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## **India's National Food Security Act 2013: Food Distribution through Revamped Public Distribution System or Food Stamps and Cash Transfers?**

**Seema Bathla<sup>a\*</sup>, Paramita Bhattacharya<sup>b</sup> and Alwin D'Souza<sup>a</sup>**

<sup>a</sup>Jawaharlal Nehru University, New Delhi-110 067

<sup>b</sup>Jadavpur University, Kolkata-700 032, West Bengal

### **Abstract**

This paper has estimated the cost and benefit of procuring and distributing the increased foodgrains required in view of the National Food Security Act, 2013. It has critically appraised the feasibility of reforming the existing public distribution system vis-à-vis adopting food stamps and cash transfers. The latter has been done by evaluating the good practices being introduced under the revamped public distribution system in the selected Indian states and alternative delivery mechanisms being followed in three developing countries, viz. Brazil, Sri Lanka and Jamaica. The analysis has indicated a nine-time increase in the economic cost borne by the Food Corporation of India to ₹1820 per quintal for rice and ₹1424 per quintal for wheat from 1980-81 to 2009-10. The average sales realization is far below this cost, thereby compelling unceasing support by the government. An increase in the foodgrains stock from 56 million tonnes to 78 million tonnes would lead to a considerable jump in the subsidy from ₹638 billion to nearly ₹1000 billion. The benefit to consumers in terms of savings due to subsidized food would be ₹78 per month. The cross country experience has revealed in-kind transfers to be better than cash transfers in terms of enhanced outreach, higher efficiency and food security. In many situations the choice between the two seems to be context-specific. The study has outlined the key considerations that the state governments need to dwell on while deciding to either shift to a better PDS similar to that initiated in a few states in recent years or implement the other system as in Brazil, Sri Lanka and Jamaica.

**Key words:** Foodgrain stocks, economic cost, consumer subsidy, National Food Security Act 2013, Public Distribution System, cash transfers, food stamps

**JEL Classification:** H5, Q1, Q18

### **Introduction**

The National Food Security Act (NFSA) 2013 (also called Right to Food Act) has finally been passed (in September 2013) after being caught in the crossfire between political parties for quite some time. The United Progressive Alliance (UPA) led government was upbeat about the Act as an increase in the scale of food security programme from nearly 20-25 per cent

beneficiary population (35–40 % households) to nearly 63.5 per cent population (50–75% households) is seen as the right step towards eliminating hunger and malnutrition from the country. The Law would bring under its purview 75 per cent of the rural and 50 per cent of the urban population for distribution of grains at subsidized rates. The households belonging to the targeted 'general category' comprising 44 per cent of rural and 22 per cent of urban population, would be entitled to 5 kg of grain per person per month at a rate not exceeding 50 per cent of the Minimum Support

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\* Author for correspondence  
Email: seema.bathla@gmail.com

Price (MSP). The 'priority category' households will constitute at least 46 per cent of rural households and 28 per cent of urban households who will be provided 35 kg (7 kg per person) of rice, wheat and coarse grain (millet) per month at the rate of ₹ 3/kg, ₹ 2/kg and ₹ 1/kg, respectively<sup>1</sup>.

This ambitious legislation has brought to fore several issues and concerns relating to the availability of foodgrains and its optimum level of stock, financial resources required to build storage infrastructure and food subsidy, the identification of 'priority' and 'general' categories of households, the delivery mechanism for making food available to all locations under Public Distribution System (PDS) or otherwise and its absorption for better nourishment and so on. The Indian government was, however confident that the Act is in the right direction in ensuring food security to the poor at large. It earmarked expenditure required to boost additional production of foodgrains up to 70-75 million tonnes and meet the food subsidy bill<sup>2</sup>. As regards food procurement and distribution, it is maintained that the present system under the auspices of the Department of Consumer Affairs and Public Distribution has undoubtedly failed to reach the intended beneficiaries and is plagued with persistent leakages, inclusion and exclusion errors and high food subsidy. Despite these, efforts can be made to improve the storage facilities of Food Corporation of India (FCI) and implement better distribution mechanism.

Among many facets of the Act, the skeptics strongly feel that the FCI has outlived its utility and also an increase in the stock required to distribute to at least 70 per cent of population will impose much higher cost to both the exchequer and the country (Gulati *et al.* 2012; Ganesh Kumar *et al.*, 2007). It is suggested that either the existing public procurement and distribution system be totally reformed or alternatives such as conditional cash transfers and food stamps/vouchers/coupons that may be comparatively less costly and congruent with the objectives laid down in the NFSA, should be opted. While the Indian government is leaning towards in-kind transfers, the modus-operandi of a virtually universal PDS is yet to be enunciated by most of the states. The Government of India has lately constituted a high-level committee (HLC) to study various models of restructuring of the FCI and suggest the best-suited model to improve its operational efficiency and financial management.

This paper is focused on three key issues. First, what is the likely cost and benefit of holding, maintaining and distributing the increased food stock by the FCI? Second, should each state continue with the existing FCI-run-distribution system or replace it with cash transfers and/or food stamps that are presumed to be relatively cost-effective and aptly meet the food security goals as laid down under the Act? Third, what are the key considerations that the states should ensure while deciding to revamp the existing delivery mechanism or implementing alternate options? In this study, the food subsidy has been estimated only from the standpoint of consumer and not the producer. The financial cost and benefit accomplished under the first issue have been calculated for wheat and rice only without delving into their nutritional aspect, which has, of late, emerged as an important issue. Also, the study is not aimed at evaluating the institutional framework under which FCI operates and intervention of the Indian government in the distribution of food by the respective state governments<sup>3</sup>.

### **Economic Cost and Benefit of Foodgrains Procurement and Distribution**

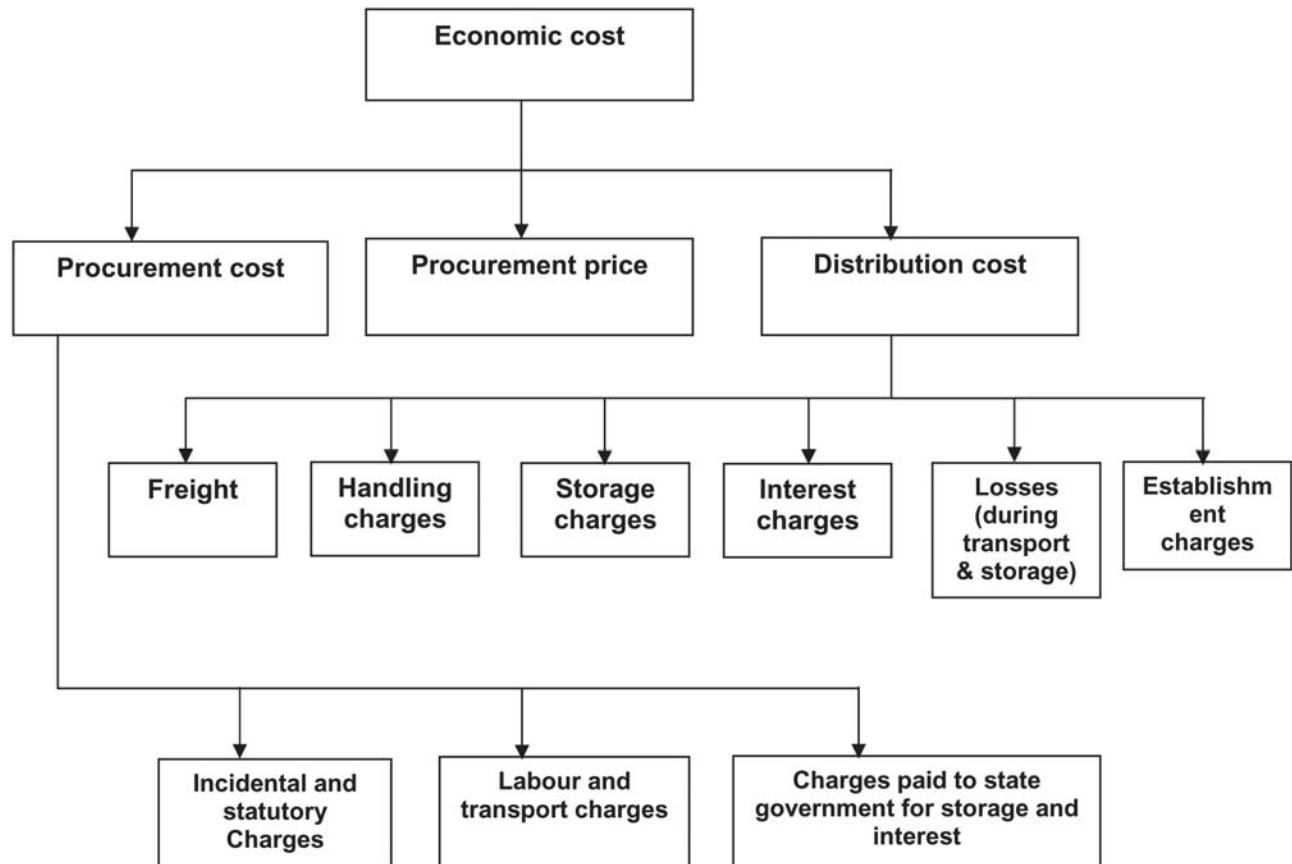
The quantum of foodgrains that is procured by the government aims to uphold (i) a minimum buffer stock for food security and emergencies, (ii) an operational stock for supply under the PDS and welfare schemes, and, (iii) stock for release in the open market to maintain price stability. Initially, it was decided to keep five million tonnes of foodgrain as buffer which was to be revised after every five years. However, actual stocks of wheat and rice generally surpass the minimum buffer norm, either due to lower offtake under PDS or high procurement as a result of higher MSP, as was the case in 2000. The buffer stocks have accelerated from 11.2 Mt in 1980-81 to nearly 60 Mt in 2009-10, which is much above the stipulated norm of 20 Mt. In 2012, the quantum of stocks and offtake was reported to be 56 Mt and 44 Mt, respectively. The accumulated stock is liquidated by selling it below the economic cost, increasing the monthly allocation and lowering the central issue price (CIP). In a situation of shortfalls in procurement, the government allows import to augment domestic supplies, as was done in 2006.

