

Understanding Leakages in the Public Distribution System

JEAN DRÈZE, REETIKA KHERA

This article attempts to resolve the puzzle of public distribution system leakages using the latest available data. Leakages remain high, but there is clear evidence of improvement in recent years, especially in states — including Bihar — that have undertaken bold PDS reforms. The main source of leakages is the “above the poverty line” quota, which is due to be phased out under the National Food Security Act.

A certain amount of confusion surrounds the issue of “leakages” in India’s public distribution system (PDS). Many states have initiated PDS reforms in recent years and reduced these leakages. Yet estimates of aggregate leakages at the national level based on National Sample Survey (NSS) data remain high. Citing an estimate of 47% for 2011–12, the recent report of the High Level Committee on Reorienting the Role and Restructuring of the Food Corporation of India (hereafter HLC report) disputes the view that recent reforms have had any impact. We attempt to clarify these issues using not only NSS data but also other sources.

NSS-based Estimates

PDS “leakages” refer to the proportion of PDS rice and wheat released by the Food Corporation of India (FCI) that fails to reach consumers. Estimates of leakages based on matching NSS data on household purchases from the PDS with “offtake” data from the FCI have been presented by a number of authors.¹

These estimates are best treated as approximate and tentative, for several reasons. First, different reference years typically apply to NSS and FCI data: the agricultural year (July to June) and the financial year (April to March), respectively. Earlier studies tend to overlook this mismatch of reference years. In this article, both series are synchronised on the agricultural year using monthly FCI data, though this adjustment turns out to make little difference. Second, there may be lags between offtake and distribution: even for the same 12-month period, NSS and FCI need not match exactly. Third, it is possible that NSS data underestimate PDS purchases, in some states at least. There is some evidence of NSS underestimation of the Mahatma Gandhi National

Rural Employment Guarantee Act employment as well as of the coverage of mid-day meals, and similar gaps may apply to PDS purchases as well. Finally, a few states (notably Chhattisgarh) distribute PDS grain not only from the FCI-managed “central pool” but also, to some extent, from local procurement and their own food stocks.

Nevertheless, the NSS-FCI approach appears to be reasonably informative. It points to high leakages throughout the 2000s — typically around 40% to 50%. Further, the interstate contrasts are broadly along expected lines. For instance, leakages are relatively low in states like Tamil Nadu and Himachal Pradesh, known for relatively good public services, and relatively high in Jharkhand, Uttar Pradesh and other “usual suspects”.

IHDS-based Estimates

Estimates similar to the NSS-based estimates can be derived from India Human Development Survey (IHDS) data. In fact, the IHDS surveys are possibly a more reliable source of data on PDS purchases than NSS data, because IHDS surveys focus specifically on human development issues including public services, in contrast to NSS surveys where the PDS is a kind of “side show”. The fact that PDS purchase figures are somewhat higher in the IHDS surveys than in the NSS surveys is consistent with this hypothesis: it is easier to understand how PDS purchases might be underestimated than how they would be overestimated.

Table 1 summarises NSS-based and IHDS-based leakage estimates at the all-India level for 2004–05 and 2011–12, the

Table 1: PDS Leakages, All-India

	2004–05	2011–12
PDS foodgrain: offtake from the FCI (lakh tonnes)	301	514
PDS foodgrain: Household purchases (lakh tonnes)		
NSS data	138	300
IHDS data	148	348
Estimated leakages (%)		
NSS-based	54	42
IHDS-based	49	32

Sources: Calculated from *Foodgrains Bulletin*, Department of Food and Public Distribution; NSSO (2007, 2014); Desai (2015). Monthly statistics on FCI offtake (including “ad hoc quotas”) were used to synchronise NSS and FCI data on the agricultural year (July to June). The IHDS survey stretched from October 2011 to December 2012. A spreadsheet with details of the calculations is available on request.

