

The Shift to Cash Transfers: Running Better But on the Wrong Road?

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The Government of India has announced that subsidies on fertilisers, kerosene and liquefied petroleum gas will be replaced by cash transfers to end users. A close examination of the objectives of the subsidies in fertiliser and kerosene and the implications of the shift raises some challenging questions. While there is no doubt that India will have to move to a greater use of cash transfers, it may not necessarily be the best option in all cases. Unless discussions on transfers are part and parcel of a broader strategy, any changes in favour of cash transfers will simply amount to tactical differences and not address long-term challenges.

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Tactics without strategy is the noise before defeat.

—Sun Tzu

Introduction

The Government of India in its budget for 2011-12 has proposed the substitution of subsidies for specific budget items, namely, kerosene, liquefied petroleum gas (LPG) and fertilisers by direct cash transfers. These proposals are the culmination of several factors: ballooning fiscal costs; the manifold distortions resulting from these subsidies; the successful examples of cash transfer programmes around the world, particularly in Latin America, as a means to address poverty and improve social welfare of the poor; and institutional and technological changes within India, particularly the onset and rapid expansion of the Aadhar programme which aims to give every Indian a biomarker-based unique identity and Swabhiman, under which every Indian is expected to have access to a bank account, bringing, for the first time, half of India's population access to financial inclusion.

While there is much to commend in the broad thrust of what promises to be a major policy shift, the history of poverty programmes in India is littered with good intentions vastly exceeding actual outcomes. Indeed this is what had led some of us to argue for replacing the multitudes of poverty programmes in India with direct cash transfers (CT) to the poor (Kapur, Mukhopadhyay and Subramanian 2008a, b; UNDP 2009; Mehrotra 2010). Indeed India already has a range of CT programmes ranging from targeted unconditional social security programmes (Dutta, Howes, and

Murgai 2010), to CT programmes designed to change societal behaviour towards girl children (e.g., the Ladali Lakshmi Yojana). Indeed, while its proponents may not like the designation, India's flagship National Rural Employment Guarantee Scheme is at heart a conditional CT programme. Consequently, as the case for shifting to cash transfers gathers pace, it is important at this incipient stage for the proposals for cash transfers to be subjected to strong stress tests so as to ensure better outcomes.

This article examines two of the three proposed substitutions of cash transfers in lieu of subsidies included in the recent budget, namely, fertilisers and kerosene. It does not address the case of LPG both because of space constraints as well as the fact that the subsidy largely accrues to above the poverty line (APL) urban consumers and therefore has much less rationale to begin with. It does not attempt, however, to present detailed designs for the implementation of these transfers. Instead, it takes up these two specific proposals to suggest how we might approach the challenging questions around such substitutions and explore fully their complex consequences. Careful consideration of these two cases, it will be argued, leads us to draw an important distinction between tactics and strategies.

This distinction is central to three key points in introducing and administering cash transfer programmes as part of larger development policies and reform processes. First, substituting subsidies with cash transfers, if driven mainly by fiscal considerations, are unlikely to meet their goals unless we first ask basic prior questions on the goals and objectives of the subsidies in the first place. Second, it is critical to work out the complementary state actions that will ensure that cash transfers serve their purpose. If cash transfers are seen as a substitute for state actions, they are unlikely to achieve their long-term goals. For instance, if beneficiaries use their additional income through cash transfers to buy goods and services

from private actors, state actions in improving market infrastructure, be it access to roads or rural supply chains, would ensure that poor buyers will face more competitive markets and therefore get greater value for their money. Third, in every case, cash transfer proposals must have a well-worked out temporal dimension. In other words, we must carefully consider possible exit options under which cash transfers might wane or cease, as beneficiaries' status changes, programme objectives are met, or critical effects urge a rethink of the direction of the strategy and its interaction with other priorities. Therefore, unless sunset clauses or incentives are built into the cash transfer programmes that incentivise beneficiaries to move out of them, there will be a natural lock-in effect. Policy interventions and their protagonists have a much clearer sense of where to begin, but seldom (and often understandably so) think through how and when it is going to end. Programmes of this nature are inevitably unpredictable, but as we undertake these major shifts in how we allocate resources and implement development schemes, we would do well to remain aware that the political economy within which we operate ensures that it is easy to enter but much more difficult to exit once we have committed to certain tactics and broader strategies. All transfers create powerful interests, but cash perhaps most of all.