Both Central and state governments are involved in the process of foodgrains procurement and distribution through three agencies, viz. FCI, Central

Warehousing Corporation, and State Warehousing Corporations, each having varying storage capacity. While procurement, storage, allocation and supply of foodgrains are done by the former two, the latter is responsible for identification, issue of ration cards, supervision and distribution of foodgrains through a network of fair price shops. In the early-2000s, the estimated number of Below Poverty Line (BPL)<sup>4</sup> families under the Targeted Public Distribution System (TPDS) (started from 1997) was 652.03 lakh having a monthly allocation of 25 kg per family at 50 per cent of economic cost. The states were allocated foodgrains based on average levels of offtake in the past 10 years. The allocation to the above poverty line (APL) families was 10 kg per month per family, but the CIP was fixed at 100 per cent of the economic cost, indicating that consumer subsidy was only for below poverty line (BPL) families. From 2000, another scheme, *Antyodaya Anna Yojana* (AAY) was implemented for the poorest families estimated to be nearly 10 millions (5% of total population)<sup>5</sup>.

The distribution of foodgrains to each state involves a huge cost that is borne by the Union government. As shown in Figure 1, FCI's economic cost has three main components — procurement cost, procurement price, and distribution cost. The procurement costs (incidentals) are the initial costs incurred during procurement of foodgrains in the markets/yards/centres. These are reported under statutory charges, labour charges, amount paid to the state agencies for establishment, storage and interest for stocks, etc. The FCI buys foodgrains from the farmers at the pre-announced MSP and stocks are released for the beneficiaries at CIP. The distribution costs include freight, handling, storage, interest and transit charges and establishment cost.

Table 1 provides the estimates on economic cost and average sales realization<sup>6</sup> for wheat and rice from 1980-81 to 2009-10 in nominal prices. The economic cost has increased significantly from ₹ 169 per quintal in 1980-81 to ₹ 1424 per quintal in 2009-10 for wheat



**Figure 1. Components of economic cost of foodgrains incurred by the Food Corporation of India**

Source: FCI Annual Reports (various issues)

**Table 1. Economic cost and average sales realization by Food Corporation of India, 1980-81 to 2009-10**

(₹/q)

| Year                  | Wheat            |                           |      |               |                           | Rice             |                           |     |               |                           |
|-----------------------|------------------|---------------------------|------|---------------|---------------------------|------------------|---------------------------|-----|---------------|---------------------------|
|                       | At nominal price |                           | MSP  | At real price |                           | At nominal price |                           | MSP | At real price |                           |
|                       | Economic cost    | Average sales realization |      | Economic cost | Average sales realization | Economic cost    | Average sales realization |     | Economic cost | Average sales realization |
| 1980-81               | 170              | 130                       | 130  | 862           | 658                       | 193              | 159                       | 105 | 981           | 808                       |
| 1981-82               | 204              | 150                       | 142  | 944           | 695                       | 224              | 181                       | 115 | 1038          | 839                       |
| 1982-83               | 220              | 165                       | 151  | 973           | 728                       | 249              | 196                       | 122 | 1102          | 866                       |
| 1983-84               | 234              | 184                       | 152  | 961           | 759                       | 276              | 209                       | 132 | 1134          | 859                       |
| 1984-85               | 239              | 176                       | 157  | 925           | 680                       | 299              | 224                       | 137 | 1155          | 865                       |
| 1985-86               | 246              | 177                       | 162  | 912           | 654                       | 305              | 228                       | 142 | 1129          | 844                       |
| 1986-87               | 273              | 188                       | 166  | 956           | 658                       | 319              | 238                       | 146 | 1115          | 833                       |
| 1987-88               | 275              | 192                       | 173  | 889           | 621                       | 328              | 247                       | 150 | 1059          | 797                       |
| 1988-89               | 296              | 203                       | 183  | 891           | 611                       | 369              | 262                       | 160 | 1113          | 789                       |
| 1989-90               | 306              | 199                       | 215  | 858           | 559                       | 419              | 294                       | 185 | 1172          | 824                       |
| 1990-91               | 359              | 240                       | 225  | 911           | 609                       | 457              | 330                       | 205 | 1162          | 838                       |
| 1991-92               | 391              | 252                       | 280  | 873           | 562                       | 497              | 366                       | 230 | 1110          | 816                       |
| 1992-93               | 504              | 279                       | 330  | 1023          | 567                       | 585              | 442                       | 270 | 1188          | 898                       |
| 1993-94               | 532              | 356                       | 350  | 997           | 667                       | 665              | 500                       | 310 | 1246          | 937                       |
| 1994-95               | 551              | 408                       | 360  | 917           | 679                       | 695              | 601                       | 340 | 1156          | 999                       |
| 1995-96               | 584              | 412                       | 380  | 899           | 635                       | 763              | 613                       | 360 | 1175          | 944                       |
| 1996-97               | 640              | 433                       | 475  | 943           | 638                       | 848              | 611                       | 380 | 1248          | 899                       |
| 1997-98               | 800              | 396                       | 510  | 1129          | 558                       | 940              | 610                       | 415 | 1326          | 862                       |
| 1998-99               | 808              | 388                       | 550  | 1076          | 517                       | 1076             | 601                       | 440 | 1432          | 800                       |
| 1999-00               | 888              | 603                       | 580  | 1144          | 778                       | 1075             | 741                       | 490 | 1385          | 954                       |
| 2000-01               | 858              | 464                       | 610  | 1032          | 558                       | 1180             | 758                       | 510 | 1420          | 912                       |
| 2001-02               | 859              | 519                       | 620  | 998           | 603                       | 1196             | 725                       | 530 | 1388          | 842                       |
| 2002-03               | 915              | 569                       | 620  | 1027          | 638                       | 1184             | 716                       | 530 | 1329          | 804                       |
| 2003-04               | 929              | 580                       | 630  | 989           | 618                       | 1231             | 762                       | 550 | 1311          | 811                       |
| 2004-05               | 1019             | 555                       | 640  | 1019          | 555                       | 1304             | 728                       | 560 | 1304          | 728                       |
| 2005-06               | 1045             | 552                       | 650  | 999           | 528                       | 1337             | 690                       | 570 | 1279          | 661                       |
| 2006-07               | 1214             | 456                       | 750  | 1090          | 409                       | 1412             | 643                       | 580 | 1267          | 577                       |
| 2007-08               | 1371             | 455                       | 1000 | 1176          | 390                       | 1573             | 644                       | 645 | 1349          | 552                       |
| 2008-09               | 1381             | 522                       | 1080 | 1096          | 414                       | 1741             | 593                       | 850 | 1382          | 471                       |
| 2009-10               | 1425             | 585                       | 1100 | 1089          | 448                       | 1820             | 662                       | 950 | 1392          | 506                       |
| Annual rate of growth |                  |                           |      |               |                           |                  |                           |     |               |                           |
| 1980-2009             | 7.7              | 5.5                       | 7.9  | 0.7           | -1.4                      | 8.1              | 5.6                       | 8.0 | 1.0           | -1.2                      |

