

Piloting and Evaluating e-PDS and cash transfer options for Improved Food Security in Bihar

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with

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Agenda

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| Background |
| Results of Pre-Pilot Survey |
| Proposal |
| Discussion and Next Steps |



TPDS Background

- Main instrument of food security for poor in India
- But it is also staggeringly inefficient
 - Gol spent Rs. 3.65 for every 1 rupee of benefits received by beneficiaries (Planning Commission study on TPDS, 2005)
 - Bihar had among the highest rates of leakage – greater than 75% (this was 2005 of course)
- In addition to leakage, TPDS also imposes other costs
 - Restricts choice of foods – 70% of respondents in PEO study strongly prefer local varieties of food to those offered by the Fair Price Shop (FPS)
 - Tying eligibility to a single FPS also limits effectiveness of TPDS in providing food security to migrant workers and their families



Why Consider Direct Cash Transfers?

- Technically feasible at lower levels of leakage with UID
 - UID enrollment accompanied by creation of bank accounts
- Strong demand for consideration and evaluation of idea from political leadership in Bihar
 - Chief Minister has written and spoken extensively about cash transfers (and also discussed with UIDAI Chairman)
 - Deputy Chief Minister suggested that academic economists should study effectiveness of direct cash transfers in lieu of in-kind benefits (at IGC Bihar Growth Conference in Dec 2010)
- Strong support among key academics and policy makers
 - Chief Economic Advisor Kaushik Basu's recent paper on Foodgrain Management in India lays out case clearly (Basu 2010)



Direct Cash Transfers: Pros and Cons

- Pros

- Potentially much lower levels of leakage (especially with UID and secure payments)
- Lower administrative costs
- Greater flexibility for the beneficiary
- Greater empowerment for the beneficiary

- Cons

- Cash transfers may be implemented poorly
- Does not protect beneficiary against price volatility
- Challenge of spatial and temporal indexation
- Behavioral concerns ('will they drink it away')



Our Proposal

- Whether benefits of switching outweigh costs is essentially an empirical question
- Several important concerns to address before considering/ implementing change
 - Governments are understandably risk-averse about big changes
 - especially in programs meant for poor and vulnerable
- We suggest a serious pilot and evaluation on scale of around 300 FPS's (first with a 10 FPS Proof of Concept)
 - Key idea is to provide beneficiaries with a choice of cash/kind
 - Research team will help with design and conduct a rigorous technical evaluation of costs and benefits of such a change
 - Proposal responds to request from the Deputy Chief Minister in December 2010



Activities to Date

- Meeting and sharing of concept note with Prl. Secy, Dept. of Food & Civil Supplies, GoB (Dec 2010)
- Request from Prl. Secy to conduct a pre-pilot study to understand interest among beneficiaries in receiving cash transfers in lieu of TPDS entitlements (Feb 2011)
- Conducting of 500 HH baseline survey on TPDS in Patna district - 300 rural and 200 urban HH (March – April 2011)
- Detailed presentation to GoB and discussions with senior officials (PS's of DFCEP, RD, Finance; DC; CS) (May – June 2011)
- Formal proposal submitted to GoB (July-August 2011)

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Access to food grains: *Kirana* stores generally closer than FPS

Access to FPS is fairly high

| Distance to Assigned FPS | % of Households in Urban | % of Households in Rural |
|--------------------------|--------------------------|--------------------------|
| 1km or less | 60.0 | 56.9 |
| 1-3km | 35.4 | 39.6 |
| 3-5km | 3.6 | 3.5 |

But the vast majority of respondents also reported multiple *kirana* stores in the same geographic radius


| | Urban | Rural |
|---|-------|-------|
| Average number of <i>kirana</i> stores within same distance as assigned FPS | 7 | 4 |

... suggesting substantial competition in the open market and options for grocery purchases beyond the FPS's