Preconditions for Cash Transfers

As countries around the world seek better ways to improve the well-being of their citizens the successes of Bolsa Familia in Brazil and Progressa (and its successor, Oportunidades) in Mexico have made cash transfers an attractive option in the portfolio of options available to governments. A critical facilitator in this shift has been the phenomenal innovation in digital information systems which in addition to cash transfers have potentially large externalities for other applications, including access to savings accounts and other financial services, voting registration, and generally in streamlining documentation (Gelb and Decker 2011).

Any cash transfer programme must include two basic elements – unique personal identification to robustly confirm a person's

ID and a mechanism for delivering payments. The system of identification used for a programme must be robust enough to support it successfully, and might be nationwide or a specific instrument of the transfer programme. While biometrics cannot eliminate all types of leakages from social protection systems, such as those related to income-directed targeting, they can reduce “ghost” payments – for example, the introduction of biometric registration in Andhra Pradesh showed some 12% of social transfer recipients to be non-existent in a state programme considered as one of the best-run in India (Johnson 2008). They also create an auditable trail. Payments can either be distributed periodically to recipients, as a “pull” system, or as a “push” system, which involves deposit of payment into a bank account and is more flexible. For the latter, biometric identification is crucial to ensure distribution of funds to the correct person, and provide a record of the transaction (Gelb and Decker 2011).

However, these systems cannot address a key weakness in any poverty programme, namely eligibility. This is particularly the case in India where there is a high density of population with income close to the poverty line.

In addition the design of CT programmes will have to confront a range of questions – how much cash is to be transferred, at what frequency, how should the beneficiaries be identified, should it be to an individual or a household and if so to whom within the household? Should the transfers be unconditional or conditional, and if the latter based on what? How does one ensure that CTs do not exclude the deserving or get captured by the undeserving? What are the incentive effects of cash transfers and are they likely to be different from subsidies? For instance will CTs discourage labour supply or instead increase participation by relaxing constraints on mobility and enabling small-scale business ventures?

These are undoubtedly difficult questions. But while they will have to be addressed if CT programmes are to succeed;

at the same time the alarming increase in the cost of subsidies – around Rs 95,000 crore for the three items in 2009-10 (Table 1) – and the substantial opportunity costs of these resources has rendered the need to find more effective alternatives ever more urgent. It is in this spirit,

Table 1: Annual Subsidy Spending on Petroleum Products and Fertilisers (2001-2010) (Rs crore)

Year	PDS Kerosene	Domestic LPG	Petrol	Diesel	Fertiliser	Food
2000-01	7,522	6,724	0	7,522	13,811	12,010
2001-02	5,310	5,830	0	5,310	12,596	17,494
2002-03	3,018	5,760	5,225	3,018	11,015	24,176
2003-04	3,751	9,158	6,292	0	11,847	25,181
2004-05	10,627	10,146	150	2,154	15,879	25,798
2005-06	15,441	11,851	2,723	12,647	18,460	23,077
2006-07	18,853	12,255	2,027	18,776	26,222	24,014
2007-08	20,080	17,186	7,332	35,166	32,490	31,328
2008-09	29,199	19,314	5,181	52,286	75,849	43,627
2009-10	18,321	16,071	5,151	9,279	61,264	52,490
2010-11 (Prov.)	20,496	23,999	2,227*	34,384	54,977	60,600

*Under recovery on petrol is only up to 25 June 2010.

Sources: MoF; Indian Public Finance Statistics: 2009-10, Table 7.8, India Expenditure Budget, Vol I: 2011-12, p 19.

then, that we can examine the two proposals that the central government is actively pursuing, namely, to substitute massive subsidies for fertiliser and kerosene with cash transfers to beneficiaries.

Fertilisers and Kerosene

Fertilisers¹: In India, the fertiliser subsidy had three major goals: (1) increase food grain output, thereby lowering prices and enhancing food security; (2) ensure reasonable returns for farmers from fertiliser use; and (3) help increase the domestic production of fertilisers by ensuring a reasonable return to the fertiliser industry. Historically, the prices of fertilisers in India have been kept below the cost of production and imports, with a subsidy filling the gap between the cost of production/imports plus distribution costs and their retail prices.