Source: Computed using data given in the *Annual Reports* of FCI, *Economic Survey*, *Agricultural Statistics at a Glance* and *Agricultural Prices in India*. WPI at base 2004-05 has been used to deflate the series

and from ₹ 193/q to ₹ 1820/q for rice at nominal prices. The same at real prices has shot up from ₹ 862/q to ₹ 1029/q for wheat and from ₹ 980/q to ₹ 1391/q for rice. In contrast, the average sales realization has always been much lower; in 2009-10 these were ₹ 447/q for wheat and ₹ 505/q for rice. On the other hand, per quintal MSP for rice was ₹ 950 and for wheat ₹ 1100

and the wholesale prices for these two grains were ₹ 1532/q and ₹ 1014/q, respectively.

The annual rate of growth in real economic cost is nearly 1 per cent for both wheat and rice compared to a negative growth in sales realization at slightly above 1 per cent from 1980 to 2009. It is important to mention that even if FCI sells grains at the market price, it



requires a huge subsidy to continue its operations as the cost has been found to be twice the wholesale price.

The difference between MSP and issue price of both wheat and rice has also widened, resulting in higher subsidies. For instance, in 1991-92, MSP and CIP fixed for these grains were nearly at the same level — ₹ 280/q for wheat and ₹ 230 to ₹ 370 per quintal for rice. From 1997-98, the CIP was fixed separately for BPL and APL families and these were ₹ 250/q and ₹ 450/q against MSP fixed at ₹ 510/q. In the latter half of 2000, while MSP doubled to ₹ 1000/q, CIP was increased moderately to ₹ 415/q for BPL and to ₹ 610/q for APL families. In the case of rice, MSP was fixed at ₹ 415/q in 1997-98 and ₹ 645/q in 2007-08, whereas the respective CIP was ₹ 350/q for BPL and ₹ 700/q

for APL in families 1997-98 and ₹ 565/q and ₹ 795/q for BPL and APL families, respectively in 2007-08.

It is clear that FCI's average sales realization has been very low compared to the cost incurred, thus making it economically inefficient. As shown in Figure 2a, the percentage of sales realization to economic cost has fallen from nearly 80 per cent to 40 per cent over the years. The per quintal economic cost, increasing at an annual average rate of nearly 10 per cent, is estimated to be 50 per cent higher than MSP in the case of wheat and double for rice. The economic cost as percentage of wholesale price is again very high for both rice and wheat. Only from 2008-09, the wholesale prices have risen in parity with the economic cost, indicating lower levels of subsidy<sup>7</sup>.

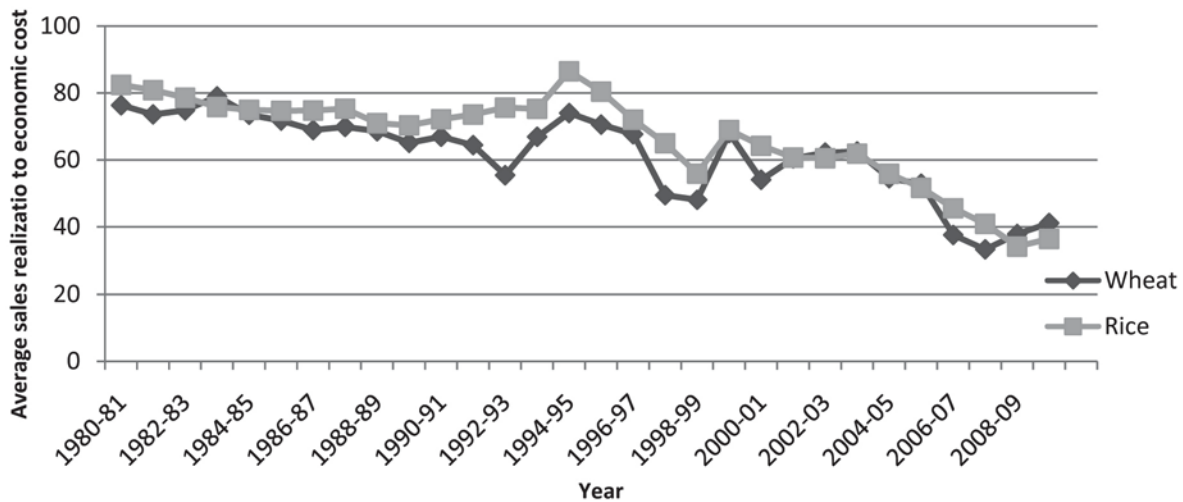


Figure 2a. Average sales realization to economic cost

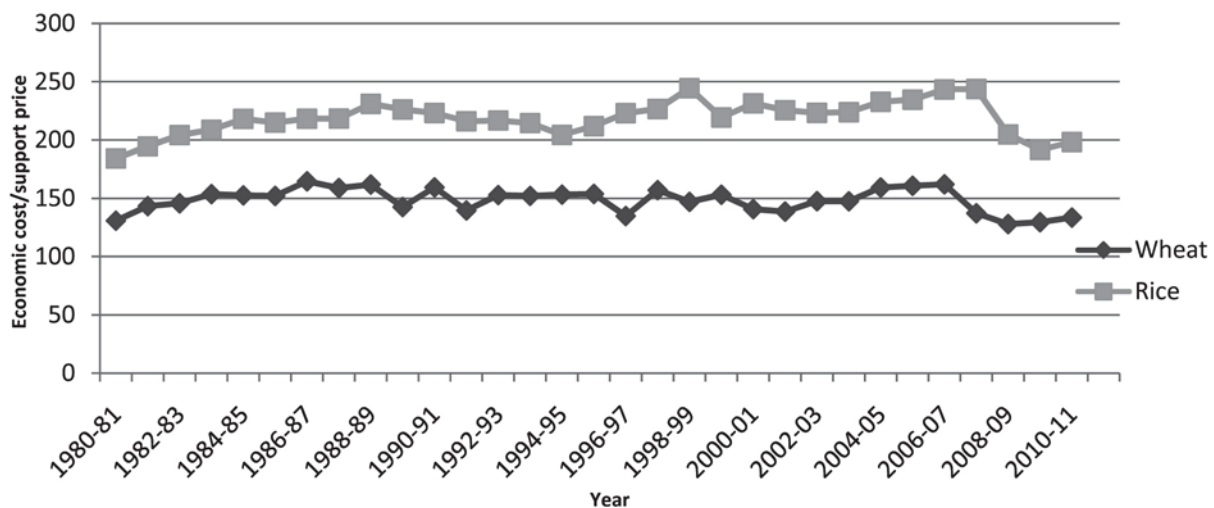
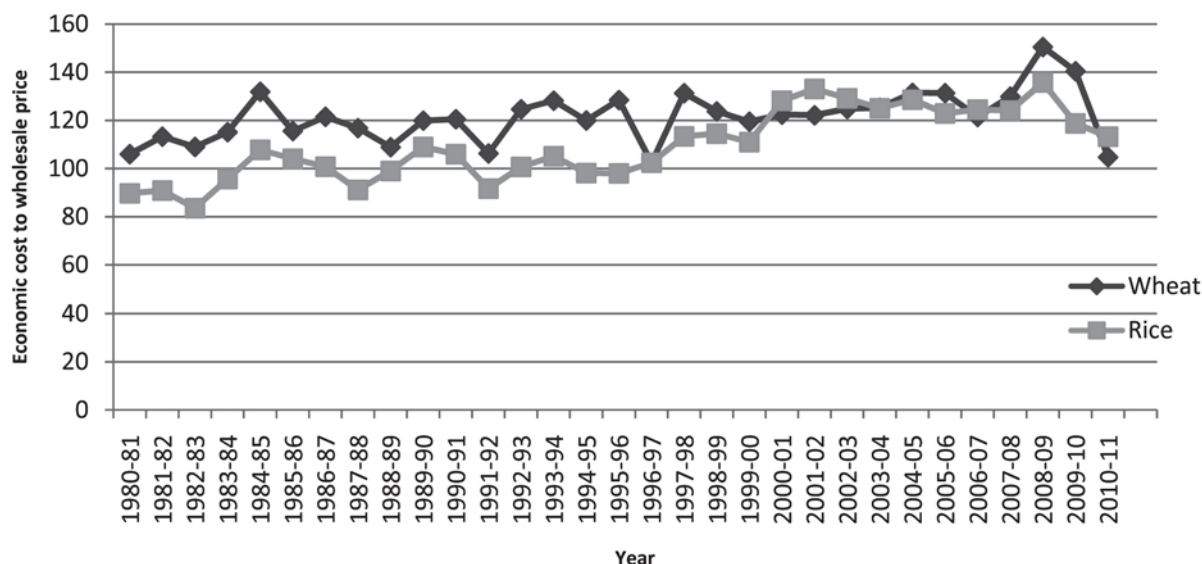


