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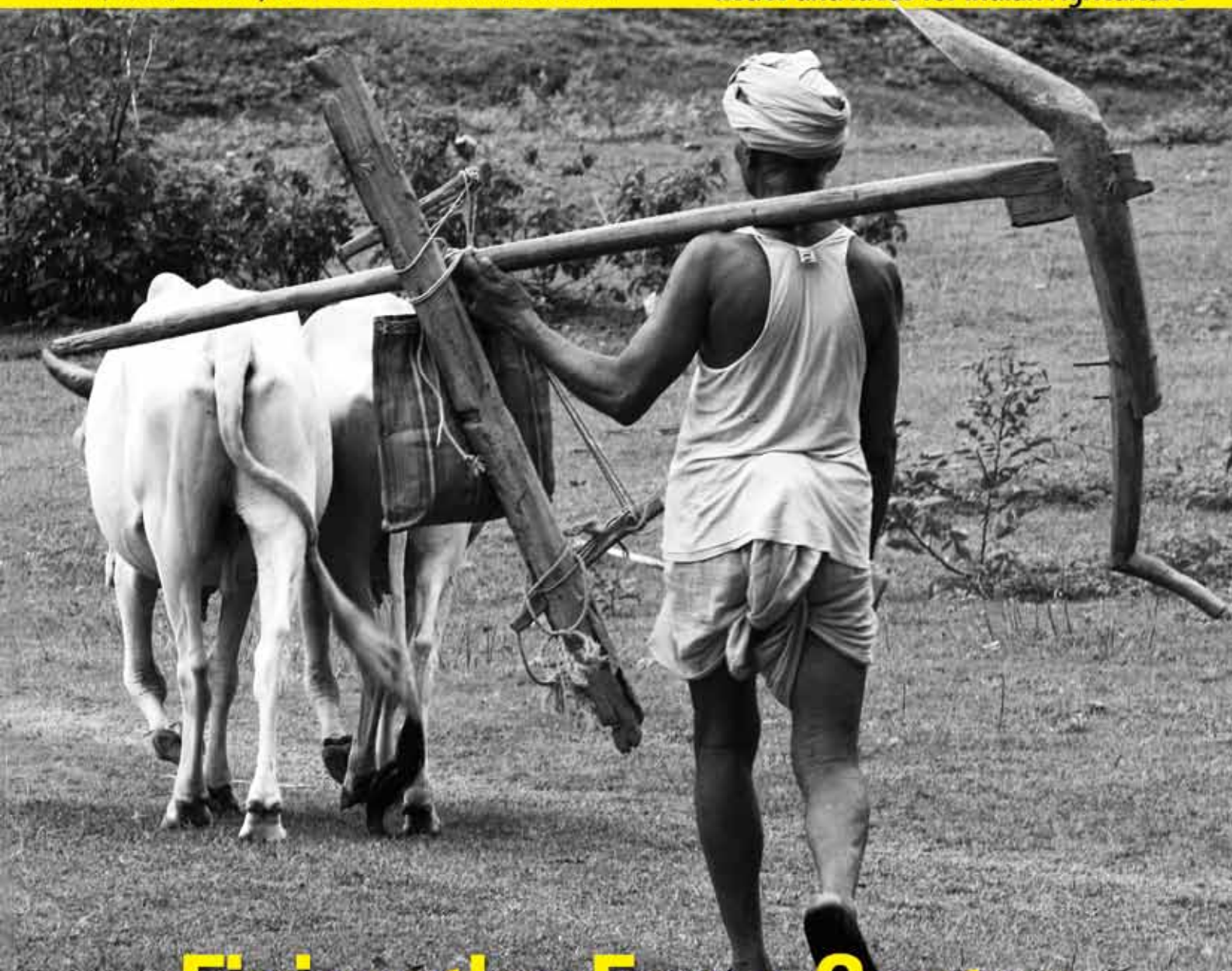
Issues and Ideas for Indian Agriculture



Fixing the Farm Sector 07

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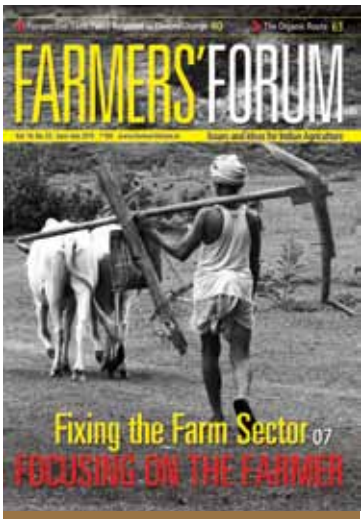

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Navigating "Good Times" for Farmers

"There is a disassociation between the government and the governed."

