistently every year as per the Commission for Agricultural Costs & Prices (CACP) estimate for the National Food Security Act (NFSA). Procurement of this quantity of food grains might be easier in years when production is high. However, in years of drought and domestic shortfall, India will have to resort to large scale imports of rice and wheat, exerting significant upward pressure on prices. This raises questions regarding the Government’s ability to procure grains without affecting open market prices and adversely impacting the food subsidy bill.

The centre allocates grain to states in accordance with the number of Below Poverty Line (BPL) families fixed by the Planning Commission."Offtake" refers to the amount of

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grain that the states take from the FCI for distribution through the PDS.The offtake (lifting) of grains has increased in relation to the total amount of grains allotted to states over the last 7 years. The percentage of offtake has been increased from 88% in 2011-12 to 96% in 206-17. Percentageof Offtake (Lifting) of Rice and Wheat in TPDS by several categories (BPL, AAY &APL) of people from 2011-12 till 2016-17 shows that a steady increase from 88% to 96% as offtake by all categories. The 100% offtake is seen in all individuals' categories in 2016-17 which is a good sign of achieving the target of TPDS. The rising MSP of foodgrains during the last 7 years which enhances the chance of increased subsidy amount given by Government. As per rising food subsidy is concerned, there are three factors contributing are recorded procurements in recent years, Increasing costs of buying (at MSP) and handling food grains and Stagnant CIP. By the simple calculation (Subsidy=MSP-CIP) along with charges in buffer handling, transportation etc. in the economic cost of grain, the subsidy on food grain is increasing every year. The percentage of subsidy is increasing substantially as 90% for Antyodaya Anna Yojana (AAY). The subsequent growth of subsidy will be driven by two factors as a burden. Since the proportion of the population covered is constant; the number of eligible beneficiaries will increase with the population growth. This will result in an increase in the number of food grains to be procured. Second, the MSP will tend to rise with inflation in input prices; if the issue prices are not revised upward, the subsidy per kg of grains will increase.

As far as the stock of food grains (wheat and rice) in central pool vis-à-vis buffer norms in India is concerned, the actual stock of wheat was equal to the required norm on April 2017 but 1.5 times in January 2018. In the case of rice, the actual stock is 2 times the required norm in April 2017 and 2.5 times in January 2018.There are four dates have been mentioned in 1st January, 1st April, 1st July, 1st October of one year and the estimated quantity of food grains have to be stored as a buffer for future use as per the 2015 Buffer regulation. Excess stocks in any one year will continue to the next unless the cycle is broken by an exceptional event such as a drought. Government Measures to handle problems of mounting stocks are increasing allocations in TPDS and other welfare schemes and private sector encouraged to buy the subsidized grains for export. But the problem still exists as sale prices much lower than FCI's economic costs, resulting in heavy losses for the government. It can be overcome through re-diversion of food grains for sale in domestic markets where the prices were higher.Insufficient and poor quality storage facilities led to rotting of tonnes of stored grains. So storage capacity increase with proper quality measures is the need of the hour to combat buffer stock challenge.

2.1 Food grain loss:

An estimated 61,824 tonnes of foodgrains have been damaged between 2011-12 & 2016-17. In 2016-17 (up to March 1), damage of 8,679 tonnes of foodgrains was reported, with Maharashtra topping the list of states with 7,963 tonnes. (The Ministry of Consumer Affairs, Food & Public Distribution) Various reasons for the damage of food grains, including pest attacks, leakages in godowns, procurement of poor quality stocks, exposure to rains, floods, and negligence on the part of the persons concerned in taking precautionary measures.The government has also issued guidelines for the disposal of damaged food grains. Accordingly,

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the FCI plans to sell from its various depots, damaged food grains (mainly wheat and rice) unfit for human consumption as manure, feed for animals and for industrial purposes. According to an estimate, the wasted grains could have fed 8 lakh poor people under the National Food Security Act for an entire year.

2.2Diversion or leakage refers to the proportion of grain that does not reach beneficiary householdsdue to corruption, illegal sale of PDS grain, transport losses, losses due to spoilage.TPDS suffers from large leakages of food grains during transportation to and from ration shops into the open market as explained by Gulati &Saini (2015) in his working paper on Leakages from PDS. Leakages of PDS grains as evaluated under various studies- Since 1999-2000 to 2011-12 which narrates about rising leakages of food grains from 9% in 1999-2000 to 36% in 2011-12. The wheat leakage is much higher than rice accounts 63% and 47% respectively (Gulati & Saini, 2015).