Figure 2b. Economic cost to support price



**Figure 2c. Economic cost to wholesale price**

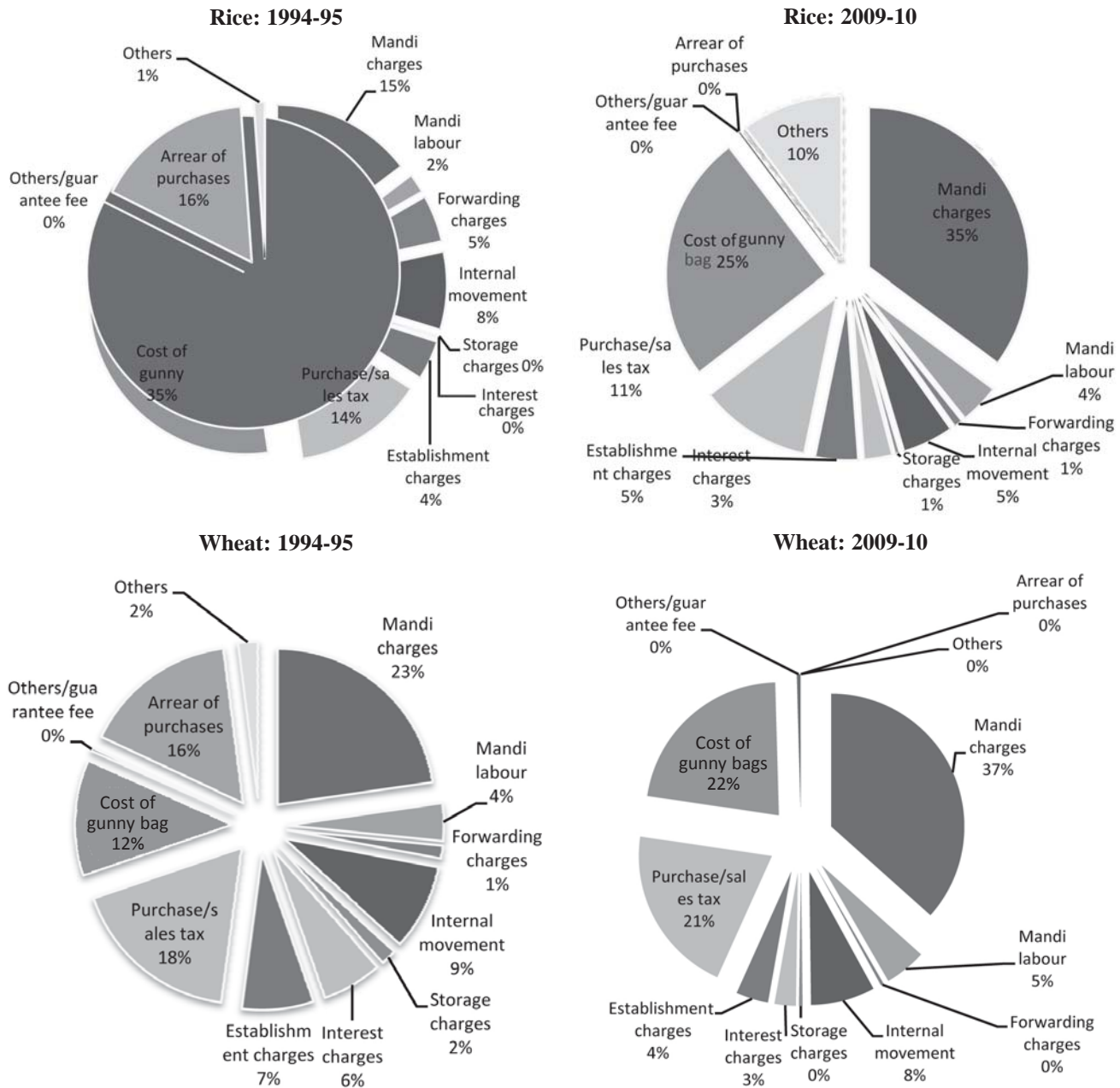
Source: Authors' estimations based on *Annual Reports of FCI and Agricultural Statistics at a Glance*.

A bifurcation of cost into various components has also provided interesting insights. Figure 3 shows item-wise percentage share of procurement and distribution costs, which has altered over the period. Between 1994-95 and 2009-10, the obligatory costs, viz. market charges, sales tax and cost of gunny bags, have accounted for a major share at 15 per cent, 13 per cent and 35 per cent, respectively in both rice and wheat. Similarly, under the distribution costs, freight charges account for 37 per cent, interest charges nearly 14 per cent, handling 22 per cent and storage 13 per cent of total costs (Figure. 4). The handling and storage expenses have increased enormously over the period.

Literature indicates that procurement and distribution costs incurred by FCI have been much higher than the costs borne by the private sector and also if other transport mechanisms are adopted (Sinha *et al.*, 2011; Gulati *et al.*, 2012; IFPRI, 2014). The FCI's per unit storage costs is 30 per cent higher; labour costs are almost four-times higher for rice and seven-times for wheat, interests payments are four-times higher for rice and two and a half-times for wheat due to longer storage periods (Sinha *et al.*, 2011). The freight charges of the FCI are lower due to movement by rail at subsidized rates, but the difference may not be large because carrying goods by rail involves other costs such as local cartage and handling cost, losses and pilferage.

Consequent upon the rising economic cost and low average sales realization, food subsidy has increased manifold from ₹ 24.5 billion in 1990-91 to ₹ 638 billion in 2009-10. In real prices (base 1993-94), it has jumped from ₹34.6 billion to ₹190 billion during this period. This escalation may have also been on account of increase in the procurement price, unchanged issue price to BPL and APL categories of households and ever increasing carrying cost<sup>8</sup>. The share of total food subsidy which was 0.43 per cent of GDP, 0.72 per cent of GDP in agriculture and allied activities and 2.32 per cent of total public expenditure in 1990-91 has increased to 0.92 per cent, 6.22 per cent and 5.71 per cent, respectively in 2009-10. A perceptible reason for an increase from 2002-03 onwards may be building-up of large stocks, widening gap between MSP and CIP, leakages and inefficiencies. A slight improvement in the administrative charges of procurement cost and storage losses by the FCI have been reported during second half of 2000s (Sharma, 2012).