Raghuram Rajan commands from the 18th floor headquarters of the Reserve Bank of India (RBI) in Mumbai. The view from there is as breathtaking as his grasp of the macro economy and a discussion with him leaves one reassured that the country is in good hands. For one, Rajan has the patience to listen and discuss a topic threadbare; a trait that the finance ministry bureaucrats at North Block must cultivate. India's new finance minister, while meeting specialists from various sectors also called a meeting of agriculture experts. To be sure, the finance ministry officials did not ask the agriculture ministry for names of farmer organizations to call but chose what was convenient, a practice followed by the erstwhile United Progressive Alliance (UPA) government at the Centre.

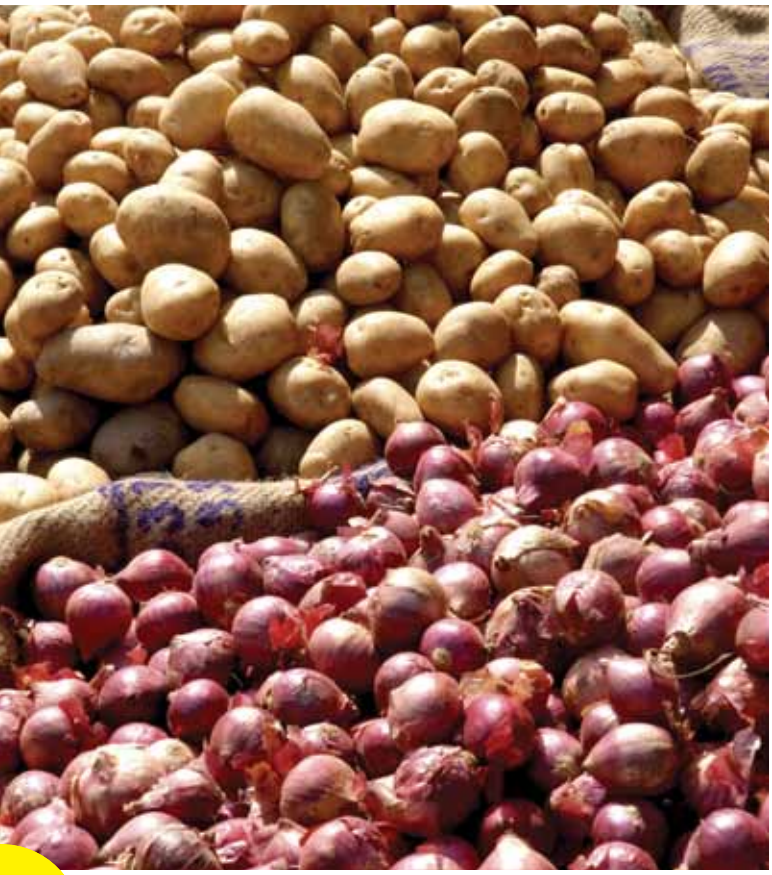
Raghuram Rajan's counterpart in the United States of America, the chair of the Board of Governors of the Federal Reserve System, Janet Yellen, has more influence on policy in the USA than Raghuram Rajan has in India. Rajan, however, completely understands that the RBI tinkering with repo rate, interest rates, gold imports restrictions and such other such measures will not suffice to reign in inflation in the long run. These are passé and the canvas for effective action should be much wider. There was thus a meeting of minds on the issue of supply side of food inflation; supply, not from the farm but from the farm to the consumer. One presumes that the RBI governors before him have never bothered to call farmers for consultations and this change has been greatly appreciated.

The Congress Party-led UPA was decimated in the elections in spite of several years of good monsoon and rising agricultural production because it chose to listen to a band of people without the necessary bandwidth, without realizing that rising agriculture production is as different from farmer profitability as agriculture economists are from farmers. Indian farmers are ready to learn from economists. However, they would rather not have economists advocate policy for them.

Having suffered from years of misguided left-wing policies thrust on them by non-state players (read: the National Advisory Council), farmers are now worried that the new regime may shift to a farming policy dictated by business houses and right-wing economists.

RISING AGRICULTURE PRODUCTION IS AS DIFFERENT FROM FARMER PROFITABILITY AS AGRICULTURE ECONOMISTS ARE FROM FARMERS

EDITORIAL



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THE DISTRESS IS MIND-BOGGLING. THE CRISIS FOR THE SUBSISTENCE FARMER IS EXISTENTIAL

Everyone is worried about food inflation. Reducing it is a tall order because, at the farm level, most food prices are already very low and the threat of a weak monsoon looms large this year. The farmer is worried that gram (chickpea) is selling today at same price as it was in 2006. Mustard and barley prices are the same as in 2008. These are non-perishables under the government-administered minimum support price umbrella. Even the minimum support price in this drought year has not increased substantially for paddy. For bajra, maize, groundnut and soyabean, it has not been increased at all.