The grains off-taken by each state gives the total grain supply in the year and the consumption figures give how much is received by the targeted consumer. The excess of what is supplied over what is consumed should reflect the extent of leakage of grain from the system. Our calculations show that in 2011-12, 25.9 MMTs or 46.7 per cent of the off-taken grain leaked from the PDS. In this Manipur and Nagaland accounts ranks top as 98% and 96% respectively whereas Chhattisgarh and Jammu & Kashmir rank least 0% and 2,3% respectively. However, in terms of absolute quantity of grains pilfered, of the total quantity of 25.91 MMT pilfered, UP stands at the top with almost 4 MMT (15.3%) pilfered from PDS in 2011-12, followed by West Bengal (3 MMT; 11.8%), Bihar (2.5 MMT; 9.6%), Maharashtra (2.34 MMT; 9.1%), Rajasthan (2 MMT; 7.6%), Madhya Pradesh (1.51MMT; 5.8%), Assam (1.49MMT; 5.7%) and Karnataka (1.4MMT; 5.4%). These eight states together pilfered more than 70 per cent of total grains pilfered from PDS. This is where the biggest holes are in PDS, and unless they are plugged, there is not much sense in pouring more grains in PDS. The figure gives the relative share of leakages in selected states that account for more than 70 per cent of the total leakages in the country (Dreze, J., &Khera, R. 2015)

As far as the relationship between **poverty and leakage** is concerned, The states with more than 30 per cent of the population below the poverty line, less than 20 per cent of total consumption was met through PDS. So, one can deduce that the major beneficiaries of PDS are people from those states that have a smaller number of poor. In a way, it helps more the better offs than the real poor of the country.In particular, we found that 5 states which are home to close to 60% of India's poor accounted for close to 50% of the total grain leakage in the country in the year 2011-12.

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Table 1
Vulnerable Households and their Extent of Coverage under BPL

Major States	Vulnerable householdnot having either BPL or APL card (%)	Non-vulnerable having a card as a per cent to the vulnerable household without the card
Assam	83.2	10.6
Himachal Pradesh	76.3	22.1
Tamilnadu	76.2	13.9
Uttar Pradesh	75.2	15.6
Bihar	73.6	13.7
Haryana	70.5	24
Rajasthan	69.8	15.7
Jharkhand	68.8	17.6
J & k	68.0	78.1
Uttarakhand	63.1	42
West Bengal	62.3	19.7
Chhattisgarh	57.3	27.1
Madhya Pradesh	56.6	27.1
Kerala	56.0	37.5
Maharashtra	53.0	52.2
Gujarat	49.4	41.7
Orissa	48.4	37.8
Andhra Pradesh	36.7	108.6
Karnataka	33.4	118.4
Other	67.5	9.8
Total	**61.2%**	**29.5**

Source: Motilal and Sahu, 2011 (Based on Consumption Expenditure Survey, NSSO, 2004-05)

The above table depicts that 61.2% of households who are vulnerable, need to be included. The size of vulnerable households who are not covered in the BPL census varies across states between 83.2% and 33.4%. Bureaucratic difficulties are seen as a singular reason for not having a card.

3. Targeting effectiveness:

Criteria adopted for identifying the poor are non- transparent, cumbersome and often non-verifiable (Alkire, S., Roche, J. M., Ballon, P., Foster, J., Santos, M. E., & Seth, S. 2015). There are two types of error that are an error of inclusion (non-poor in the poor category)e.g. Fake ration cards and error of exclusion (poor in the non-poor category). There are 39.6% poor having ration cards and 60.4% poor having no cards. There are 26.3% non-poor having ration cards causing inclusion error. The exclusion error is severe as a Type-II error causing 70.5% total in India. Consequently, many poor households often do not hold either a BPL or

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an AAY card, and, hence, remain deprived of the benefits associated with such cards. As stated by an expert group, most poor are often excluded from the BPL survey list because of their geographical isolation and very marginal position in the social, economic and political spheres. The prevalent view is that the exclusion error is a direct function of weak bargaining power. Since the vulnerable non-poor are relatively less well-off compared to the non-vulnerable – non-poor, the estimated error of inclusion is justifiable.

A singular aim of the TPDS is to provide ration cards to ensure food security for the poor. Hence, the number of households identified as poor and receiving subsidised food can also be expected to decrease over time with a decline in poverty levels. In line with the NSS data, the IHDS data also indicate that the poverty rates in India fell from 38.4 per cent in 2004-05 to 21.3 per cent in 2011-12. Hence, in theory, it is expected that the percentage of households that use AAY, Annapurna, or BPL cards would decrease over time concurrently with the decrease in poverty rates. However, though the poverty rate between the two survey periods decreased by 44.5 per cent, the number of households having an AAY/BPL card increased by 15.2 per cent. *(DMEO Report No. 233, NITI Ayog, GoI, 2016).* It shows, the use of cards by households owning AAY/BPL cards nearly doubled between these periods.