Effective Access: *Kirana* stores open far more often than FPS

***Kirana* stores open almost every day and also open for more hours per day than FPS's**

| | Urban | | Rural | |
|--|-------|---------------|-------|---------------|
| | FPS | <i>Kirana</i> | FPS | <i>Kirana</i> |
| Average days open per month | 9.7 | 30.0 | 6.0 | 29.8 |
| % of respondents reporting shop open for less than 5 days/month | 13.8 | 0.0 | 54.2 | 0.0 |
| % of respondents reporting shop open for less than 10 days/month | 48.7 | 0.0 | 81.6 | 0.0 |
| Average hours open per day (when shop is open) | 5.1 | 11.0 | 6.1 | 10.6 |



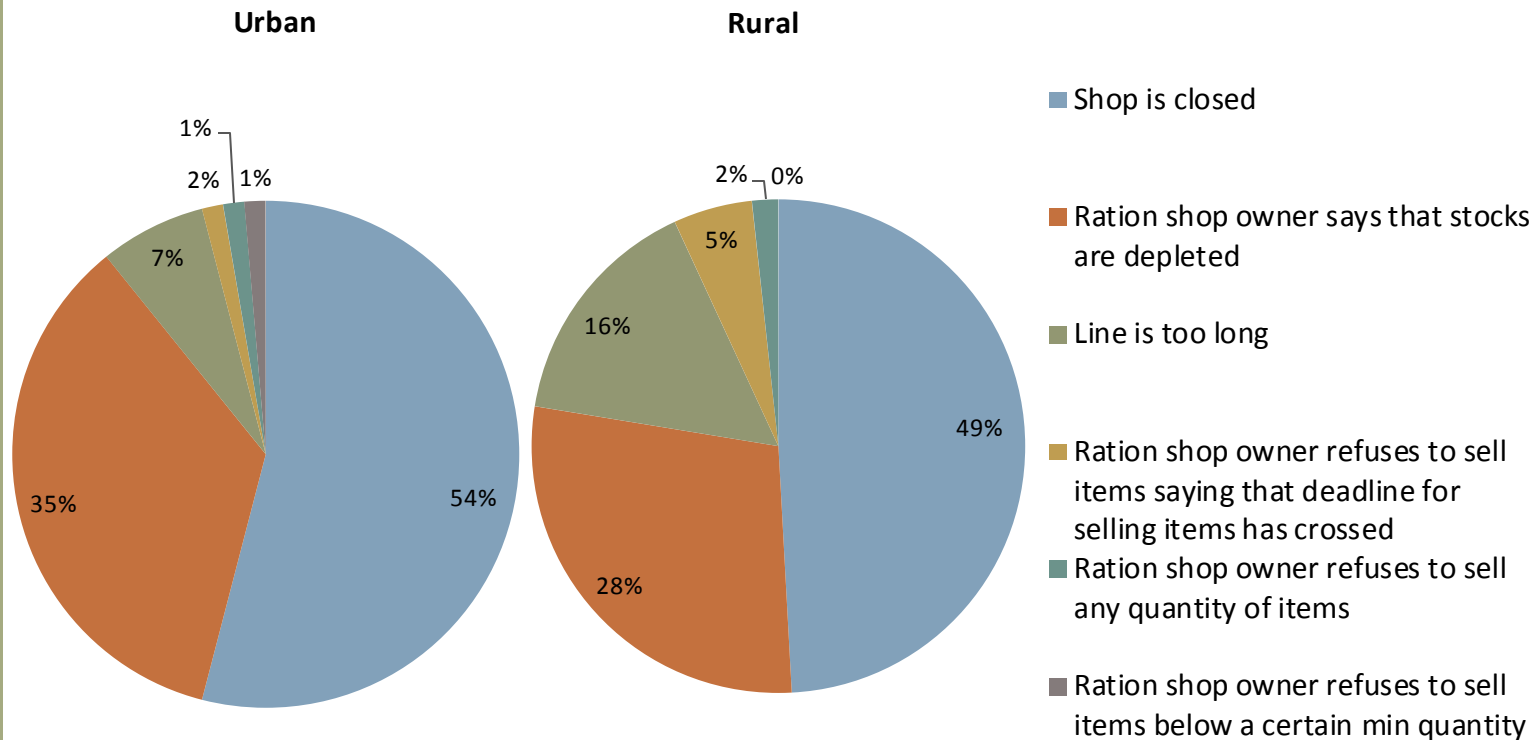
Effective Access: Waiting times much higher at FPS than at *kirana* stores