Of immediate concern are farmers' anxieties about the government's response to the uproar over inflation; a key issue on which the UPA floundered. Some economists have suggested reducing import duties on fresh fruit and vegetables, which will squeeze producer margins. In what is a short-sighted step, potato and onion trade has been restricted in a bid to rein in the spiralling prices. These actions of the government may, not only lead to a doubling of prices of these produce after four months, but also continue the legacy of misunderstanding of ground realities.

Much maligned vegetables tell a sad story. Last year, farmers sold green pepper at ₹12 per kg but today they are compelled to do a distress sale at ₹2, even though the cost of picking the peppers is ₹2. Add to that the cost of transport and other commissions. The irony is that even though the green pepper price has fallen by 600 per cent in one year on the farm, the street price remains the same: ₹60 per kg.

Tomato processing is the much-trumpeted success story of the food-processing sector. Last year, farmers sold tomatoes for ₹10 per kg. Today they fetch only ₹2 per kg. Bharat Krishak Samaj farmers offered to give their tomato crop for free, if prospective freeloaders would harvest, load and undertake the transportation themselves. At a personal level, I have offered such terms on the micro-blogging service Twitter and found no takers. So much for social media marketing. Even something that is free has a price. The same free tomatoes were being bought by consumers at ₹15 per kg in the market; at a 750 per cent margin. The distress is mind-boggling. The crisis for the subsistence farmer is existential.

Another apprehension among farmers is fuelled by rumours about the new government's policies for curtailing or abolishing the fertilizer subsidy to balance the fiscal deficit. In itself, no farmer would object if there is a corresponding increase in his real income. As of now though, the increased price of fertilizers will not translate into a higher price realization for the farmer, thereby increasing losses.

The illusion that "good days are coming" will not last long if the current regime opts for a free-fall towards a free market economy rather than structured liberalization. One would like to believe that the Bharatiya Janata Party (BJP) will not fall prey to "educated" articulation and sincerely hope that such faith is not misplaced! ●

Ajay Vir Jakhar
Editor
twitter: *@ajayvirjakhar*

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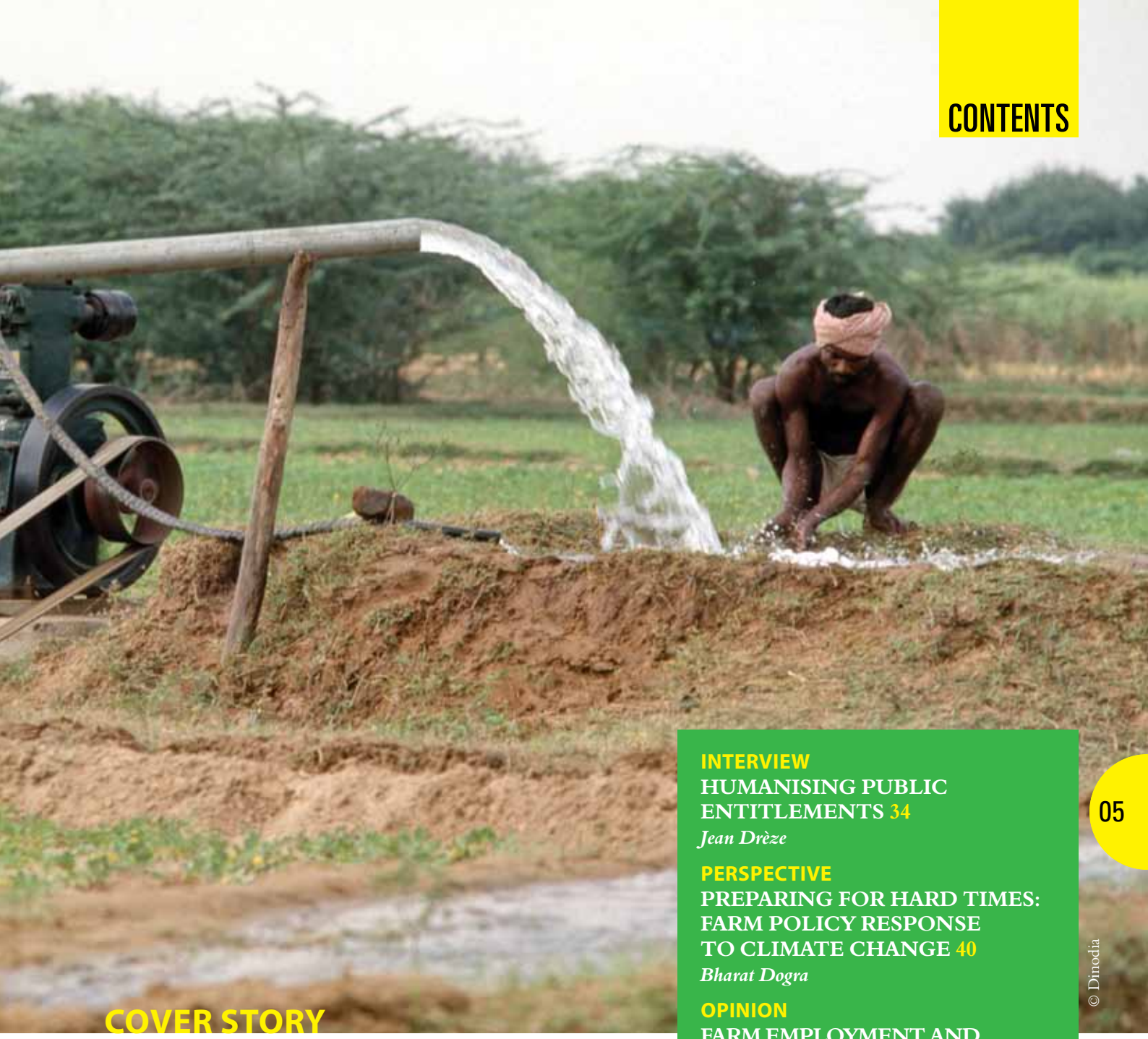