The cost and subsidy are expected to increase manifold once food procurement is augmented for meeting the requirements proposed under the Food Security Act. The official estimates show that 63.5 Mt of foodgrains, which are slightly above the current 54.43 Mt, will be required for distribution. This would be much more if a Universal Public Distribution System (UPDS) is decided and also various welfare schemes



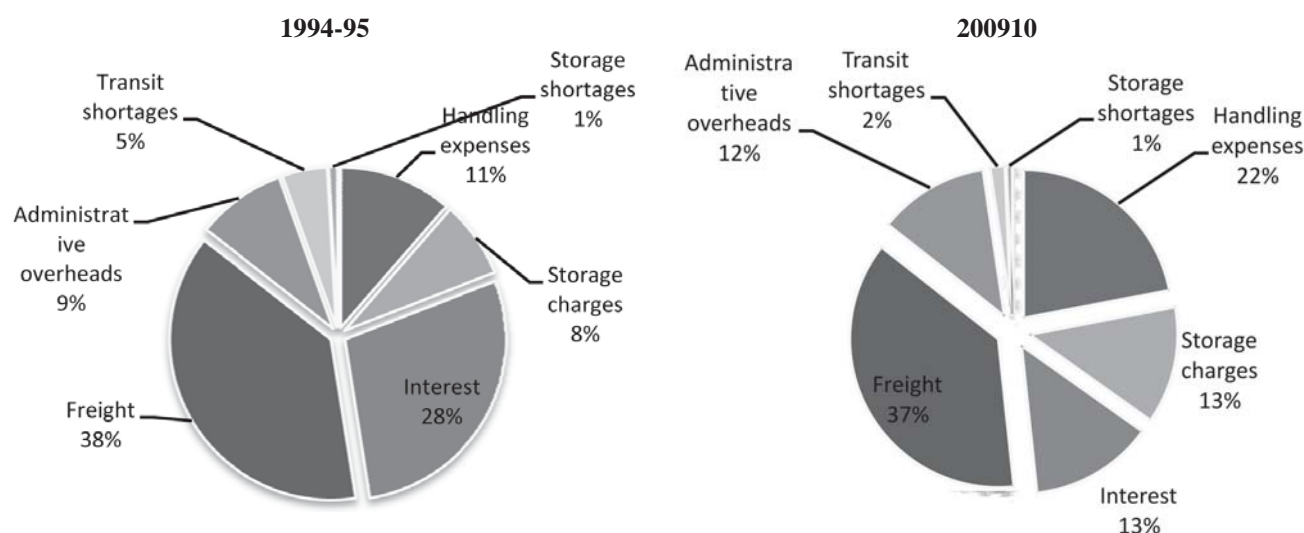
**Figure 3. Item-wise procurement cost of wheat and rice by Food Corporation of India (percentage share)**

*Source:* Authors' estimates based on data obtained from FCI.

are implemented effectively (NAC, 2011). The independent estimates are much higher as indicated in Himanshu and Sen (2011). Based on the NSS household expenditure data and assuming 60 per cent, 70 per cent and 100 per cent of population under the ambit of PDS and total population of 1192 million that will be provided 7 kg grain per capita per month, the study has estimated the total foodgrain requirement to

be 100 Mt under UPDS; 70.1 Mt under TPDS, with 70 per cent population having access to PDS and 60.1 Mt again under TPDS with 60 per cent population having access to PDS. An additional 3-4 Mt foodgrain is required for mid-day meal and other schemes, taken to be 8 Mt. The authors maintained that given the past experience of actual off-take at 42.4 Mt and also successful working of universal public distribution





**Figure 4. Item-wise distribution cost of foodgrains by Food Corporation of India (percentage share)**

Source: Authors' estimates based on data obtained from FCI.

system (UPDS) in Tamil Nadu, a total 73-78 Mt of foodgrains will be sufficient.

Going by these and taking into account the proposed stocks of wheat and rice in the ratio of 60:40, we have estimated the total food subsidy under three alternate scenarios based on excess of economic cost over : (a) average sales realization at ₹ 839/q for wheat and ₹ 1158/q for rice, (b) CIP of wheat and rice at ₹ 200/q and ₹ 300/q, and (c) sales at 50 per cent of MSP of wheat and rice at ₹ 550/q and ₹ 475/q multiplied by the maximum off-take. The estimated subsidy is ₹ 760 billion, ₹ 1052 billion and ₹ 837 billion, respectively under the three scenarios, which is much higher than the subsidy of around ₹ 638 billion in 2009-10. The subsidy estimated by Himanshu and Sen (2011) under the first scenario is ₹ 794 billion.

Despite a high fiscal cost of ensuring food security, consumers at large may benefit from the PDS operations. Taking into account the average retail prices and the CIP of wheat and rice and assuming monthly per capita consumption to be 4 kg for wheat and 3 kg for rice, the total benefit to consumer in terms of saving has been estimated to be ₹ 78 per month per person. This may further rise if wheat and rice are sold at ₹ 3/kg and ₹ 2/kg, respectively. Kundu and Srivastava (2007) have also maintained that PDS has enabled the savings and ensured food security to the poor households. Based on the actual expenditure given in the National Sample Survey (NSS) data, the authors

have found that the average per capita monthly savings to consumers (based on actual retail prices they paid) was ₹ 1.91 in 1993-94 (₹ 2.68 in urban areas and ₹ 1.66 in rural areas) and ₹ 4.97 in 1999-00 (₹ 4.99 in rural areas and ₹ 4.90 in urban areas). The amount saved by the consumer was also compared with the fiscal cost to the government, which shows that it cost the government ₹ 1.90 to effect a saving of ₹ 1 for consumer in 1993-94 and this cost fell to ₹ 1.82 in nominal terms in 1999-00<sup>9</sup>. Presuming that a larger section of the population will be covered under the NFSA, the benefits are likely to be considerably higher. However, much would depend on the level of MSP at which foodgrain is procured and the efficiency of public agencies in maintaining and distributing stocks to the beneficiaries across the country.

Among many, Khera (2011), Dreze (2006), Swaminathan (2003), Jha and Srinivasan (2001) and Gulati *et al.* (2000; 2012) have reiterated that rising food subsidy is a cause for concern, especially when the benefits of distribution have failed to reach the intended beneficiaries. This may signify an inefficient use of public resources which may have higher returns in alternative investments. It is, therefore, important to analyse whether government should target at improvising the existing system by reducing cost, plugging leakages and bringing efficiency or replacing it with food stamps or cash transfers. Furthermore, if the intent is to continue with the PDS, the involvement of local government would be imperative and hence

be evaluated. These issues along with the proposal to involve private sector firms are being deliberated upon by the high level committee now. The HLC has invited firms to make a presentation on 'International Best Practices in Storage and Handling of Foodgrains'.

### **Reforming PDS or Opting for Alternate Systems**

It is suggested that the government should provide either cash or food vouchers (having fixed value) to the BPL families who will redeem them for purchase of foodgrains at any outlet or grocery shop. The latter would be under a contract and be barred from offering anything other than what is specified. The ongoing work on Unique Identification Number, called 'Aadhaar Card' by the Unique Identification Authority of India as the proof of identity and address can be utilized to roll out the programme. Based on a highly secured information technology system, a process can be evolved whereby a BPL family can use food vouchers at any outlet. Some scholars have argued that cash transfers as well food stamps may not be feasible in the remote and inaccessible areas and hence be kept out of the reference. The focus should be on improving the functioning and efficiency of the existing TPDS.

In this light, a few case studies are presented to gauge these options and broad contours that will have to be followed by the respective state governments in the coming months. The first two are from the states of Chhattisgarh and Tamil Nadu where the PDS is running efficiently with the help of information and communication technology (ICT) and women self-help groups (SHGs). This is followed by the experiences of Sri Lanka and Jamaica that use food stamps and of Brazil that has conditional cash transfer scheme<sup>10</sup>.

### **Reforming PDS: The Cases of Chhattisgarh and Tamil Nadu**

The Chhattisgarh government procures paddy on behalf of the Government of India through primary agricultural cooperative societies (PACS), which is then converted to rice by the millers after entering into an agreement. Rice is transferred to Chhattisgarh State Civil Supplies Corporation (CSCSCL) for distribution through fair price shops (FPS). However, since its inception, there have been leakages and loopholes. In order to minimize losses and make the system more

transparent and accountable, the state government resorted to the use of information technology. The use of ICT has checked corruption by improving transparency in all PDS operations and providing all information on web and some vital information through short message service (SMS). A call centre with a toll free number has also been installed to lodge a complaint easily and cheaply. The second most important reform is that the management of FPS is shifted from the private dealers to community based organizations like gram panchayats, SHGs and cooperatives. This has led to better accountability because those running the shops were from the village itself (Puri, 2012). If FPS would have been run by the private traders, then they would not stay in the village and would have little incentive to keep the shop open on all days of the month. Therefore, it would have been difficult to make the traders accountable (IBN Live, 12 January 2011).