Even when the FPS is open, reported waiting times are much longer in FPS's than *kirana* stores, especially in rural Patna

| Waiting time | % of Households in Urban | | % of Households in Rural | |
|----------------------|--------------------------|---------------|--------------------------|---------------|
| | FPS | <i>Kirana</i> | FPS | <i>Kirana</i> |
| Less than 15 minutes | 24.1 | 78.5 | 13.2 | 81.3 |
| 16-30 minutes | 40.5 | 17.9 | 29.2 | 14.6 |
| 31-45 minutes | 2.6 | 0.0 | 5.6 | 0.7 |
| More than 45 minutes | 27.2 | 3.1 | 52.1 | 3.1 |

Unsuccessful Trips to the FPS

Rural and urban respondents reported an average of **1.47** and **1.85 unsuccessful trips per month to the FPS**, respectively, citing the following reasons:



Purchasing patterns at ration shop viz. kirana store

Mean quantity purchased in the last 30 days:

| Item | Urban | | Rural | |
|------------|-------|---------------|-------|---------------|
| | FPS | <i>Kirana</i> | FPS | <i>Kirana</i> |
| Wheat (kg) | 9.4 | 21.8 | 10.1 | 15.4 |
| Rice (kg) | 12.9 | 21.8 | 12.6 | 19.5 |

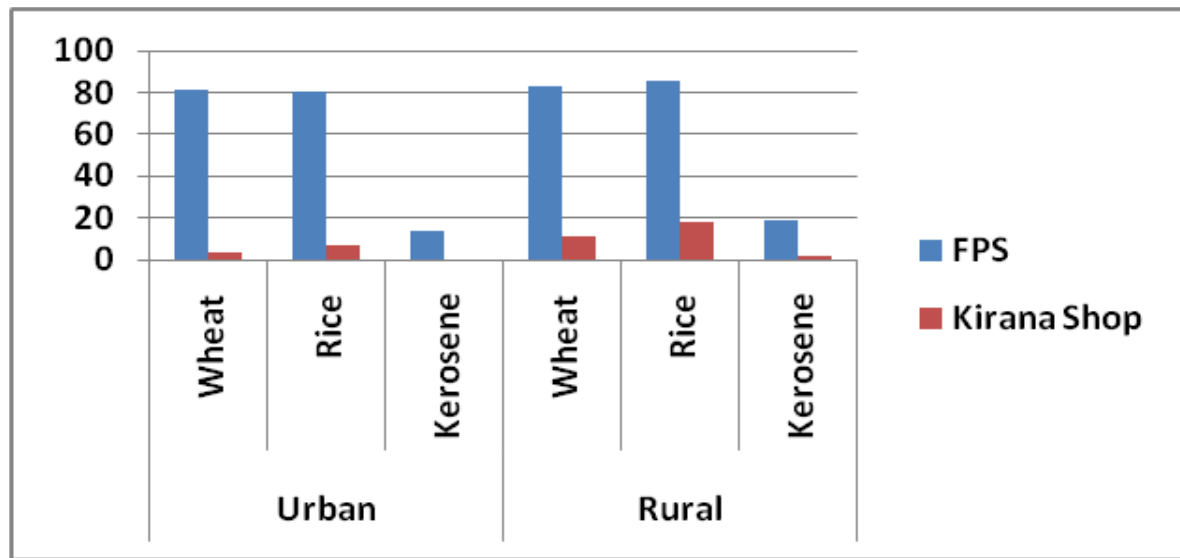
Percentage of households that purchased any good from *kirana* store in last 30 days :

| Item | % of Urban Households | % of Rural Households |
|-------|-----------------------|-----------------------|
| Wheat | 87.2 | 57.3 |
| Rice | 88.7 | 63.2 |