The IHDS I and II surveys suggest that the inclusion errors increased from 28.8 per cent in 2004-05 to 37 per cent in 2011-12. Simultaneously, exclusion errors declined. This trend is both due to more households being issued PDS cards, particularly the expansion of the AAY category, as well as over-identification of the poor under the TPDS in 2011-12, as, despite a decline in poverty rates over this period, the non-poor are still identified as poor by the government.

Using the NSS 2004-05 survey, Jha and Bharat (2012) measure the percolation of food subsidy expenditures to the poor by measuring both targeting leakages (inclusion errors) as well as non-targeting leakages due to excess costs and fraud. Comparing India to the Philippines, which had a universal programme, they find that despite the PDS being a targeted programme in India, only one-third of the total subsidy went to the poor, which is in contrast to the Philippines, where 60 per cent of the subsidy went to the poor. Inclusion errors increased across all regions between 2004-05 and 2011-12. For instance, in the North, inclusion errors increased from 10.9 per cent to 24.5 per cent, and in the South from 49.9 per cent to 59.1 per cent. Exclusion errors, on the other hand, are seen to be decreasing across all regions.

3.1 Purchase- Entitlement ratio(PER) refers to a proportion of full is purchased by BPL households. A low PER could be due to corruption in the system or lack of demand (possibly related to the low quality of PDS grain). The average PDS purchase in the past three months (24 kg/household per month) is at least 84% of the monthly entitlement (28.7 kg/ household per month. PER is recovering except Bihar and Jharkhand where PER is 45% and 71% respectively.

3.2 Delinking MSP from Procurement Price (Possibilities):

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In theory, procurement prices are not the minimum government guaranteed purchase prices. These are prices at which the government is supposed to procure the quantities needed for buffer stock and to meet the grain needs of various intra-year distribution programmes, at its discretion and without any compulsion. In reality, however, these prices are used to purchase virtually whatever quantities the farmers offer for sale. More often than not, the actual stocks exceed the country's storing capacity and thus results in massive damage to procured grains. Saini and Kozicka (2014) had a critical insight on Buffer stocking Policy where they have addressed the issues of delinking MSP. The arbitrary policy stances adopted by various state/UTs have compounded the problem. Governed by the need to incentivise the farmers to produce more grain, various states have been announcing generous bonuses over and above the declared MSPs. This results in crowding out private traders in the state, who find such prices excessive and non-competitive. Private traders in the neighbouring states are also affected as it is inevitable that the food grains would move across state borders to take advantage of the higher procurement prices. There is additional financial and logistics burden as well, as some part of the food grain procured in the state with higher procurement price is likely to go back to the state with lower procurement price eventually through central allocations under PDS. Interestingly, the States like Chhattisgarh, Madhya Pradesh who offer large bonuses over and above MSPs are also the ones with high procurement incidentals. This implies additional drain on the already financially strained procurement machinery of the country. According to the CACP, these bonuses have the effect of distorting the production basket by influencing the "inter-crop" parity.

Table no. 2

Technology-based reforms to TPDS undertaken by some states

Type of Reform	Benefits of reform	States implementing reform
The digitisation of ration cards	• Allows for online entry and verification of beneficiary data along with storing of monthly entitlement of beneficiaries, a number of dependants, offtake of food grains by beneficiaries from FPS, etc.	Andhra Pradesh, Chhattisgarh, Tamil Nadu, Madhya Pradesh, Karnataka, Gujarat, etc.
Computerised allocation to FPS	• Computerises FPS allocation, declaration of stock balance, web-based truck challans, etc. and it also allows for quick and efficient tracking of transactions.	Chhattisgarh, Delhi, Madhya Pradesh, Tamil Nadu, etc.
The issue of smart cards in place of ration cards	• Secure electronic devices used to store beneficiary data • Stores data such as name, address, biometrics, BPL/APL category and monthly entitlement of beneficiaries and family members • Prevents counterfeiting	Haryana, Andhra Pradesh, Orissa, etc.

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Use of GPS technology	• Use of Global Positioning System (GPS) technology to track the movement of trucks carrying food grains from state depots to FPS	Chhattisgarh, Tamil Nadu
SMS based monitoring	• Allows monitoring by citizens so they can register their mobile numbers and send/receive SMS alerts during dispatch and arrival of TPDS commodities	Chhattisgarh, Uttar Pradesh, Tamil Nadu
Use of web-based citizens‟ portal	• Publicises grievance redressal machinery, such as the toll-free number for call centres to register complaints or suggestions	Chhattisgarh

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238 **Source:**Balani, S. (2013). Functioning of the Public Distribution System. *An analytical report*.