The third reform introduced by the Chhattisgarh government is computerization of the foodgrain supply chain from procurement from farmers to its distribution to targeted consumers. A form-based module is filled by the trained local data operators. It contains data related to purchases of paddy, issue to millers, storage centres and the FCI. The payment to farmers is made through cheques and delivery memos for movement of paddy to different places are in computers and special importance is given to on-the-spot generation of cheques to avoid delays (Dhand *et al.*, undated). Since internet connectivity in local centres is a problem, motor cyclists are hired to transfer the data from local centres to block headquarters, where a very small aperture terminal (VSAT) based connectivity is available. Similarly, any new version of the software and delivery order details are downloaded from the server at the block level and carried back to the local procurement centres by the hired motorcyclists. This keeps the data and the software updated.

All these operations are coordinated by the district level offices of State Co-operative Marketing Federation Ltd. (MARKFED) and the CSCSCL. Only ration cards that have a unique number and bar code are used. These features have helped in creating a unified ration card database. Using this database, the actual quantity of PDS commodities to be issued to FPS is calculated and a delivery order is issued. Next, a truck challan that has number, driver's name, and the quantity of commodity dispatched is issued.

Along with this system, in April 2007, the Chhattisgarh government launched *Mukhyamantri Khadyann Sahayata Yojna* (Chief Minister Food Aid Programme) that included BPL families that had been excluded in the 2002 BPL survey but were beneficiaries under the 1991 and 1997 surveys. This made the state move from a targeted to a 'quasi-universal' PDS that covers more than 80 per cent of the rural population. This has greatly helped reduce the exclusion errors. To further reduce the incentives for diversion by FPS officials, the government has increased the commission in rice from ₹ 8/q to ₹ 30/q. To reduce inclusion errors and increase transparency, signs are painted outside every house which include the name of household-head, colour of the ration card and the rate at which rice can be purchased. This innovative policy is to name and shame households that had Antyodaya ration cards but did not belong to the category of the poorest of the poor. On the 7<sup>th</sup> day of each month, a rice festival called the 'chawal utsav' is organized in the presence of government officials where people pick up their monthly stocks, which further enhances transparency in the system (IBN Live, 12 January 2011; Puri, 2012).

Compared to Chhattisgarh, Tamil Nadu follows a universal PDS. Nearly 93 per cent of the FPSs are managed by the co-operative societies. The involvement of women-SHG has ensured safety, transparency, and accessibility in the system along with reduction in transaction costs. The ward member is politically forced to work for SHGs (Paolo and Vandewaalle, 2011). Along with full time FPS, mobile FPS has been started to reach the poor in remote places. This is because the government has issued guidelines that no consumer should travel more than 2 km to buy its quota of essential commodities. The lead societies, viz. consumer cooperatives and marketing cooperatives, procure essential commodities from the civil supplies corporation for delivery to FPS (Nakkiran, 2004).

The co-operatives are classified into lead and link societies. The lead societies are co-operative wholesale stores and co-operative marketing societies that act as wholesalers in procuring the essential commodities from different sources and supply it to the link societies, viz. *Primary Agricultural Cooperative Banks* (PACBs) and *Large Adivasi Multipurpose Cooperative Society* (LAMPs). The Tamil Nadu government has entrusted the running of FPS to the PACBs. The supervisory

committee of FPS is run by democratically elected boards of PACBs. Each family owns a ration card that has two colours: green (eligible for rice and other commodities) and white (eligible for other commodities but not rice). This has reduced both exclusion and inclusion errors. A full-time FPS has a range of 800 to 1000 cards in the Municipal Corporation and municipal areas, while in the other areas, it has a minimum of 500 cards. The Tamil Nadu Civil Supplies Corporation procures and stocks essential commodities in advance in a network of owned and hired buffer and operational godowns down to the block (taluk) level. The FPS in-charge unloads the stocks from taluk level godowns to their respective FPS as per their allocation (Nakkiran, 2004).

At every FPS, notice boards display the name of FPS, working hours, stock position of commodities, cardholders and allotment details, phone numbers of higher officials for complaints, scale of supply and area allotted. Also, one can find the stock in any FPS at any time through a SMS. A supervisory wing under the Registrar of Co-operative Societies is established to inspect PDS.

A striking feature about Tamil Nadu is the high level of awareness among people about their entitlements. A combination of political commitment, awareness and better transparency has ensured that the PDS works as intended, thereby ensuring food security to all. Also, the state is gifted with good infrastructure that connects all villages and greatly reduces transport cost. Literature is scant to exhibit whether the revamped PDS adopted by the governments of Tamil Nadu and Chhattisgarh has actually reduced leakages and is cost-effective in terms of administrative and financial costs incurred. However, evidence indicates less leakages and diversions and also improvement in the offtake (Kishore *et. al.*, 2014). In one of the surveys undertaken, the majority of respondents voted for in-kind transfer over cash transfer due to satisfaction with the ongoing PDS (*The Hindu*, 24 September 2011). Based on the two successful cases, some broad measures that can be initiated to bring efficiency in PDS in other states could be as follows.

- 1) Shift the management of FPS from the private dealers to gram panchayats, SHGs and co-operatives for better accountability. Then, women SHGs should be preferred to manage FPS, as they

are away from the influence of political and social problems and draw support from the villagers.

- 2) All operations from foodgrain supply and distribution to its targeted customers should be computerized for a better transparency at each level.
- 3) Establish a call centre with toll free numbers along with efficient complaint monitoring mechanism to reduce corruption,
- 4) Give special importance for payment of cheques to the farmers on the spot.
- 5) Hire motorcyclists to transfer data from local centres to block headquarters because some regions lack internet connectivity.
- 6) Create database of ration cards through bar codes and a unique number for each ration card. Through this database, the actual amount of commodities can be issued to the FPS. A special tracking mechanism through Global Positioning System enabled phones with a camera can be used in warehouses. Upload data on photos of the truck and date and time of its arrival and quantity taken in the central server for continuous monitoring.
- 7) Increase the commission to FPS owners. Interest free loans should be provided as seed capital to develop FPS.
- 8) Make electronic weighing scales mandatory in all ration shops.
- 9) Conduct verification drives to clear all bogus cards.
- 10) Paint the names of the heads of households availing of the special scheme meant for the poor outside their houses in order to 'name and shame' beneficiaries and reduce inclusion and exclusion errors.
- 11) People should be made aware through electronic and print media.
- 12) Develop infrastructure such as roads which help connect villages and reduce transportation cost.

### **Replacing PDS with Cash Transfers and Food Stamps**

Several researchers have found that the poor tend to consume more food when provided with food rather

than cash (Gentilini, 2007). This is based on studies that revealed that poor tend to have higher comparative marginal propensity to consume food as a result of food transfers than equivalent cash transfers. Fraker (1990) showed that when a dollar of food stamp was increased, food consumption increased from 17 per cent to 47 per cent, as opposed to an increase of 5 to 13 per cent by cash transfers. According to Barrett (2002) food stamps increased household nutrient availability by 2-10 times than similar valued cash transfers. But, it is difficult to show a direct link between food consumption and nutrition as it is more than what meets the eye. According to Sharma (2006), cash transfers trigger higher kilocalories than in-kind transfers because cash allows the poor to diversify their consumption basket. Also, the programme, if made conditional, can be useful in enabling health and educational benefits to the poor at large.

The major difference between cash transfers and in-kind transfers is that in the former, supply response is left in the hands of the individual, whereas the demand is leveraged by the provision of cash. The allotted amount is transferred to targeted population directly through banks or post offices, which can be used to buy commodities that they prefer. This gives them the advantage to diversify their food basket. But with in-kind transfers, food is given directly to the beneficiaries. This isolates the poor from market risk due to unavailability of foodgrains. Also, sometimes private traders delay food deliveries to certain locations as part of speculative hoarding. Therefore, cash provides people with a choice but it also transfers to them the risk of supply failures. Such risk is minimized where markets work well. Food may then be more appropriate where such risk is high (Gentilini, 2007). Since perfect markets do not exist in many developing countries, food transfers or in-kind transfers are considered to be the better options. Besides, implementation of direct cash transfers scheme may require among many things, good financial infrastructure in every village for greater inclusiveness and outreach, such as small bank branches and automated teller machines (ATMs) or post offices, which is a daunting task.