A majority of respondents **already use the private market** over and above their FPS entitlements and **HH typically buy more from the private market** than they obtain from the FPS

Goods much more likely to be adulterated at FPS than at *kirana* store

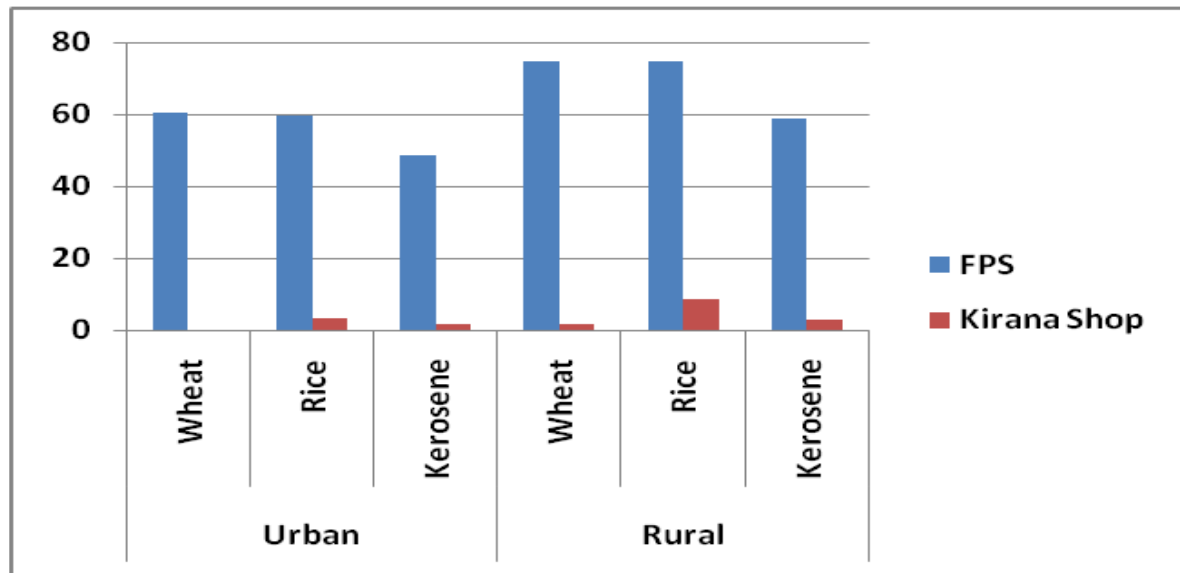
Percentage of respondents that report adulteration at FPS and *kirana* store:



Over **80%** of respondents reported adulteration of goods at the FPS, while reports of adulteration were infrequent for *kirana* stores

Goods much more likely to be under-weighted at FPS than at *kirana* store

Percentage of respondents that report under-weighting of goods at FPS and *kirana* store:



A **majority** of respondents also reported that the goods they received from the FPS weighed less than what they paid for, while fewer than **10%** of respondents reported under-weighting of goods in *kirana* stores

Price volatility at the *kirana* store in the last 90 and 365 days

| Item | Urban | | | | Rural | | | |
|----------------------|--------------|--------------|---------------|--------------|--------------|--------------|---------------|--------------|
| | Last 90 Days | | Last 365 Days | | Last 90 Days | | Last 365 Days | |
| | Max (Rs.) | Min (Rs.) | Max (Rs.) | Min (Rs.) | Max (Rs.) | Min (Rs.) | Max (Rs.) | Min (Rs.) |
| Wheat (per kg) | 12 | 12 | 12 | 11 | 12 | 12 | 12 | 11 |
| Rice (per kg) | 23 | 21 | 23 | 20 | 21 | 19 | 21 | 18 |
| Kerosene (per lt) | 33 | 33 | 33 | 31 | 33 | 32 | 33 | 30 |