239 **Comparison of existing TPDS with the National Food Security Act:**

Provision	**Current TPDS**	**National Food Security Act 2013**
The implication for „right to food‟	Set up under administrative order; no legal backing	Provides statutory backing for the right to food
Coverage	90.2 crore beneficiaries = 18.04 crore families x 5 (average no. of members in a family)	Up to 75% of rural and up to 50% of the urban population, about 81.34 crores beneficiaries32
Categories	AAY, BPL, and APL	AAY, priority, and excluded
Entitlements per category	BPL and AAY: 35 kg/family/month APL: 15 – 35 kg/family/month	Priority: 5 kg/person/month AAY: 35 kg/family/month
Prices of food- grains	AAY: Rs 3/kg for rice, Rs 2/kg for wheat, and Re 1/kg for coarse grains Other categories: differs across states	All categories: Rs 3/kg for rice, Rs 2/kg for wheat, and Re 1/kg for coarse grains
Identification of beneficiaries	Centre: releasesstate-wiseestimatesofthe populationtobecoveredunderTPDS createscriteriaforidentification States: Identify eligible households	Centre: releases state-wise estimates of the population to be covered under the Act States: □□createcriteriaforidentification □□identifyeligiblehouseholds

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Centre-state responsibility	Centre: procurement; state-wise allocation; transport of grains up to state depots; storage States: delivery of grains from state depots to ration shop to the beneficiary	Same as the current system with some additions Centre: provides food security allowance to states to pass on to beneficiaries Centre and states: not responsible for failure to supply food grains during force majeure conditions, e.g., war, flood, drought
Grievance redressal mechanism	State governments responsible for ensuring monitoring; vigilance committees to be set up at state, district, block and ration shop levels	Appoints district grievance redressal officers; establishes State Food Commissions; and vigilance committees at state, district, block and ration shop levels

Source: Balani, S. (2013). Functioning of the Public Distribution System. *An analytical report*.

The reality of the market is that trade takes place between farmers and traders at or around the MSP, with or without procurement by the government. As MSP near or below the Market price and import cheaply are limited, the MSP helps traders more than producers. Schelling point for pulse traders to facilitate implicit collusion at prices below what the market price otherwise would be.

4. Challenges in Delivery Mechanism:

- Card issue (Pakka House (IAY) & kachha house)
- Quantity and Quality Issues: (35 kg/family Vs 5 kg/PHH)
- Measurement issues: (Bora system/Lakka Kanta)
- Timeliness of supply
- Record maintenance
- Seasonality (Don't need PDS grains at the time of harvest)
- Grievances Redressal mechanism
- Discrimination (Nepotism, Casteism, Gender)

5. Alternate Mechanisms:

5.1 Cash Transfer: With direct cash subsidies where a fixed amount will be transferred into people's bank accounts each month shows greater efficiency, cost effectiveness and better delivery. But the problem may still exist as identification of beneficiaries, cash does not guarantee food security, no protection from inflation and fluctuation of market prices of food, adverse impact on agriculture forced government notto procure grain. The government may slowly wash its hands away from its responsibility.

5.2 Universalization: Universalize the PDS by moving away from the current system of dividing households into artificial categories such as APL and BPL. No administrative

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hassles involved in identifying the target groups and ensuring delivery to them. Dhanaraj & Gade (2012) studied that out of 94% rice card holders (entitled for all commodities) use PDS rice in different areas like personal consumption 60-62%, Cattle or poultry feed, resale, lending to others etc.

6. Conclusion:

There are many loopholes in PDS, leading to ineffectiveness and inefficiency in achieving its objectives. Major problem includes- identification of the beneficiaries, high diversion of food grains, stocks of food grains much more than minimum buffer norm, poor infrastructure for storages, subsidy reaching to real beneficiaries are low etc.Need for reform– transparent selection of beneficiaries, end to end computerization , more commodities, an effective grievance redressal agency, leveraging nationwide Aadhar and UIDs, inclusion of innovative schemes like food coupon, smart card etc.

7. Recommendation:

There is a need to develop uniform criteria for selection and transparency in beneficiaries' selection. Elimination of the error in the inclusion and exclusion of beneficiaries can be possible by proper methods of estimation. Linking Demand and Procurement can be useful for preventing loss. Also, there is a dire need for diversification of commodities such as pulses and edible oil in malnutrition prone country. An effective system of transparency, accountability and grievance redressal mechanism is a must in the digital era for food and nutritional security.

8. Abbreviations:

PDS-Public Distribution System
FPS-Fair Price Shops
MSP-Minimum Support Price
CIP-Central Issue Prices
TPDS-Targeted P Public Distribution System
MMT-Million Metric Tonnes
FCI-Food Corporation of India
NFSA-National Food Security Act
CACP-Commission for Agricultural Costs and Prices
BPL-Below Poverty Line
APL-Above Poverty Line
AAY-Antyodaya Anna Yojana

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