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Jean Drèze (jean@econodse.org) is Visiting Professor at the Department of Economics, Ranchi University and Reetika Khera (reetika.khera@gmail.com) teaches at IIT Delhi.

reference years of the two IHDS surveys. Both series point to a significant decline in PDS leakages between 2004–05 and 2011–12, though the decline is larger in the IHDS-based series — from 50% or so to 30% or so.

State-wise Estimates

Table 2 presents state-wise estimates of PDS leakages for the same reference years, based on NSS data (the state-specific IHDS samples are too small to calculate reliable state-wise estimates). These show that the moderate decline in leakages at the all-India level is largely driven by sharp declines in states that are known to have undertaken serious PDS reforms in recent years, e.g., Chhattisgarh, Odisha and Bihar. On the other hand, a number of states with high leakages have shown virtually no progress between 2004–05 and 2011–12, e.g., Madhya Pradesh, Maharashtra and Uttar Pradesh. Some of them did initiate reforms after 2011, within the framework of the National Food Security Act — their impact is yet to be ascertained.

Table 2: State-wise Leakage Estimates

	Estimated Leakages (%)		Percentage Reduction
	2004–05	2011–12	
Andhra Pradesh	23.2	22.0	5
Assam	88.7	50.7	43
Bihar*	91.0	24.4	73
Chhattisgarh*	51.7	9.3 ^a	82
Gujarat	51.7	67.6	-31
Haryana	82.7	49.0	41
Himachal Pradesh	27.0	27.1	0
J&K	23.0	-3.7	116
Jharkhand	85.2	44.4	48
Karnataka	28.7	34.7	-21
Kerala	25.6	37.1	-45
Madhya Pradesh	50.1	51.5	-3
Maharashtra	49.3	48.2	2
Odisha*	76.3	25.0	67
Punjab	93.2	58.8	37
Rajasthan	93.9	60.9	35
Tamil Nadu	7.3	11.9	-63
Uttar Pradesh	58.0	57.6	1
Uttarakhand	59.4	34.9	41
West Bengal	80.6	65.3	19
India (incl other states/UTs)	54.0	41.7	23

^a Taking into account local procurement as well as offtake from the central pool.

* States that are known to have undertaken bold PDS reforms in recent years, with significant results.

Sources: See Table 1; also Khera (2011a).

HLC Estimates

Somewhat different estimates of PDS leakages for 2011–12, including an all-India estimate of 47%, are presented in the

HLC report (Government of India 2015) based on a working paper by Ashok Gulati and Shweta Saini (2015).² We submit that these estimates, based on NSS data, involve a number of mistakes and inaccuracies. Two are particularly serious. First, to arrive at the total PDS purchase in each state, Gulati and Saini multiply average per capita PDS purchase (from NSS data) by an independent estimate of the number of persons living in households with a ration card. This is incorrect since the NSS average is over *all* households, not just households with a ration card. The correct thing to do is to multiply average purchase by total population. While this glaring mistake happens to make little difference at the all-India level, it leads to serious biases at the state level, e.g., gross overestimation of PDS leakages in Bihar.

Second, Gulati and Saini's estimate of total PDS offtake from the FCI is inflated on two counts. It includes offtake for four "other welfare schemes" (ows), e.g., the Integrated Child Development Services (ICDS), on the grounds that "the NSSO-PDS figures are understood to include all the subsidised grain consumption" (Gulati and Saini 2015: 5). This "understanding" is incorrect: the 68th round NSS report clearly states that PDS purchases do not include these items (National Sample Survey Office 2014: 11–12). More importantly, Gulati and Saini's offtake estimates include inflated figures under "ad hoc allocations". Three special ad hoc allocations were made in the September 2010 to May 2011 period for below the poverty line (BPL) cards, and two for above the poverty line (APL) cards. Ad hoc allocations for APL cards are already included in the "normal" PDS offtake totals, so that only ad hoc allocations for BPL cards should be added separately. Even for BPL cards, only two out of three special ad hoc allocations are relevant (the allocation made in September 2010 was supposed to be lifted by March 2011, so it is not relevant).³ Gulati and Saini add up all five special ad hoc allocations to the normal offtake, instead of just two — this inflates offtake by about 5 million tonnes.

