Transforming Indian Agriculture: By Loving Some Agriculture Less and the Rest More

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Dear Dr. Mohapatra, Professor Panjab Singh, Dr. K.V. Prabhu, distinguished Members and Fellows of the National Academy of Agricultural Sciences, and Friends,

1. Background

It is an honour to be here today to deliver the Foundation Day Lecture – 2017 which also, appropriately, the World Environment Day. The topic I have chosen does not need any justification either in terms of its contemporary or historical importance. The Government has made doubling farm incomes as one of its top policy priorities. To this end, it has taken a number of important policy actions to boost agriculture: instituting soil health cards, emphasizing efficient irrigation, strengthening government procurement of pulses, introducing neem-coating of urea, building more assets under MGNREGS, expanding crop insurance for farmers, and building a common agricultural e-market via e-NAM.

The historical salience derives from the fact that this is the one hundredth anniversary of the Champaran movement. The first salvo of satyagraha was fired by the Father of our Nation on behalf of farmers, the indigo farmers oppressed and exploited by colonial rule. Perhaps as a result, the farmer has acquired a mythic

status in Indian legend: pure, unsullied, hard-working, in harmony with nature and yet poor, vulnerable and the victim, first of the imperial masters and then of indigenous landlords and middlemen. Bollywood (and Kollywood and Tollywood), has of course, played a key role in creating and reinforcing the mythology of the Indian farmer (I have in mind movies such as *Mother India, Do Beegha Zameen, Upkaar*, and more recently *Peepli Live* and even *Lagaan*).

To support and protect the farmer is also a professed ideology and mantra of politicians of all stripes and all times reflected, for example, in the periodic granting of loan waivers and the perennial lure of announcing free power.

But the question I want to pose today is this: has this mythological status actually come in the way of really being good to him?

2. Why Agriculture Matters: An Irony

The reasons that agriculture matters are well-known: it provides sustenance to so many, food to all, and employment to many. In addition to these intrinsic positive reasons to invest in agriculture, there are other instrumental reasons: poor agricultural performance can lead to inflation, political and social disaffection, and restiveness— all of which can hold back the economy. There are intrinsic as well as instrumental reasons for prioritising agriculture.

But we must be clear and honest about one important link. The Nobel Prize winner, Sir Arthur Lewis, showed that economic development is always and everywhere about getting people out of agriculture and of agriculture becoming over time a less important part of the economy (not in absolute terms but as a share of GDP). But this must happen along with rapid productivity growth, ensuring rising farm incomes and adequate food supplies for the people. The reason why agriculture cannot be the dominant source of livelihood is that levels of productivity and hence living standards can never approach— and have historically never approached— those in manufacturing and services. That, of course, means that we must get our industrialization and urbanization right for the alternatives to agriculture to become meaningful, prosperous alternatives.

When Dr. Ambedkar, famously derided the village as "a sink of localism, a den of ignorance, narrow mindedness and communalism," he was perhaps on to a deeper truth— an Indian social complement to the Lewisian economic insight— that in the long run people need to move and be moved out of agriculture. Dr. Ambedkar was warning about the patronization of agriculture masquerading as a romanticization of rural India.

So the irony is this: we must care deeply about farmers and agriculture today because we want there to be fewer but more productive and prosperous farms and farmers tomorrow.

In other words, all good and successful development is about facilitating this transition in the context of a prosperous agriculture and of rising productivity in agriculture not least because that will facilitate good urbanization and rising productivity in other sectors of the economy.

So, today, I am going to provoke to force us all into collective self-reflection on the state of agriculture and its future. It is easy for me --or for anyone – to list 10 or 20 different things that need to be done to improve our agricultural performance: stem the deterioration in agricultural research, educational, and extension institutions, improve resilience, incentivize drip irrigation, etc. But it is as easy to list them as it is perhaps useless. Because for any improvement or reform that all the experts recommend, we have to ask the simple question: "If that is so obviously good for agriculture why hasn't it happened already"? Or, put differently, "What it is about today that will make these proposals successful when they have demonstratively failed to persuade in the past?"