While respondents reported fluctuations in *kirana* store prices, the degree of **volatility was not high** and **did not exceed 15% over** the course of **the previous 365 days**

The Key Question

The exact question asked to respondents

- ⊙ ***Interviewer - read aloud to the respondent: “The Government of Bihar is considering a program whereby households would receive a direct cash transfer equal to the current subsidy that they are receiving every month instead of their eligibility to purchase food from the ration shop. The amount of transfer will be based on the difference in the price of an item between a kirana store and the ration store, multiplied by their monthly entitlement of that item.***
- ⊙ ***For example, if your household is eligible to purchase 10kgs of wheat from the ration store at Rs. 5/kg, and the price of wheat at the kirana store is Rs. 20/kg, then the government is currently providing you a subsidy of Rs. 15/kg [Rs. 20/kg – Rs. 5/kg] and a total of Rs. 150 [Rs. 15/kg × 10kgs]. Under this proposal, the same subsidy of Rs. 150 would be provided to you as cash every month.***
- ⊙ ***Moreover, the amount of the cash transfer will be adjusted every year to account for inflation. For example, if the price of wheat at the kirana store increases to Rs. 25/kg, then the cash transfer amount would increase to Rs. 200 [10kgs × (Rs. 25/kg – Rs. 5/kg)].***

Perceptions of the Cash Transfer Program

| | % of Urban Households | % of Rural Households |
|---|-----------------------|-----------------------|
| Support or strongly support idea of cash transfers | 95.9 | 98.3 |
| Willing to participate in the cash transfer program | 94.4 | 96.9 |

An overwhelming majority of respondents expressed an interest in participating in a cash transfer program that paid them the equivalent value of the subsidy provided through the TPDS

Perceived advantages of cash transfers vis-à-vis subsidies at ration shop

| | % of Urban Respondents | % of Rural Respondents |
|--|------------------------|------------------------|
| I get bad quality commodities from the FPS | 83.8 | 68.3 |
| I do not get my complete entitlement from the FPS | 48.7 | 57.1 |
| I have a much broader range of options with cash transfers | 54.5 | 53.7 |
| The FPS is quite far away/ I have to wait in a very long queue to collect my entitlement | 27.2 | 32.8 |
| I have to pay more than the subsidized price to get my allotment at the FPS | 23.6 | 21.3 |
| The FPS is closed most of the time/the stock is depleted | 19.9 | 18.1 |
| I have no other income/I need cash to meet my most pressing needs | 3.1 | 13.6 |

Not surprisingly, respondents cited the **poor quality** of ration shop goods and the **under-provision of their entitlements** as benefits of switching to cash. Many also viewed the **flexibility** afforded by cash as an advantage.

Perceived concerns regarding the cash transfers

| | % of Urban Respondents | % of Rural Respondents |
|---|------------------------|------------------------|
| There is no guarantee that I will receive the cash on time | 70.9 | 70.4 |
| Cash might be spent on non-essential needs | 39.2 | 45.5 |
| I am afraid that I might not receive my fully entitled cash amount | 38.1 | 39.7 |
| I am afraid that I may have to pay a commission or a bribe to receive the cash | 29.6 | 33.2 |
| I am afraid that I may have to exert a lot of effort to receive the cash amount | 16.9 | 26.7 |
| Market prices may increase substantially and I may not be able to afford to buy goods in the market | 32.8 | 22.4 |
| The quality of commodities at the FPS and non-FPS shops is the same | 0.0 | 0.7 |

However, respondents did express certain concerns including **fear of not getting complete cash transfer/delayed cash transfer, transfer lagging inflation**, and potential for cash to be spent on non-essential items.

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There are two outstanding issues to be resolved

Will recipients prefer a cash transfer program **as actually implemented** to the status quo?