These errors lead to an inflated estimate of PDS leakages at the all-India level: 47% instead of 42%. While this

may not sound like a large discrepancy, the first figure, if correct, might be construed as evidence against the argument that PDS reforms have led to reduced PDS leakages, and that is indeed how this incorrect figure is used in the HLC report. As mentioned earlier, the first mistake also leads to very misleading figures for specific states. Bihar is a prime example. As discussed below, there has been significant improvement in the PDS in Bihar in recent years, and this is reflected in various surveys including the NSS. However, it is invisible in the biased HLC estimates.

APL Scam

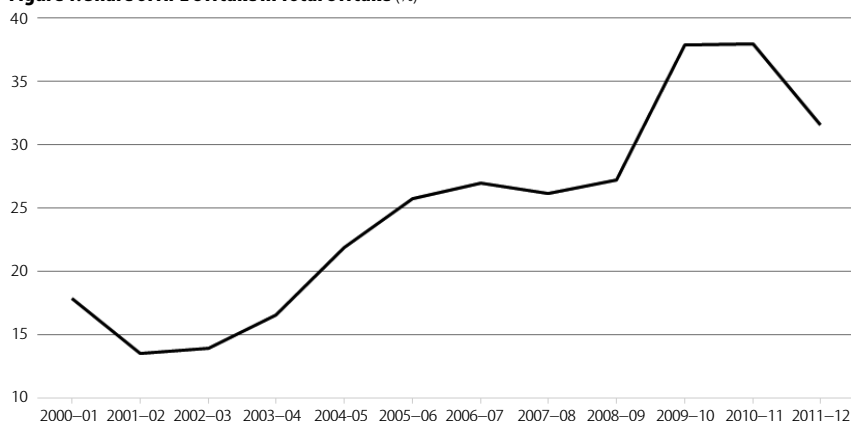
Just as important to understand as levels and trends in PDS leakages is the "source" of the leakages. In an earlier article (Drèze and Khera 2011), we argued that the APL quota was the most likely source of mass leakages. That was, at any rate, one way of resolving an apparent puzzle: NSS-based estimates suggested high leakages, yet a field survey conducted in 2011 found that BPL households were getting about 84% of their entitlements in nine sample states (Khera 2011b).

Recent data support this conjecture. Using NSS data for 2011–12 (68th round), it is possible to split aggregate PDS purchases between APL and BPL households. The split is not very precise, because some states now have other categories of ration cards, and it is not always clear how they were reclassified by NSS investigators in terms of the APL–BPL distinction. Yet a clear pattern emerges: high leakages in the APL quota, and much lower leakages in the BPL quota. The pattern is even clearer in IHDS-2 data (Table 3). This helps to understand the resilience of PDS leakages in the 2000s,

Table 3: The APL Scam

	NSS Data (2011–12)	IHDS Data (2011–12)
BPL/AAY quota		
FCI offtake	342	342
Household purchases	239	270
Estimated leakages (%)	30	21
APL quota		
FCI offtake	172	172
Household purchases	56	76
Estimated leakages (%)	67	56

Sources: See Table 1. All figures (except percentages) are in lakh tonnes.

Figure 1: Share of APL Offtake in Total Offtake (%)

when the share of the APL quota in total PDS offtake rose sharply (Figure 1). In 2011-12, almost half of PDS offtake was accounted for by the APL quota as well as so-called “special ad hoc allocations”.