Rather, I want to ask a question or tentatively pose a hypothesis: is it possible that we actually love some crops (cereals) and their farmers too much and, for all the pious professions and mythologizing, and other crops and their farmers not enough. To put it more bluntly, perhaps we are now smothering cereals with too much government support and other crops—pulses, dairy, oilseeds, livestock, and fruits and vegetables—not enough?

3. The Successes

Before I elaborate on the main themes of my talk today, I would like to take stock of our achievements and shortcomings in agriculture. Given where we began in 1947, Indian agriculture has come a long way. We have achieved food security – at least on the major crops; rural poverty rates have declined substantially; agricultural incomes have risen; nutrition levels have risen.

In terms of successes, I would highlight the following:

The green revolution transformed Indian agriculture by increasing yields of wheat and rice, especially in Northern and then in Southern India. Credit here goes to international research but perhaps even more so to Indian scientists, agronomists and researchers, extension workers in public institutions that completed the link from technology to actual farm output.

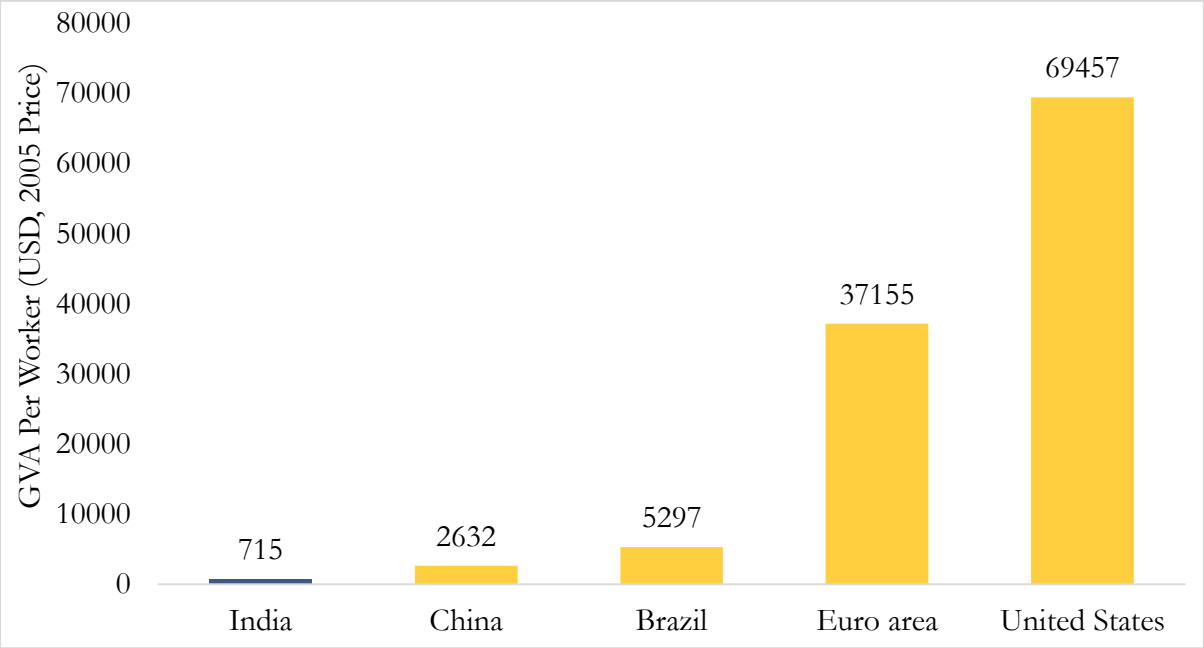
The white revolution that transformed the Indian dairy sector, increasing milk production, reducing dependence on imports, creating vibrant and participating institutional structures on agriculture and founding a vibrant consumer goods industry based on diary. Credit here goes, of course, to Dr. Kurien, leader of the Kheda Cooperative movement, and enlightened leadership of the NDDB.