Will cash transfers meet the stated goals of policy-makers, particularly food security?

PDS reform is a sensitive issue, so a cash transfer program that fails to meet either criterion would be vulnerable

Each issue can be addressed using a different tool

Will recipients prefer a cash transfer program as actually implemented to the status quo?

A pilot with an element of *individual choice* addresses this issue

Will cash transfers meet the stated goals of policy-makers, particularly food security?

Allocating the opportunity to participate in the pilot by *lottery* and measuring effects on household well-being addresses this issue

A cash transfer program that passes both these tests is a true win-win reform



Benefits of Individual Choice

- **Technical**

- Accommodates diversity in geography and market integration
- Provides insurance against poor implementation
- Allows risk-averse beneficiaries to observe how it works and then opt in (or out)

- **Ethical**

- Does not impose the change on anyone
- Accommodates diversity of preferences

- **Legal**

- Will be consistent with Supreme Court mandates on PDS

- **Political**

- Difficult to oppose because no top-down imposition
- Provides real time feedback on voter preferences – can be a key input into decisions with respect to scaling up



Technology Architecture

- Enrollment in E-Shakti (with or without UID)
- Beneficiary preferences on cash/kind captured during enrollment
- FPS shops are upgraded to an e-PDS system that requires biometric authentication of transactions
 - Allotment of grain for next month determined by number of authenticated transactions
- Technological back end aggregates beneficiary preferences and disburses cash via BC/CSP, grain via FPS
- Real time reporting of authenticated transactions
- Beneficiaries allowed to switch preferences from/to cash/kind every 6 months (allows learning and insulates against negative outcomes)



Evaluating e-PDS

- Skeptics of cash transfers would like efforts to be made to improve the PDS instead
- In particular, if we are investing in a secure payment system to make cash transfers possible, why not use the same to improve the PDS?
- The e-PDS is a promising way of doing this (can limit outright diversion and duplicate ration cards)
- Makes sense to evaluate e-PDS as well
- Provides a comparison of cash vs. in kind benefits in a similar implementation setting



Suggested Implementation Roadmap

- Technical proof of concept (10 FPS – 5 each for e-PDS and cash) – 6 months
 - Important to iron out all implementation issues before doing the pilot and evaluation in ~300 FPS
- Main pilot and evaluation (300 FPS – 100 for e-PDS; 100 for cash; 100 as a pure control group) – 12-18 months
- Use a lottery to selection 100 FPS for being eligible for the switch to cash transfers and implement the change
 - Monitor process and outcome variables in all 300 FPS's
 - Research team will carefully measure market prices, consumption, nutrition, and anthropometrics

Key Components of Proposal

Lottery to
select sites

- Procedurally fair in a limited pilot
- Critical for credibly learning about process and about impacts

Individual
choice

- Requires old and new systems to run in parallel during the pilot
- Minimizes political and beneficiary risk
- Allows a 'bottom up' as opposed to a 'top down' approach to welfare policy

Measurement

- Requires large-scale survey operations and careful thinking about mechanisms and outcomes
- We will conduct the study at no financial cost to government

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Key Discussion Points

- 3 Main sets of costs
 - Cost of subsidy – key challenge is that most of the current subsidy comes from GoI (through FCI)
 - Cost of implementing the e-PDS/cash delivery mechanism
 - Cost of research and evaluation
- Managing resistance from FPS owners?
- Integration with E-Shakti (with or without UID)
 - May be best to start PoC without waiting for this and integrate for a scale up
- Institutional continuity from government (MoU between GoB and IGC/ADRI/J-PAL)



Summary

- Political leadership of Bihar has shown a strong interest in cash transfers
- Many potential advantages (lower leakage, flexibility, portability), but important concerns remain (implementation risk, price volatility, nutrition)
- A structured pilot and evaluation – with individual choice will help us understand if this is a good idea
 - Opportunity for Bihar to be a pioneer in rethinking social protection and changing the all-India conversation
- Our data suggests that this will be politically popular