These policies have led to a dramatic increase in the use of chemical fertilisers and concomitantly subsidies have grown exponentially during the last three decades from a mere Rs 60 crore during 1976-77 to Rs 61,264 crore in 2009-10. The domestic production of fertilisers spurted in the 1970s when the Indian government encouraged investment in domestic fertiliser production plants in order to reduce dependence on imports. It introduced a “retention price” subsidy in 1975-76 which led to a sharp increase in domestic capacity and

production between the mid-1970s and the early 1990s. The total production of N and P_2O_5 rose from 1.51 million and 0.32 million tonnes, respectively, in 1975-76 to 7.3 million and 2.6 million tonnes in 1991-92 and 11.9 million tonnes and 4.35 million tonnes by 2009-10.² Amongst the large agricultural economies, Indian now has one of the highest rates of fertiliser use per unit arable land (barring China which is substantially higher) although there is wide variation across states (Table 2).³

Table 2: Fertiliser Consumption (2008)

Country	Kg/hectare of Arable Land
Argentina	39
Australia	34
Brazil	166
Canada	57
China	468
India	153.5
United States	103

Source: World Bank.

The current nutrient-based subsidy (NBS) is given on four major nutrients – nitrogen (N), phosphorous (P), potash (K) and sulphur (S) and is the difference between the cost of fertilisers (whether domestically manufactured or imported) and their maximum retail price. While the fixing of NBS rates appear transparent and rule-based, the most consumed fertiliser – urea – is excluded.

How should we approach the proposal to provide cash transfers to farmers in lieu of subsidies to the fertiliser industry? Given that this is a subsidy that was intended not only as an input-support to individual farmers, but as a subsidy vital to both the agriculture sector as a whole and to the domestic fertiliser industry, we must consider the implications of this shift at multiple levels.

Industry: Since an important rationale of the fertiliser pricing regime was to promote and protect the domestic fertiliser industry, a simple shift to cash transfers to users will have major implications. Currently the production costs vary considerably between the gas-based plants located at gas landfall sites (such as Kribhco at Hazira and Nagarjuna Fertilisers at Kakinada) which can access the cheapest gas, those gas-based plants which incur additional costs of pipeline transport and taxes or even buy merchant liquefied natural gas (LNG) at very high rates and the highest

cost plants (more than double) running on naphtha and fuel oil. This is one reason why urea was excluded from the NBS.

The substantial variances in production costs of fertiliser plants mean that the loss of subsidy will have major implications for producers. One possibility is that several plants will have to shut down, and the difference will have to be compensated through imports. Alternatively, uniform gas/feedstock prices would have to be ensured to all plants through a “pooled” feedstock price and then the MRP of urea can be freed up as well (as it has been done for DAP, MOP and other non-urea fertilisers). An even better alternative might be to subsidise a gas-pipeline infrastructure and close down the high-cost naphtha plants if they do not convert to gas feedstock. It is a mystery exactly why the Indian government subsidises plants whose costs of production are more than double world prices and then laments the high costs of fertiliser subsidies, instead of arranging for long-term fertiliser imports and depending on domestic plants based on gas feedstock.

Agriculture: Fertiliser promotion and use was one of the key components of the green revolution package of inputs and practices, which collectively have been widely credited for India attaining food-grain security through a huge increase in agricultural production, albeit regionally-concentrated. Importantly, over this time, while fertiliser consumption has continued to rise substantially, the elasticity of output with increased fertiliser inputs has been dropping sharply. While the average crop response to fertiliser use was around 25 kg of grain per kg of fertiliser during the 1960s, this fell to only 8 kg of grain per kg of fertiliser by the late 1990s. Between 2000-01 and 2009-10, while annual fertiliser consumption in India grew by over 50%, foodgrain output grew by just 11%.⁴ This is simply one facet of the broader decline in the total factor productivity growth rate in Indian agriculture in recent years. Of equal concern are the serious negative externalities in terms of environmental costs associated with excessive fertiliser use, sadly apparent in areas that have experienced long periods of intensive application of fertilisers. In addition to its impact on soil quality, the most severe consequence of fertiliser

use is on highly stressed water resources. Fertilisers not only increase water consumption, affecting the quantity of water available for different uses, but are also a source of pollution, affecting water quality. As India considers its options regarding the fertiliser subsidy and its objectives, it is important to fully understand the effects that the over-use of fertiliser in certain parts of India have had not only on agriculture and its sustainability, but on the availability and quality of water for household and industrial purposes.