In addition to these sectoral successes, there have been, other regional achievements-- cotton in Gujarat, Maize in Bihar, Sugar in Uttar Pradesh, wheat in Madhya Pradesh, potatoes in West Bengal.

4. Glass Less-than-half Full

But (and you knew a but was coming), despite these successes, the honest story here is one of the glass being less than half – full. Two statistics support my assertion: overall agricultural labour productivity is less than a third of that in China and about 1 percent of that in the frontier countries. Land productivity (measured as yield per hectare) is also well below the frontier. For example, in the case of rice, Indian yields are about 50% of those in China and one-third those in the US.

Figure 1. Overall Agricultural Productivity: Still Very Far From Frontier

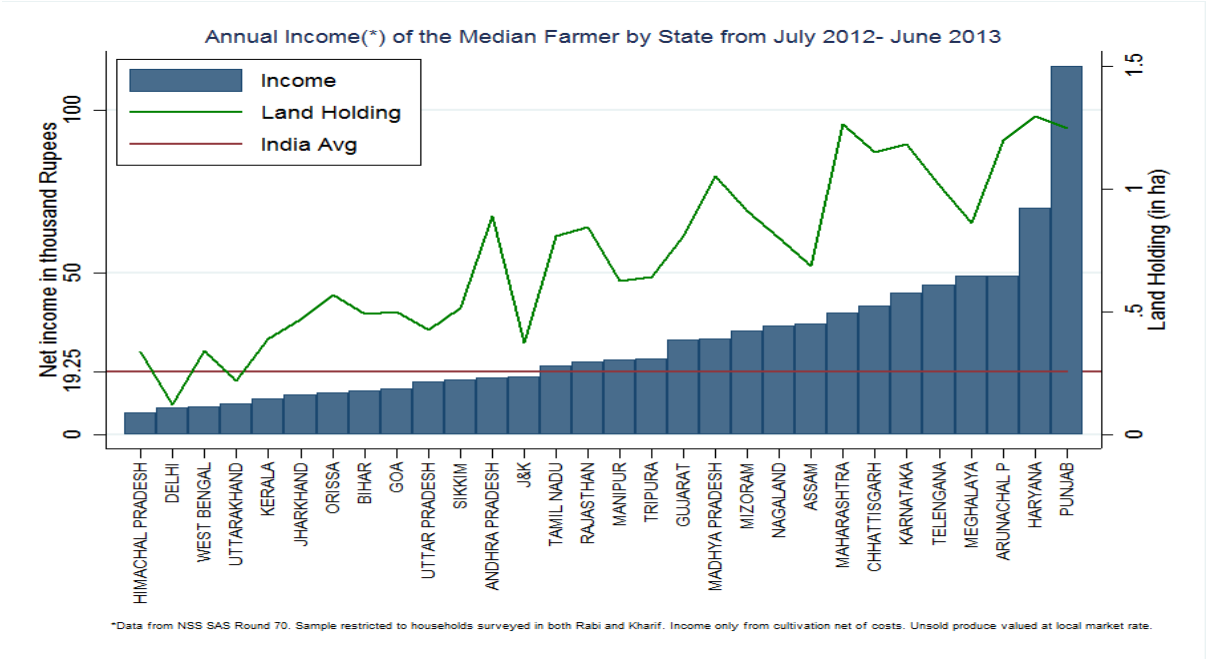


Second, agricultural incomes (as measured by income from cultivation, net of cost and unsold produce valued at local market rates) are still meagre.[1] The median household net farm income was about Rs.19, 250 in 2012-13 or about Rs. 1600 per

[1] Data based on Agricultural Situation and Assessment Survey, NSS for 2012-13.

month, which is not very far above the poverty line. To be sure there is enormous variation, but the truth is it simply does not pay to be a farmer in India.