The reasons why the APL quota is so leaky are not difficult to understand: this quota essentially acted as a dumping ground for excess food stocks during the 2000s. In the absence of any other mechanism to reconcile procurement and distribution, and to avoid further swelling of food stocks that had already gone through the roof, the APL quota was the default outlet. With APL allocations varying from year to year in a largely arbitrary manner, the corresponding “entitlements” of APL households (actually no entitlements in any meaningful sense) also varied without rhyme or reason. Very often APL households had no idea of what they were supposed to get from the PDS. Corrupt dealers dutifully kept them in the dark and exploited their ignorance. In some states, the bulk of the APL quota went straight to the black market and APL households, unaware of their foodgrain entitlements, ended up treating their ration card as a “kerosene card”. All this went on for years because a powerful mafia had grown around the APL quota and most of the victims were unaware of the situation.⁴ Similar observations are likely to apply to “special ad hoc allocations”: in the absence of any public awareness of the provisional entitlements associated with these allocations, corrupt middlemen must have found it relatively easy to divert them.

Though we are writing in the past tense, this situation still prevails in some states, e.g. Uttar Pradesh where the routine embezzlement of the APL quota is an open secret. Under the National Food Security Act, the APL is due to be phased out. This is an important opportunity to end the APL scam.

Bihar’s Experience

As mentioned earlier, PDS reforms have taken place in a number of states in recent years, with a significant impact on leakages as well as on other aspects of the quality of the PDS (e.g. regularity of distribution and quality of foodgrains). Chhattisgarh is a well-documented example, but there are other interesting cases too.⁵ To illustrate, Odisha seems to have taken a leaf from Chhattisgarh’s experience, initially in the so-called “KVK region” (undivided Kalahandi, Balangir and Koraput), known for acute food insecurity, and later in other districts as well. In the KVK region, the PDS was made universal, or rather near-universal, in the sense that BPL entitlements were also extended to APL households (a significant proportion of households, however, have no ration card at all). Along with this, bold PDS reforms were launched, e.g. doorstep delivery, computerisation, and privatisation of “fair price shops”.⁶ The positive impact of these reforms is evident not only from NSS data, which show a sharp decline in PDS leakages in Odisha, but also from a number of field studies.⁷ Just to cite one example, Mihika Chatterjee’s recent study of the PDS in Koraput found that almost all the

sample households (97% to be precise) had received their full entitlement of PDS grain during the three months preceding the survey.⁸

Bihar’s recent experience is even more interesting, because of the state’s notorious record of large-scale embezzlement of PDS foodgrains in the 2000s, with leakages in the range of 80% to 90% throughout that period. Signs of improvement emerged around 2011, notably with the introduction of a system of tracking coupons. However, evidence of the effectiveness of these early reforms is somewhat mixed. NSS data suggest a dramatic reduction in PDS leakages in Bihar between 2004-05 and 2011-12 (Table 2), but field surveys suggest that in spite of some improvement Bihar’s PDS remained one of the most corrupt as recently as 2011.⁹

Further reforms took place in the last three years, and particularly in the last 12 months or so, as the Government of Bihar made strenuous efforts to implement the National Food Security Act in anticipation of the assembly elections. A new list of ration cards was prepared by applying simple “exclusion criteria” to household data from the Socio-Economic and Caste Census (SECC). About 75% of rural households in Bihar today have a new ration card, or an Antyodaya card. For the first time, most people know that they are entitled to 5 kg of foodgrains per person per month from the PDS. Opposition parties are helping them to know their rights and demand their due. All this has put the entire system under tremendous pressure to perform, in sharp contrast with the situation that prevailed until just a few years ago, when most people in Bihar got virtually nothing from the PDS.