Users: Even if we get past the larger implications for industry and agriculture, substituting the fertiliser subsidy with a cash transfer to the end user, that is, to the farmer, poses major administrative challenges. After all, it is one thing to organise payments to a couple of dozen firms and plants, but quite another to do so to several hundred thousand retailers selling fertilisers, and an even greater leap to several tens of millions farmers.

The first option would be to give farmers a straight, unconditional cash transfer with market-determined fertiliser prices. But as we note below, this is anything but straightforward. A second option could be to give farmers coupons and transfer the cash payments to the retailers for each bag of fertiliser sold. The latter would be akin to a proposal earlier mooted by IFFCO based on a Radio Frequency Identification Device (RFID)-enabled mechanism in which the farmer has to just swipe a smart card through the reader terminal of a bank and get the subsidy amount directly credited to his account. When the farmer produces his RFID-enabled smart card after making the necessary payment, the tag code is transferred from the bag to the card. He can then swipe this card at the bank and get the underlying subsidy directly credited to his account.⁵ In effect this amounts to an electronic coupon being given to the farmer which can only be used to buy fertilisers.

Clearly, new IT-enabled technologies now allow for creative solutions to try to solve the challenges of administering such CTS. Unfortunately, these mechanisms, no matter how well designed, will be unable to address several more fundamental issues in the case of fertilisers, starting with the question: how will a farmer be identified? This is especially difficult since the application

of the usual criteria for identification in other targeted cash transfer programmes (such as below the poverty line (BPL) persons) does not work for fertilisers, which are consumed most heavily by middle and large farmers. Landownership is also a problematic criterion since it would exclude the significant proportion of tenant farmers. How, moreover, will the extent of subsidy for each farmer be determined? Should it be capped so that the transfers to large farmers are limited? And, finally, how can this mechanism be used to persuade farmers to use less fertiliser and instead use the money for other goods and services to augment farm productivity (such as investments in drip-irrigation or better seeds). For the latter shift to occur, the fertiliser-linked smartcard coupon system should be viewed as an intermediate step to a more flexible full cash transfer system that allows for the purchase of any agricultural input and subsequently for more general farm/rural income support.

Kerosene⁶: The rationale for subsidised pricing of kerosene was to provide cheap fuel where electrification was not prevalent. But it is given to all ration cardholders as a cooking fuel as well. Thus, even in states where electrification is widespread, kerosene is offered at highly subsidised prices. Kerosene played little role as an energy source for cooking in rural India and even in urban India its role has been modest. In both cases the use of kerosene for cooking has dropped to negligible levels in rural India and minor levels in urban India. The all-India proportion of rural households whose primary source of energy for cooking was kerosene fell from 2.0% in 2001-02 to 0.6% in 2007-08 while for urban households it fell from 15.3% to 7.6% during the same period (Table 3).

Kerosene has, however, been a more important fuel source for lighting. While there

is considerable variance across states, the proportion of rural households across India whose major fuel for lighting was kerosene fell from 47.2% in 2001-02 to 38.6% in 2007-08, while for urban households it fell from 7.8% to 5.1% during the same period (Table 3). There are currently around 70 million households (overwhelmingly rural) in India which use kerosene as a fuel for lighting applications.

While subsidies for kerosene are somewhat less than fertiliser subsidies, the distortions are perhaps even more severe. India has by far the lowest price of kerosene in south Asia, between a third and half of its neighbours. While the subsidy intends to shield poor households from volatile prices and provide a stable supply of fuel, the large price wedge between kerosene sold through the public distribution system (PDS) on the one hand and petrol and diesel on the other has created a large black market in which cheap kerosene ostensibly meant for the poor is diverted and mixed with petrol and diesel. A study by the National Council of Applied Economic Research has estimated that total leakage/diversion of kerosene meant for distribution under PDS as 38.6%.⁷ This not only deprives the poor of their entitlements and the public exchequer of valuable resources, but also greatly increases pollution from the adulterated petrol/diesel and fuel-related crime. The murder of Additional District Collector Yashwant Sonawane in Maharashtra earlier this year was a brutal testimony to the thriving oil mafia in Maharashtra. With kerosene subsidies exceeding Rs 20,000 crore, a nearly 40% rate of illegal diversion implies criminal pickings of Rs 8,000 crore! No wonder Petroleum and Natural Gas Minister Jaipal Reddy has stated that de-control of kerosene prices is not politically and practically feasible. This diversion of subsidised kerosene means not only that

the government is subsidising criminal elements, but also that the consequent heavy use of kerosene in adulterating diesel considerably increases pollution levels and the carbon footprints of the country.