Figure 2. Agricultural household income

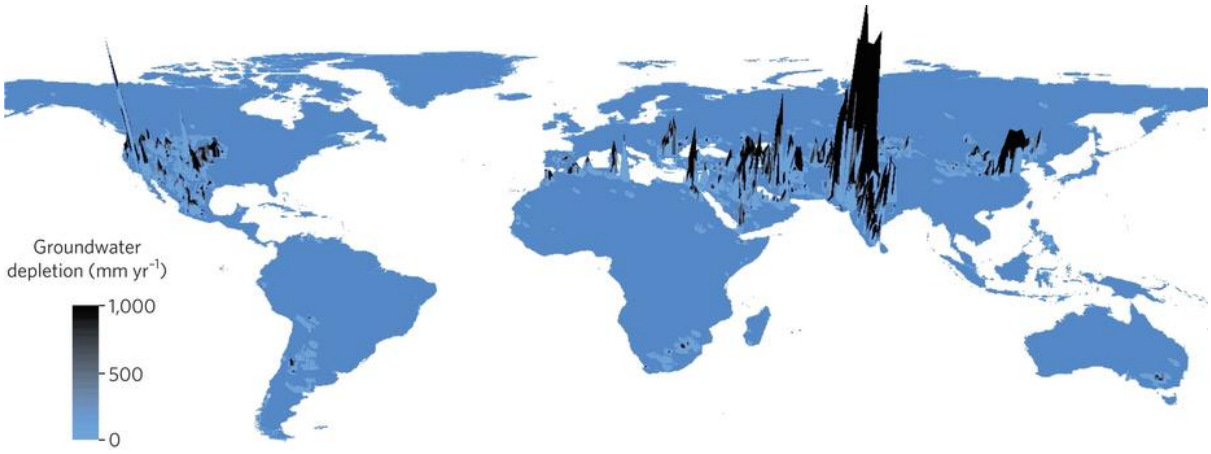


5. The New Malthusian Challenge

Before I elaborate on my central hypothesis, I just want to alert you all to the new and serious challenge: raising agricultural productivity and reducing vulnerability are going to get harder because of what I call the re-emergence of the Ghost of Malthus. The four key agricultural resources: atmosphere, water, land, and soil quality are all moving in very unfavourable directions. Climate change will reduce agricultural productivity and increase variability (all the models show a disproportionate impact on Indian agriculture); water is becoming perilously scarcer for climactic reasons and because of over-use and misuse domestically,

especially in Punjab and Haryana (as Figure 3 shows); soil quality is depleting, and the pressures on land are mounting as population surges and alternative uses are becoming more attractive.

Figure 3. Ground Water Depletion



6A. Smothering with love: Cereal-Centricity

Think of how and how much we support cereal and especially rice production. They are too numerous to exhaustively enumerate. The government helps the farmers through policies that affect the prices of outputs and inputs; through schemes and through institutions.

We provide minimum support prices to farmers and the benefits accrue mainly to farmers who produce marketable output and that too mostly in cereals and wheat,

which in turn is confined largely to a few States, notably in the North (Punjab and Haryana).

We then provide subsidies for power, water, fertilizer (now the second largest subsidy), seeds, credit, we exempt agricultural income from income taxes, and we periodically grant loan waivers.

Look again at Figure 2 and see how clearly agricultural incomes in Punjab and Haryana exceed those in the rest of India to get a sense of this biased smothering with love.