A recent survey of 1,000 randomly-selected rural households in four districts of Bihar (Banka, Gaya, Purnea and Sitamarhi), initiated by the Planning and Development Unit at Allahabad University, found further evidence of major improvements in the PDS. For instance, households with a ration card (74% of the sample) were able to secure close to 80% of their PDS entitlements during the month preceding the survey

Table 4: Preliminary Findings of a Survey of NFSA in Bihar (in %)

Proportion of sample households who are eligible for NFSA as per SECC data	89
Proportion of eligible households who have a new ration card or AAY card	87
Purchase of PDS grain by households with a new ration card, as a proportion of "entitlement"	
October 2014	68
November 2014	79
Proportion of households with a new ration card who felt that the quality of PDS grain was "average" or "good"	
Wheat	90
Rice	81
Proportion of sample households who were deemed victim of "exclusion errors" by the survey team	3

Source: Survey of 1,000 rural households conducted in December 2014 in four districts: Banka, Gaya, Purnea and Sitmarhi. The sample households were selected at random from the SECC "draft list".

(for further details, see Table 4). There are still many instances of overcharging (e.g., Rs 4/kg for rice instead of Rs 3/kg) or under-weighting (e.g., 4 kg per person instead of 5 kg), and even cases of rations being skipped in a particular month. Nevertheless, Bihar's PDS seems to be improving in a way that few observers would have thought possible five years ago. This experience, aside from being important in its own right, suggests that effective PDS reform is possible even in the worst-governed states.

Conclusions

In this note, we have presented updated estimates of PDS leakages using the latest data available — not only from the NSS but also from the IHDS surveys and related sources. For the first time, a relatively clear picture emerges. First, PDS leakages remain unacceptably high — about 30% according to the lowest estimate for 2011–12. Second, there is strong evidence of declining leakages in recent years. Third, the decline is particularly clear in states that are known to have undertaken serious PDS reforms, confirming the effectiveness of these reforms. Fourth, Bihar's recent experience suggests that even the worst-governed states are capable of improving their PDS. Fifth, the biggest source of continuing leakages is the APL quota (and probably also "ad hoc quotas"). The implementation of the National Food Security Act is an important opportunity to phase out this leaky quota

and complete the process of PDS reform across the country.

Alas, the implementation of the National Food Security Act is being held up in many states due to prolonged delays in the release of SECC data. State governments need SECC data to identify eligible households. SECC data for Bihar are available and the Government of Bihar was able to use it to generate a new list of ration card, transparently linked with SECC data — a major improvement over the earlier BPL list. Many other states, however, are still waiting for SECC data — four years after the census was completed. The delay is scandalous considering that the central government spent about Rs 5,000 crore on this data collection project. This stumbling blocks needs to be removed at the earliest if the National Food Security Act is to see the light of day.

NOTES

- 1 See, e.g., Himanshu and Sen (2013); Khera (2011a); Gulati and Saini (2015). For further discussion of this method and some of its variants, see Khera (2011a).
- 2 Oddly, that paper does not refer to earlier estimates for that year by Himanshu and Sen (2013). As it happens, those estimates also seem to involve some inaccuracies. We are able to replicate them using household multipliers instead of individual multipliers to calculate per capita PDS purchases from NSS data, but the correct thing to do is to use individual multipliers — that is certainly how per-capita PDS purchase figures are calculated in the NSS reports. Himanshu and Sen's calculations yield a lower estimate of all-India PDS leakages in 2011–12 (35%) than our own estimate (42%).
- 3 This reading is based on detailed clarifications from the Department of Food and Public Distribution, Government of India. Unlike the Gulati–Saini accounting, it is consistent with the grand total of 509 lakh tonnes for PDS offtake (including ad hoc allocations) in 2011–12 presented in the *Foodgrains Bulletin* (see e.g., March 2013 issue, p 10).
- 4 For further discussion, see Drèze and Khera (2011); Drèze (2013); Khera (2013).
- 5 On PDS reforms in Chhattisgarh, see Drèze and Khera (2010); Khera (2011b); Raghav Puri (2012), among others.
- 6 On the rationale and impact of these and related reforms, see Khera (2011b). "Doorstep Delivery" (fair price shops) refers to the separation of transport agencies from distribution agencies.
- 7 See, e.g., Ankita Aggarwal (2011); Jijo Jose (2011); Mihika Chatterjee (2014); Drèze and Khera (2014); Drèze, Khera and Mishra (2014).
- 8 See Chatterjee (2014), based on a random sample of 793 rural households in Koraput. This finding is consistent with our own observations, based on field surveys in the KBK region from 2011 to 2014.
- 9 See Dhorajiwala and Gupta (2011); Khera (2011b); Choithani and Pritchard (2015). IHDS-2 data also suggest a sharp reduction of PDS leakages