Let us assume that the government successfully executes a cash transfer programme that exactly identifies all BPL households and provides them with the cash equivalent of the subsidy while raising the price of kerosene to market determined rates. This would have considerable effects on reducing criminality as well as pollution levels, which alone would justify the switch. The subsidy level would also go down because of better targeting, but perhaps not markedly since households will be provided with the equivalent cash. However, if the cash transfer amount is held constant and oil prices surge, then the effective subsidy would indeed decline compared to the counterfactual current subsidy regime.

While this would certainly be a major improvement, it would neither address India's dependence and vulnerability on petroleum imports nor the fiscal pressures on the government. With most of India's poor using kerosene for lighting rather than cooking, might it be better to scrap the PDS kerosene and instead of moving to CTS simply provide all rural households and urban BPL households with solar lanterns?

Solar Lanterns

Solar lighting is one promising energy alternative for India's vast population remaining off the grid. The average number of sunny days in India ranges from 250 to 300 days a year, with a solar energy equivalent greater than the country's total energy consumption. Solar lanterns, which make the most of the country's natural and abundant sunshine, could be a practical and clean energy alternative to kerosene lamps in village communities.

Economic comparisons of the life cycle cost analysis of a kerosene wick lamp and a reliable solar lantern show the manifold advantages of a solar lantern over a kerosene wick lamp/lantern. Agoramorthy and Hsu (2009) studied the effects of using solar lanterns on energy usage, household savings in terms of kerosene and electricity costs, as well as the family's quality of life. Overall, the introduction of solar lanterns led to reduced expenditures on kerosene and

Table 3: Changes over Time in Distribution of Households by Primary Source of Energy Used for Cooking and Lighting: All-India

Location	NSS Round	Year	Percentage of Households				
			Cooking				Lighting Kerosene
			Firewood and Chips	LPG	Kerosene	Other	
Rural	64	2007-08	77.6	9.1	0.6	12.7	38.6
	61	2004-05	75.0	8.6	1.3	15.1	44.4
	57	2001-02	73.4	8.1	2.0	16.5	47.2
Urban	64	2007-08	20.1	61.8	7.6	10.6	5.1
	61	2004-05	21.7	57.1	10.2	11.0	7.1
	57	2001-02	23.3	49.9	15.3	11.7	7.8

Source: Tables P15 and P18, National Sample Survey Organisation (2010): "Household Consumer Expenditure in India, 2007-08: NSS 64th Round" Report No. 530, Ministry of Statistics and Programme Implementation, Government of India, March.

electricity. Households' savings ranged from Rs 6,640 to Rs 11,070 annually. While households APL and below the poverty line (BPL) used a similar amount of electricity before the lanterns were introduced, after their introduction households BPL spent significantly less on electricity than the APL households. In addition, solar lanterns particularly benefited school-aged children and women. Though 70% of India's villages are ostensibly connected to the power grid, actual availability of power is scarce early in the morning or in the evenings when it is most needed in rural households. However, with the six hours of light supplied daily by the solar lanterns, children's performance at school improved, and women were able to carry on household work both indoors and outdoors even without power.

Currently, solar lanterns cost around Rs 2,000 and have a life cycle of 3-5 years. Suppose the government provides one solar lantern each to 100 million households. That would cost Rs 20,000 crore, slightly less than the PDS kerosene subsidies. But while expenditures for the former would at most be incurred periodically, the latter is an annual albatross that cannot be easily shaken off. More importantly, while the price of kerosene is only likely to go up in the long run, that of solar lamps is only likely to go down. Such a shift would also reduce India's carbon footprint. In addition such a move offers the possibility of giving a major boost to India's nascent solar power industry. If the government were to make purchase commitments with pre-specified amounts and efficiency parameters on the lines suggested for vaccines (Kremer 2002), while insisting on domestic production, there would be a huge private response with spillover effects to other aspects of solar power and critically would provide a powerful boost to India's efforts to develop "green" industries.