6B. Smothering with love: Big not Small Farmers

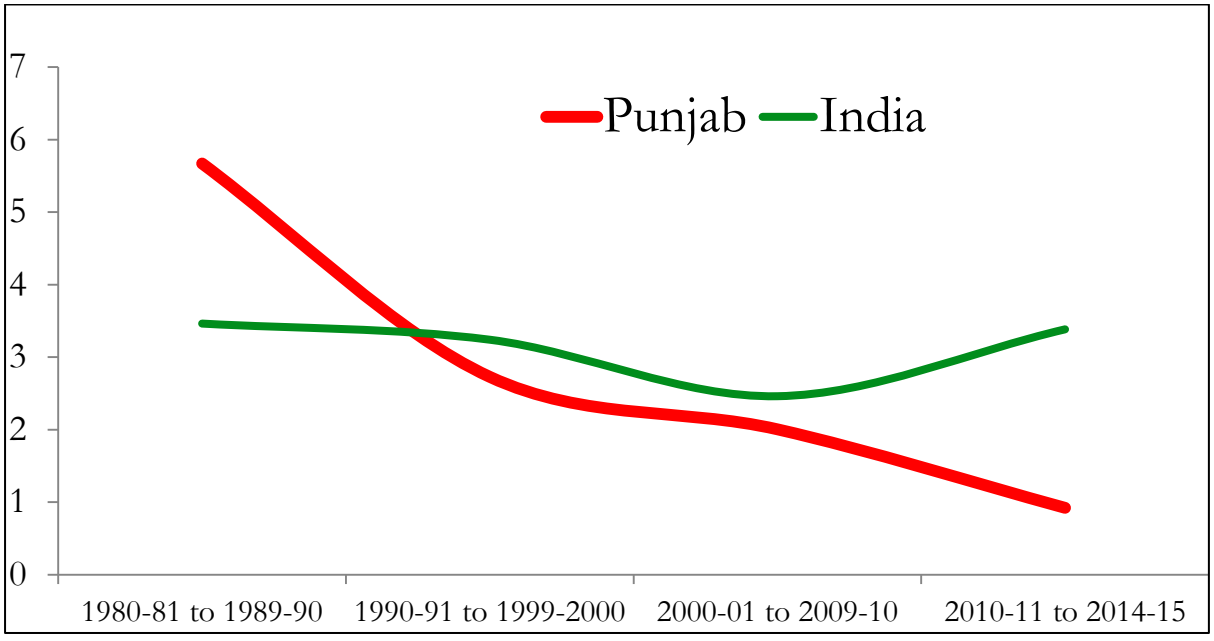
There is a second aspect to this smothering with love: not only does it mainly benefit the cereal farmers, it also tends to favour larger farmers, or at least it does not adequately reach the smaller farmer.

Several examples: by definition, the exemption of agricultural income from tax favours those with larger incomes. In fertilizer, we estimated in the Economic Survey that only about one-third of the total subsidy went to small and marginal farmers. On agricultural credit, there is now growing evidence that not all of this goes to farmers. On the loan waiver, it is surprising how little the small and marginal farmer borrow from formal financial institutions (less than 50%) and how much from informal sources, while the large farmer relies on formal sources to the

extent of about 75%; on power, we estimated in the Economic Survey that the bottom quintile received about 10% of the total subsidy while the top quintal about 37% because of highly skewed electricity consumption.

But is there something as loving too much? The experience of Punjab is perhaps suggestive. Thanks to support, incomes are high and amongst the highest but there is growing evidence that this is proving now to be counter-productive. Punjab has lost most of its earlier agricultural dynamism. Between 1971-72 and 1985-86, agricultural growth was 5.7% percent compared to the All-India number of 2.3 percent. Since 2005-06, its average agricultural growth has declined to 1.6% compared to India's 3.5% (Figure 4).