in Bihar by 2011–12, but as mentioned earlier, IHDS-2 figures for specific states involve a substantial margin of error.

REFERENCES

- Aggarwal, Ankita (2011): "The PDS in Odisha: Against the Grain?", *Economic & Political Weekly*, 3 September.
- Chatterjee, Mihika (2014): "An Improved PDS in a 'Reviving' State: Food Security in Koraput, Odisha", *Economic & Political Weekly*, 8 November.
- Choithani, C and B Pritchard (2015): "Assessing Bihar's Coupon-based PDS", *Economic & Political Weekly*, 17 January.
- Desai, Sonalde (2015): "Public Distribution System: More People Rely on the PDS Than Ever Before", Research Brief No 1, India Human Development Survey (available at http://ihds.umd.edu/IHDS_files/ResearchBrief01.pdf).
- Dhorajiwala, S and A Gupta (2011): "Coupon Fiasco", *Frontline*, 31 December.
- Drèze, Jean (2013): "From the Granary to the Plate", *The Hindu*, 1 August.
- Drèze, J P and R Khera (2010): "Chhattisgarh Shows the Way", *The Hindu*, 13 November.
- (2011): "PDS Leakages: The Plot Thickens", *The Hindu*, 12 August.
 - (2013): "Rural Poverty and the Public Distribution System", *Economic & Political Weekly*, 16 November.
 - (2014): "A PEEP at Another India", partly published in *Outlook*, 24 March.
- Drèze, J P, R Khera and R Mishra (2014): "Parivartan, Tike Tike", *Samaj* (Odiya daily), 23 October.
- Government of India (various years): *Foodgrains Bulletin*, New Delhi: Department of Food and Public Distribution.
- Government of India (2015): *Report of the High Level Committee on Reorienting the Role and Restructuring of the Food Corporation of India* (New Delhi).
- Gulati, A and S Saini (2015): "Leakages from the Public Distribution System (PDS) and the Way Forward", Working Paper 294, Indian Council for Research on International Relations, New Delhi.
- Himanshu (2013): "PDS: A Story of Changing States", *Mint*, 7 August.
- Himanshu and A Sen (2013): "In-kind Food Transfers – I: Impact on Poverty", *Economic & Political Weekly*, 16 November.
- Jose, Jijo (2011): "The PDS Learning Curve", *Down to Earth*, 18 August.
- Khera, Reetika (2011a): "Trends in Diversion of Grain from the Public Distribution System", *Economic & Political Weekly*, 21 May.
- (2011b): "Revival of the Public Distribution System: Evidence and Explanations", *Economic & Political Weekly*, 5 November.
 - (2013): "Do Government Schemes Ever Work in India?", Yahoo, 22 October, available online <https://in.news.yahoo.com/do-government-schemes-ever-work-in-india--045454251.html>. Last accessed 1 February, 2015.
- National Sample Survey Organisation (2007): *Report No 510: Public Distribution System and Other Sources of Household Consumption, 2004–05*, New Delhi: NSSO.
- National Sample Survey Office (2014): *Report No 558: Household Consumption of Various Goods and Services in India 2011–12*, New Delhi: NSSO.
- Puri, Raghav (2012): "Reforming the Public Distribution System: Lessons from Chhattisgarh", *Economic & Political Weekly*, 4 February.