Admittedly, this would not address the use of kerosene for cooking purposes. But at a minimum the savings from not having to pay even for PDS kerosene could underwrite the additional costs incurred in the purchase of market-priced kerosene for cooking.

Conclusions: From Tactics to Strategy

This article has examined the proposals to substitute fertiliser and kerosene subsidies with cash transfers to the end users. In both

cases, a close examination of the objectives of the subsidies in the first instance and the implications of the shift raises some challenging questions. While there is no doubt that India will have move to a greater use of CTS instead of subsidies (as it is already happening albeit under different guises), that may not necessarily be the best option in all cases. In particular, as I argue in this concluding section, unless discussions on transfers – be it subsidies or cash transfers – are part and parcel of a broader strategy they will simply amount to tactical differences and not address long-term challenges.

The three items that are the focus of the budget proposals (fertiliser, kerosene and LPG), I suggest, are not only important for the high (and mounting) costs on the budget or the high opportunity costs of these resources, or even for the multiple distortions that have been widely discussed and examined. Rather they constitute two of the most singular challenges that India has faced in the past and will undoubtedly face even more in the future: food and energy security, both at the national level and – for the hundreds of millions of India's poor – at the household level as well. It is for this reason that this article argues that the cash transfer proposals in the budget are ultimately limited to thinking about tactics and not about larger strategies, in particular on how we should think about long-term food and energy security. Starting from the vantage point of strategy, it is not clear that a cash transfer is the appropriate policy option in the case of kerosene subsidies, and in the case of fertilisers there are a host of implementation challenges and long-term environmental ones. While there are creative options that could address the inevitable implementation roadblocks, it would be much more valuable if we use the process initiated by the shift to cash transfers as a proverbial Archimedian lever: one that opens more imaginative possibilities in addressing India's mounting agricultural and energy challenges. Ultimately, the promise of cash transfers can only be fully realised if complementary actions in rebuilding public systems and market infrastructure are undertaken – they are not a substitute per se. At the same time, keeping our long-term strategic priorities in mind, we must be

willing to consider – and of course thoroughly debate – bold changes in our policies.

In the case of agriculture and food, by affording self-sufficiency in grain production (as distinct from food per se) such overwhelming priority, India has increased both its external and internal vulnerabilities, the former due to its increased dependency on energy imports and the latter due to growing pressures on its water resources. Should India be willing to consider a modest shift – albeit at the margin – to increase external sourcing of fertilisers and grain as an important part of India's long-term strategy and foreign policy? In the case of fertilisers, this might mean a more concerted state-driven effort to build fertiliser plants in countries with abundant natural gas resources and low levels of industrialisation, especially in Africa and west Asia. There have been some attempts in this direction, especially after 2008 when the Government of India announced that it would encourage joint-venture projects abroad in gas rich countries through firm offtake contracts. The government has been pursuing joint venture projects in urea in Saudi Arabia, Qatar, Ghana, Mozambique and Oman and in phosphoric acid in Jordan and Tunisia. But to date there has been only one successful JV.⁸ The current pricing dispute between the Indian government and Canadian producers on potash imports is emblematic of what the future portends unless India moves beyond a short-term transactional approach to its long-term challenges.⁹

Modelling simulations suggest that India will have to become a large net importer of foodgrains if its ambitions to grow at current rates are to be realised. Consequently, despite scepticism in the government (see Basu 2010), India will have to begin to think of creating a market for long-term option contracts of 10-15 years on grain imports, focusing on the largest producers whose long-term political stability and production capacity is not in doubt. The latter must also take into account the projected effects of climate change on grain production which appears to be already having negative effect on crop yields in north India (Kalra et al 2008). This group includes Argentina, Australia, Brazil, Canada and the United States. In some cases this would mean dealing with large firms, but it should be part of state-to-state bilateral

agreements and therefore of foreign policy as well. State engagement would be even more necessary in other cases (Russia, Ukraine and possibly Kazakhstan), where India could seek agreements to lease land for Indian farmers. In principle, then, we must be willing to think through whether there are sufficient reasons why such contracts may not be feasible and offer a better substitute than the current insurance mechanism of keeping high grain stocks. It is possible that the former will be more expensive financially. However, it may also result in less strain on India's increasingly constrained natural resources, especially land and water whose opportunity cost in India is high and will continue to increase in the future. Can we then also think of a simultaneous and strong commitment to India's farmers, which creates the enabling investments and conditions through both public and private initiatives to promote agricultural production in crops essential to India's nutrition security and well suited to our agro-ecology, such as pulses, and as well as those responsive to the growing and diversifying diets of the Indian population?