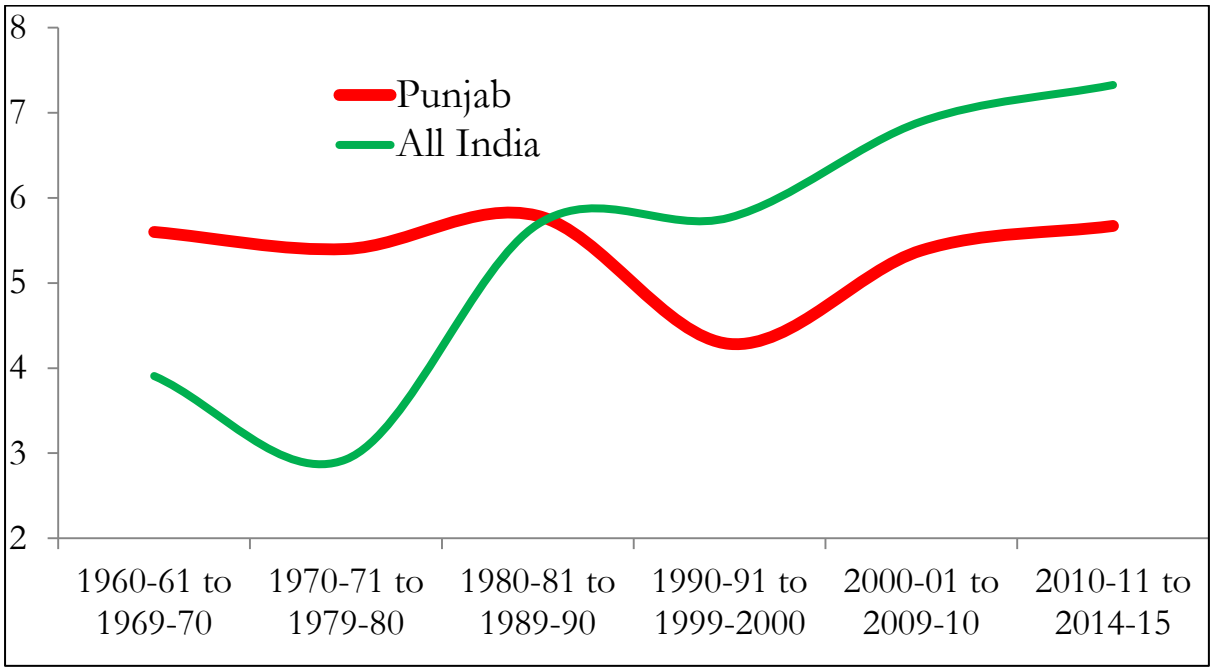
Figure 4: Agricultural Growth in Punjab and India (Average decadal, %)



Consequently, overall dynamism has suffered as its overall growth has slipped from being substantially above the Indian average to well below (Figure 5) and

Punjab has slipped from being the richest large state (excluding special category states) in 1984 to the 9th richest state by 2014. Of course, this analysis is merely suggestive but Professor Ramesh Chand's excellent analysis points in a similar direction.

Figure 5: Overall GDP Growth in Punjab and India (Average, decadal, %)



One can hazard that Punjab's dynamism will only be restored if it weans itself off its agriculture that has taken a toll of its water resources, soil quality, and human health (refer to cancer district). Its fading dynamism may be in part due to the excessive support that its agriculture receives.

7. Loving Too Little

If we love some crops too much, perhaps we love many of the others too little. I have in mind here pulses, dairy and livestock, fruits and vegetables, and oilseeds.

How do we love them too little?

In the case of pulses, commendable efforts have been made to increase procurement at MSP (MSP without procurement, it must be emphasized, offers little comfort for farmers) and this Kharif season there was indeed a substantial increase to 2 million (out of a total output of 8.7 million). Despite this, it is estimated that about 60% of the record Tur output was sold at less than MSP, resulting in depressed income. Stock limits and export restrictions kept market prices low; had they been eased the fortunes of farmers would have been better.

I think we misunderstand an important economic insight here that we highlighted in the pulses report. Some of the loving-too-little occurs because of the perception of a tension between farmer and powerful middle-class consumer interests. This leads to a response that creates policy volatility and pro-cyclicality, which increases price uncertainty for farmers: so when prices go up, export restrictions are imposed, and when prices decline, import restrictions are imposed and so on. But this perception and the consequent policy action do not adequately recogonize a fundamental alignment of interests. Lower farmer prices today will adversely affect future agricultural supplies (especially in crops that are predominantly produced domestically such as pulses, fruits and vegetables) which will increase consumer

prices tomorrow. So, even over reasonable planning and political horizons, what is good for the farmer is good for the consumer.

On fruits and vegetables, restrictions on selling imposed via APMCs are perhaps taking a toll. The government has created an electronic common market and the results are awaited.

On dairy and livestock, two points are worth emphasizing. Governments have the right to choose their social policies. But in doing so they must be fully aware of the economic costs of these policies. If social policies impede the workings of the livestock market, the impact on the economics of livestock farming could be considerable. These must be costed for appropriate choices to be made.