Food stamps act as a direct income transfer mechanism. They are issued to households below a certain income level so that they can buy specified food and non-food items from the authorized shops. It differs



from PDS-FPS because food stamps can be submitted to any private authorized shop owner who can redeem them at banks/post offices for cash. The government is not required to maintain stocks and run fair price shops. Therefore, a considerable amount of monetary resources is saved. But, the disadvantage is that it cannot safeguard poor consumers against short-term price fluctuations even though stamps are inflation-indexed (Suryanarayana, 1995). The purchase requirement condition restricts the neediest because they require paying a minimum token amount to buy the specified items. Last, means test depends on income details, which are normally biased.

A review of conditional cash transfer (CCT) in Brazil and food stamps programme in two developing countries, viz. Sri Lanka and Jamaica was undertaken to explore whether these could be implemented in India. If they do, what are the basic requirements for operationalising?

Brazil replaced four cash transfer programs into a single program called the Bolsa Familia Program (BFP). It supports the formation of human capital at the family level by conditioning transfers on behaviours such as children's school attendance, use of health cards, and other social services. The transfers are made preferentially to women in each family (Lindert *et al.*, 2007). The targeting accuracy is achieved through geographic mechanisms and means-testing under the unified family registry. The amount that is fixed is transferred preferentially to women in each family. The study shows that since the inception of BFP in 2003, its size has increased from 3.8 million families (15.7 million people) to 11.1 million families (46 million people) in 2006. The BFP is perhaps the largest social safety net program in the world. The program has accounted for a significant share (20-25%) of reduction in income inequality and 16 per cent of the fall in extreme poverty apart from significantly impacting health, schooling and infant mortality (Soares *et al.* 2007; Santos *et al.* 2011).

Adaptation of the CCT program requires in place a sound financial infrastructure and continuing efforts towards institutional strengthening, targeting and coverage, monitoring, oversight and controls, and evaluation of program impacts. The authors further maintained that experience in Brazil along with Chile and Mexico suggests that increased attention has to be

given to employment policies and a reversal in the income inequality increasing bias of social security systems.

Compared to Brazil, the Sri Lankan government replaced the general price subsidy scheme with a targeted food stamp scheme. This was done in 1979 to reduce the fiscal deficit without affecting food security of the poor. The general subsidized food distribution system was started in 1942 for items such as rice, wheat, flour, sugar and milk powder with universal accessibility. This led to improved nutrition in the bottom deciles. But, the government had to look for alternatives because this scheme was too expensive. Moreover, the Sri Lankan government had to import almost 50 per cent of its domestic requirement (Suryanarayana, 1995). Devaluation of currency in 1970 further aggravated the problem. Therefore, the government decided to abolish food subsidy in three phases to minimize an adverse public reaction.

The first step was to conduct a means test in 1978. In the means test, households self-reported their income. This was done to target population having monthly income less than ₹ 300. This resulted in only 50 per cent of the population getting the benefit of subsidized food from fair price shops. The second phase was to bring a shift from ration shops to food stamps. In September 1979, households were asked to apply for food stamps through a declaration of income and household composition (Edirisinghe, 1987). Under this scheme, households with income of less than Srilankan Rupee 3600 per year were to be issued stamps worth Srilankan Rupee 15 per month. For each child younger than 8 years, the family would receive stamps worth Srilankan Rupee 25 per month, and if the child was between 8 and 12 years, it would receive Srilankan Rupee 20 worth of food stamps per month. These food stamps could be used to purchase rice, wheat, flour, bread, sugar, dried fish, milk, and pulses. To ensure continuous revision of those eligible, food stamps had to be renewed every three months. Every household was attached to a co-operative society so that it can obtain its food stamps easily. But, no provision was made to change the value of stamps to maintain the real value. In the third phase, subsidies were completely removed. Prices of essential items were raised to reflect costs by the end of 1982. Floor prices were guaranteed to farmers with the aim of providing incentives for production (Suryanarayana, 1995).



Despite saving considerable budgetary resources, an increase in income inequality and acute malnutrition was identified. Therefore, the government modified the Poor Relief Act No. 32 of 1985. It changed the Department responsible for management and distribution of food stamps to the Department of Social Services. Subsequently, income ceiling was increased to Sri Lankan Rupee 700 per month and further graded income slabs were provided. The number of food stamps was graded by income; higher the income, the lower the quantity of food stamps. Administrative procedures were changed. Households had to apply to a poor relief committee stating the size, occupation and total income. The committee would then scrutinize applications to confirm eligibility. Once confirmed, households had to furnish further details that would be verified by the committee personnel visiting the households. Legal action would be taken against those found guilty of false declarations. Once selected, the names household-heads were put up in public places, so that the public could bring to their notice those who were wrongly included. This reduced the inclusion and exclusion errors and increased the number of beneficiaries.

In the case of Jamaica, general food subsidies were replaced by the target food stamp and the school feeding program. The food program was targeted at two main categories: (a) all pregnant or lactating women and children aged 5, and (b) the poor, elderly and handicapped. All recipients of relief and public assistance automatically receive food stamps and households with incomes less than US\$ 475 per year were also eligible (Grosh, 1992). Since eligibility was decided on an individual basis, each household could have more than one recipient. It was a bi-monthly program and was budgeted to help two lakh individuals in each category (Suryanarayana, 1995). The value of food stamp was continuously raised so that its real value did not decrease. Under school feeding program, Nutribuns – a fortified bread product, along with half pint of flavoured milk were distributed to all schools located in the poor household areas.

Various ministries of the government were responsible for overall administration, means testing and registration of participants and distribution of stamps. The Ministry of Health allowed the use of extensive facilities of local health centres for registration and distribution of stamps to beneficiaries.

To track the number of beneficiaries, birth certificates of children under 5 were used as documents while pregnant women were entered in the registers until their delivery, after which they had to re-register as lactating mothers and were eligible for stamps for six months. The planning unit ensured that the program runs within the financial constraints and the Jamaican commodity trading company ensured fund availability to a certain extent by monetizing food donations. The health centers provided a unique feature of self-targeting since most of the poor people lived within 10 miles of a government health centre, they could be easily identified as beneficiaries. Officials also included elderly and handicapped being verified through personal visits, interviews, and observations and finally reviewed by committees. The elderly and other beneficiaries could claim their stamps from post office, the town hall, police station, or church. The means test was based on self-reported incomes without any cross verifications. But, a visual inspection of quality of housing and consumer goods during home visit was done. The major disadvantage was that there was no periodic verification or re-registration. Once declared poor, they remained poor.

The food stamps act as legal tenders that can be exchanged for cornmeal, rice, and powder skimmed milk. The retailers can use the food stamps like money to purchase any commodity which the wholesaler can encash at any commercial bank and which finally reaches the Ministry through the central bank (Suryanarayana, 1995). Advertisement and publicity through radio, television and newspapers are given priority. The officers are trained in all aspects of the project who, in turn, educate the shopkeepers. The entire process is computerized and food stamps are distributed through the mail. This has reduced the beneficiary's time and transport costs. Also, it reduces the social stigma associated with it and, therefore, increases the participation of the poor. It is a better targeting mechanism than the earlier method of general food subsidies. In this system, there are fewer leakages because the wealthiest never depend on the public health system. Following are some broad measures for possible replication of the system:

- 1) Conduct means test by self-reporting of income by households in order to target the population with income lower than a specified level. For

further verification, visual inspection/home visit to be done on the quality of housing and consumer durables.