Rethinking Indian Agriculture

The larger point is that the substitution of fertiliser subsidies by CRTs will only yield benefits if it is part of radical rethinking of Indian agriculture just as what occurred in the mid-1960s. At the margin India should de-emphasise grain production (which now gets the vast majority of subsidies) while favouring other agriculture crops/activities. What if the incentives that are now given to farmers in Punjab and Haryana were redirected to pulses and oilseeds? Growing rice intensely in those water scarce areas is a colossal misuse of scarce water resources and increasing production of pulses is very important for India, since while it is at least conceivable that the country can import grain, no one else in the world produces pulses in the varieties and extent that it needs as a critical source of proteins. Since there is an opportunity cost of land and water for any crop, India needs to rethink carefully whether it should continue the current usage pattern (favouring wheat and rice over everything else) or instead – but again at the margin – should it use its limited natural resources for pulses, oilseeds, vegetables (which is a

labour intensive activity and therefore in tune with the country's endowments)?

For nearly half a century policymakers in India have persisted with variations of the green revolution model despite mounting evidence of its declining utility. At the time the decision to bet on the new seed technologies with concomitant large inputs of water and fertiliser was a bold and risky move. But it paid off handsomely – at least for many decades. Today India needs similar policy boldness, whether it is large investments in bio-technologies or second-generation cellulosic ethanol that uses agricultural waste, while simultaneously rebuilding the public agricultural universities and extension systems that have for the most part fallen by the wayside and are critical for the dissemination of new technologies and practices.

In addition to the fiscal costs and production/output effects, the current debates about subsidies are also – and necessarily so – about the reality that more production alone does not (and clearly has not) guaranteed more access. This after all was the rationale of the PDS. And it is here perhaps that over the long-term, as market infrastructure improves and production stabilises, that CRTs should be seen as basic income support for the poor, allowing them to make their own choices more effectively. It is only when India is capable of a new strategic vision in energy and food security that the promise of cash transfers – implemented through basic income support for deserving households rather than simply piecemeal alternatives to subsidies – will bear full fruit.

NOTES

- 1 This section draws considerably on the insights and deep knowledge of Harish Damodaran to whom I owe much gratitude.
- 2 Ministry of Chemicals and Fertilisers, Department of Fertilisers, *Annual Report 2009-10*, Annexure V.
- 3 Government of India: "Integrated Nutrient Management (Fertilisers)", accessed 20 April 2011. Available: <http://india.gov.in/sectors/agriculture/fertilisers.php>.
- 4 "Fertile Field for Reform" (2010), *Hindu Business Line*, December 3.
- 5 This discussion draws from Harish Damodaran, "Pay Fertiliser Subsidy Through Swipe Card: Ifco Favours Crediting Amount to Bank Account Through RFID", *Hindu Business Line*, 4 July 2007. According to IFFCO estimates each of the roughly 80 crore fertiliser bags would have a distinct RFID tag, bearing a unique code specifying the manufacturer's name, date of production, nutrient content of the fertiliser, subsidy payable, etc. The tag itself costs about Rs 2 per bag and is robust to weather and transport and handling.

- 6 The discussion in this section draws heavily from research and insights of Radhika Khosla of the National Resource Defence Council for which I am deeply grateful.
- 7 "NCAER Estimates 38.6% of PDS Kerosene Leaked/Diverted by Unscrupulous Elements" (2011), Media Release, March 10. Available: <http://parimalnathwani.com/images/in-the-parliament-mr/rsq-media-release-10-march11-eng.pdf>
- 8 This is the OMIFCO Project in Oman in which the fertiliser cooperative IFFCO and KRIBHCO each have a 25% equity stake. The 15-year long-term urea offtake contract with OMIFCO has resulted in savings of nearly one billion dollars in the last four years according to official estimates.
- 9 See Potash Corp "Holds Firm in Pricing Dispute with India", *Financial Post*, 28 April 2011. Available at: <http://business.financialpost.com/2011/04/28/potash-corp-holds-firm-in-pricing-dispute-with-india/>

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