Second, it must be recognized that the economics of livestock farming, and hence the fate and future of this source of livelihood will depend critically on the terminal value of assets, in this case the no-longer-productive livestock. If social policies drive this terminal value precipitously down, *private* returns could be affected in a manner that could make livestock farming less profitable (and recent research by Anagol, Etang and Karlan (2013)—NBER Working paper No. 19437—suggests that returns to livestock farming are in any case very low and even negative) . This declining terminal value arises both because of the loss of income from livestock as meat and the additional costs that will arise from having to maintain unproductive livestock. But there is more. It is possible that social policies could affect *social* returns even more adversely. Stray cattle, and a lot of it, will have to be looked

after, otherwise diseases (foot and mouth) could spread, leading to health hazards and social costs.

(Let me add as an aside that responding to changing consumer preference for proteins, which Indians under-consume to the detriment of their health, needs both reduced cereal-centricity, and at the same time promoting—not hindering—alternative sources of protein from pulses, dairy and livestock).

Finally, there is technology that again is especially important for pulses, oilseeds and dairy. Harish Damodaran has written persuasively about the choices we face on GM. To paraphrase him, it seems that the patronization of farmers masquerading as romanticization is rife. This must be addressed rationally even beyond mustard. If we want farmers to benefit from new technology we must allow them these benefits regardless of the provenance of the technologies just as we do in other sectors. Expropriating property rights retroactively and undermining sanctity of contracts as sought by voices on opposing ends of the ideological spectrum could impede the flow of technology and thus end up hurting not helping farmers. To be sure, we must absolutely ensure that there is no abuse of patent rights or other monopolistic practices but the right instruments must be chosen; moreover, there must always be an underlying cost-benefit analysis but an analysis as farmers themselves would do it rather than as how the analysis might be done for them.

8. Conclusions

How do we redress this imbalance between the two sets of crops?

On the loving-cereals-too-much challenge, it will be politically impossible to reduce current levels of support. Entitlements have been created and exit from entitlements is fiendishly hard not just in India but the world over. The only possible way forward is to keep the magnitude of support and change its form in order to change incentives. Professor Ashok Gulati has recommended that support for fertilizers and power be each provided as a direct transfer than as a conditional subsidy. Perhaps this idea could be expanded into a quasi-universal basic income by combining some of the major support—power, fertilizer, even MNREGA—into an unconditional basic support for all farmers or farmers below a certain farm size. Our estimate is that if these three forms of support were replaced by direct support the amount provided could be about Rs. 1 lakh per year per cultivator.

In any event, as a minimum, ways must be found of reducing the addiction of agriculture in Punjab and Haryana to free power and cheap fertilizer.

On the other category of crops that are loved too little, I think the challenge is equally daunting and really the flip side of the cereals challenge. Here one cannot but help come to the conclusion that policies can only seriously and sustainably be implemented if they—farmers in pulses, dairy, livestock, oilseeds etc. acquire more political voice to countervail other voices. Top down efforts clearly have not been

enough and pressure from below seems a necessary condition for redressing the balance. How that will happen I will leave better minds than mine to dwell on.

A final and simple proposal. I have drawn a distinction –and I don't know how valid it is--between these two categories of objects of government "love" in agriculture; and I have made some suggestions for re-balancing this love. We could at least make a start by making highlighting and making clear this differential treatment. I would urge the CACP in its MSP calculations to quantify not only the private costs and returns of various crops but also their true social costs. For example, the social cost of cultivating rice in north-western India far exceed private costs because of damage to soil quality, depletion of water tables, damage to human health, and spewing of pollution into the atmosphere. The disinfectant effect of more information and clarity might be a small technical step that could help in responding appropriately to the challenge.

In conclusion, I would suggest that perhaps more hard-nosed realism rather than woolly romanticization of the Indian farmer is what the doctor must order to transform Indian agriculture.

Thank you all very much for your attention and patience.