- 2) Issue of food stamps to the beneficiaries. The number of food stamps depends on age. Children below the age of 8 would get more food stamps than adults.
- 3) Renewal of food stamps every three months to reduce inclusion and exclusion errors.
- 4) Names of the beneficiaries should be put up in public places for self-monitoring.
- 5) Implement separate food programs for pregnant women, children under 5, the elderly, handicapped and indigenous tribes.
- 6) Use public health centres to target pregnant women and children due to high dependence of poor women and children on public health services.
- 7) Give the highest priority to awareness campaigns and advertisements through media.
- 8) Computerization of the whole system.
- 9) Send food stamps by mail to reduce the social stigma involved with these and increase participation of the poor.
- 10) Provide necessary training to the officials who in turn educate shopkeepers.
- 11) Put in place a sound financial infrastructure and increased efforts towards institutional strengthening, targeting and coverage, monitoring and evaluation of program impacts.
- 12) More attention towards generating employment and improving social security and health policies.

### Summing Up

Broad findings indicate that the cost of procurement and distribution of foodgrain has increased manifold, from ₹ 193/q to ₹ 1820/q for rice and ₹ 160/q to ₹ 1424/q for wheat between 1980-81 and 2009-10. The percentage of sales realization to economic cost has fallen from nearly 80 per cent to 40 per cent along with widening of the difference between MSP and issue prices of wheat and rice. Among major components, the cost has risen mainly on account of mandi charges, labour, freight and storage. An increase

in the distribution of food to the intended beneficiaries as proposed under the NFSA from 56 Mt to 78 Mt is expected to escalate the economic cost further. The resultant Food Subsidy Bill is likely to increase from the present (2009-10) ₹ 638 billion to ₹ 760 billion, ₹ 1052 billion and ₹ 837 billion, respectively under the three alternate scenarios of sales realization, central issue price of wheat and rice, and sale at 50 per cent of MSP. And the expected benefit to consumer in terms of saving on account of food purchase from PDS would be ₹ 78 per month.

Recognizing a perpetual increase in the economic inefficiency of the Food Corporation of India, it has been suggested to either revamp the existing PDS or replace it by direct cash transfers or food stamp/voucher. As of now, the cost of these alternative modalities to transfer food to the beneficiaries has not been estimated. The estimated annual cost of implementation of NFSB is also preliminary varying between ₹ 1.3 lakh crore to ₹ 3 lakh crore (Sinha, 2013). Preliminary estimates have indicated the cash transfer scheme to be three and a half times costlier than the PDS (Himanshu and Sen, 2013). The cross country experiences suggest the cash transfer to be cheaper to deliver US\$ 2.91 in Uganda, US\$ 6.28 in Yemen, US\$ 8.47 in Ecuador, and US\$ 8.91 in Niger (IFPRI, 2014). These estimates exclude the cost of procuring food. The literature has further indicated in-kind transfers, especially food stamp/voucher to be better than the cash transfers due to lower cost and price risk, less infrastructural requirements, and greater inclusiveness and efficiency. Cash transfer mechanism is often derided on grounds that the poor may not spend money to buy food and also could suffer risk due to hike in commodity price. Corruption in administration, high risks in delays in payments, inconvenience to reach the banks, loss of mandays and hence wages as markets and banks are seldom near are the other dissuading factors. People have already experienced these problems with programs like Mahatma Gandhi National Rural Employment Guarantee Scheme (MGNREGS), Indira Awas Yojana, etc. (*The Tribune*, 7 September 2011; *The Hindu*, 23 June 2012).

The recent international experience suggests that the choice between food and cash transfers is context-specific. The relative effectiveness of different delivery mechanisms depends on the severity of food insecurity and the competitiveness of markets for grains and other

foods (IFPRI, 2014; Kishore *et al.*, 2014). Adaptation of these schemes mandate a proper targeting, training and administrative set-up, information technology and financial infrastructure to deliver cash or food to the beneficiaries at large, which will take a much longer time. The major limitation with cash transfer and food stamps is that many backward regions lack proper markets and banking services. Also, the likely costs and benefits of such schemes vis-à-vis PDS and also saving on account of subsidy are not available. Perhaps, these programs can be started on a pilot basis in the selected cities or districts using the 'Aadhaar Card' to see their feasibility and then be scaled up, if receive acceptance by the respective state governments and the people.

To wind up, a shift to an improved and universal PDS as has been initiated in a few states appears more feasible in the Indian context as administrative and financial infrastructures have been in place for long. For instance, the governments of Chhattisgarh and Tamil Nadu have allotted fair price shops to either local communities or gram panchayats or women-run SHGs or cooperatives. Their commission has been increased and efforts are made to get them interest-free loans to enhance their operations and get reasonable margins. The issue of bogus ration cards and also leakage during transportation of foodgrains are checked through a central computerized data base and monitoring system. Another state that has increased access to food and loans is that of grain bank in the Betul district of Madhya Pradesh managed by SHGs of women and farmers since 2001. Gujarat has started a new scheme of supplying 'fortified *atta*' instead of wheat which is gaining popularity.

In a recent study, Dreze and Khera (2015) have reported a decline in the leakages from PDS in the reformed states. In another study, Himanshu and Sen (2013) have found a substantial increase in the contribution of in-kind food transfers to both poverty reduction and nutritional security. The analysis based on monthly per capita expenditure of specific quintile classes given in NSS rounds from 1993-94 to 2011-12 has further indicated that much of the increased impact is attributable to the improved public distribution system efficiency. States need to implement such good distribution practices in consonance with the requirements in their respective areas. They can utilize the expertise and experiences of local officials to

develop region-specific workable and financially viable procurement and distribution systems and may also try hybrid models in due courses. Vigilance committees for social audits and grievances can be set up. Participation of community under the supervision of state government can also address the problem of weak governance and ensure food delivery in a cost-effective and efficient way to the beneficiaries, as desired under the NFSA.

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## End-notes

- <sup>1</sup> The NFSA also ensures "free or affordable" meals for the destitute, homeless and "disaster-affected" people and those "living in starvation" and school children. It further proposes that every pregnant woman and lactating mother is entitled to get free food during pregnancy and for six months after childbirth. Cash benefits of ₹1,000 per month would be provided for the first six months to such mothers.
- <sup>2</sup> The likely financial liability will be ₹ 3500 billion out of which an amount of ₹ 1106 billion is earmarked for boosting agricultural production, raising investment to support research and extension, creating infrastructure and storage capacity, ensuring access to credit, crop insurance and remunerative prices to farmers. An amount of ₹ 135 billion is required for distribution to pregnant women. The annual expenditure on food subsidy under TPDS will be ₹ 1122.05 billion (i.e. an increase between ₹ 210 and ₹ 230 billion from the present ₹ 889.76 billion).
- <sup>3</sup> See among others Gulati *et al.* (2012); Bathla (2013) for discussion on these issues.
- <sup>4</sup> Below Poverty Line is an economic bench mark and poverty threshold, used by the Government of India to indicate economic disadvantage and identify individuals and households in need of government assistance.
- <sup>5</sup> The poor are given 25 kg (wheat and rice at ₹ 2/kg and ₹ 3/kg, respectively) with an estimated allocation of 30 lakh tonnes annually. With effect from March 2003, allocation of all households (APL, BPL and

AAY) has been revised to 35 kg per family. The scheme has been continuing and covers nearly 25 million households with an approximate monthly allocation of 7.27 lakh tonnes of foodgrains.

- <sup>6</sup> Average sales realization is the weighted average of CIP. If it falls short of economic cost, the government reimburses the difference to FCI as consumer subsidy. FCI also incurs carrying cost of buffer stocks which is fully reimbursed by the government. The total subsidy comprises consumer subsidy and carrying cost of buffer stocks.
- <sup>7</sup> Monthly wholesale prices are taken for selected markets in each of the major states from CACP reports and [www.agmarket.nic.in](http://www.agmarket.nic.in), Ministry of Agriculture.
- <sup>8</sup> The estimated subsidy on account of buffer stocks was 18 per cent of total food subsidy in 1998-99, which rose to 35 per cent in 2000-01 and then to 57 per cent in 2001-02 (Swaminathan, 2003).
- <sup>9</sup> In case of consumers in the lowest two quintiles, fiscal cost of effecting ₹ 1 of benefit was estimated to be ₹ 4.21 in 1993-94 and ₹ 3.49 in 1999-00. The same in the poorer states is found to be as high as ₹ 20.
- <sup>10</sup> This section draws on Bathla (2013).

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