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LETTERS

To the Editor

The imperative of weather forecasting

Apropos of your Editorial, "Farmers' Plea: 'Lend Me Your Ears'" (*Farmers' Forum* April-May 2014) why does it take such belaboured explanations to tell the government that accurate information about weather is very necessary for a farmer? In these days of advanced technology, the government must urgently construct a mechanism, which can provide accurate weather information and discard age-old technology. There must be no holding back on investing in weather forecasting ability; it is the only way to survive.

Gaurav Dua,
Karnal, Haryana

Time for a climate for change

Climate change is the rapidly increasing problem that will surely result in mass disaster as explained by Dushyant Mohil in his article "Beating the Climate Change Challenge" (*Farmers' Forum* April-May 2014). The writer goes into the details of the problems and explains how Indian agriculture can be made more resilient against the inexorable forces of such disastrous change.

Bhupender Tomar,
Hissar, Haryana

Counterpoint please

The article under your 'Controversy' column by Bhavdeep Kang "Time for genetic 'Modi'fication?" (*Farmers' Forum* April-May 2014), was very informative but it would have been better if you had a counter opinion on the same topic as is the norm with *Farmers' Forum* seminars. That would have enabled the readers to get a balanced view.

Satish Kumar,
Jalandhar, Punjab

No democracy for the downtrodden?

Ajay Vir Jakhar's article under the 'Green Fingers' column, "An Indian Abyss Named Durgi" (*Farmers' Forum* April-May 2014) places in sharp focus the miserable life of the villagers in the far-off villages. These people have been persecuted by all, regardless of government policies or the government babus and their never-ending corruption. There is no delivery of either governance or services. The big question is who will take responsibility for this state of affairs in a socio-political atmosphere, where democracy has failed people, especially at the grassroots.

Vinay Kumar,
Ranchi, Jharkhand

Farmers' Forum website www.farmersforum.in is now up and running. Log in to check out all earlier numbers.

Valued commentators

It is very satisfying to see such eminent commentators expressing their views in *Farmers' Forum*. As always, Surinder Sud's arguments are most compelling and Bibek Debroy's most perceptive. Keep up the good work.

Harit Tyagi,
Panipat, Haryana

Whither farmer protection?

Apropos of Surinder Sud's article on "The Agri-Agenda: New Government; Unattended Tasks", (*Farmers' Forum*, April-May 2014), it has been explained times without number that farm incomes are too low to sustain the Indian farmer and his family. However, has one heard any political leader admit this in any forum? What is the point of having commissions, committees and surveys hammering in the point about the inadequacy of farm incomes when everything falls on deaf ears and the country follows an agri-agenda that is keener to plug the Western line than that of the Indian farming constituency? Agreed that agriculture being a state subject, much of the reforms is under the purview of the states. High time then for political will on the part of both the Centre and states.

Naresh Banerjee,
Kolkata, West Bengal

Time to Address Farm Sector Complexities

A *Farmers' Forum* Report

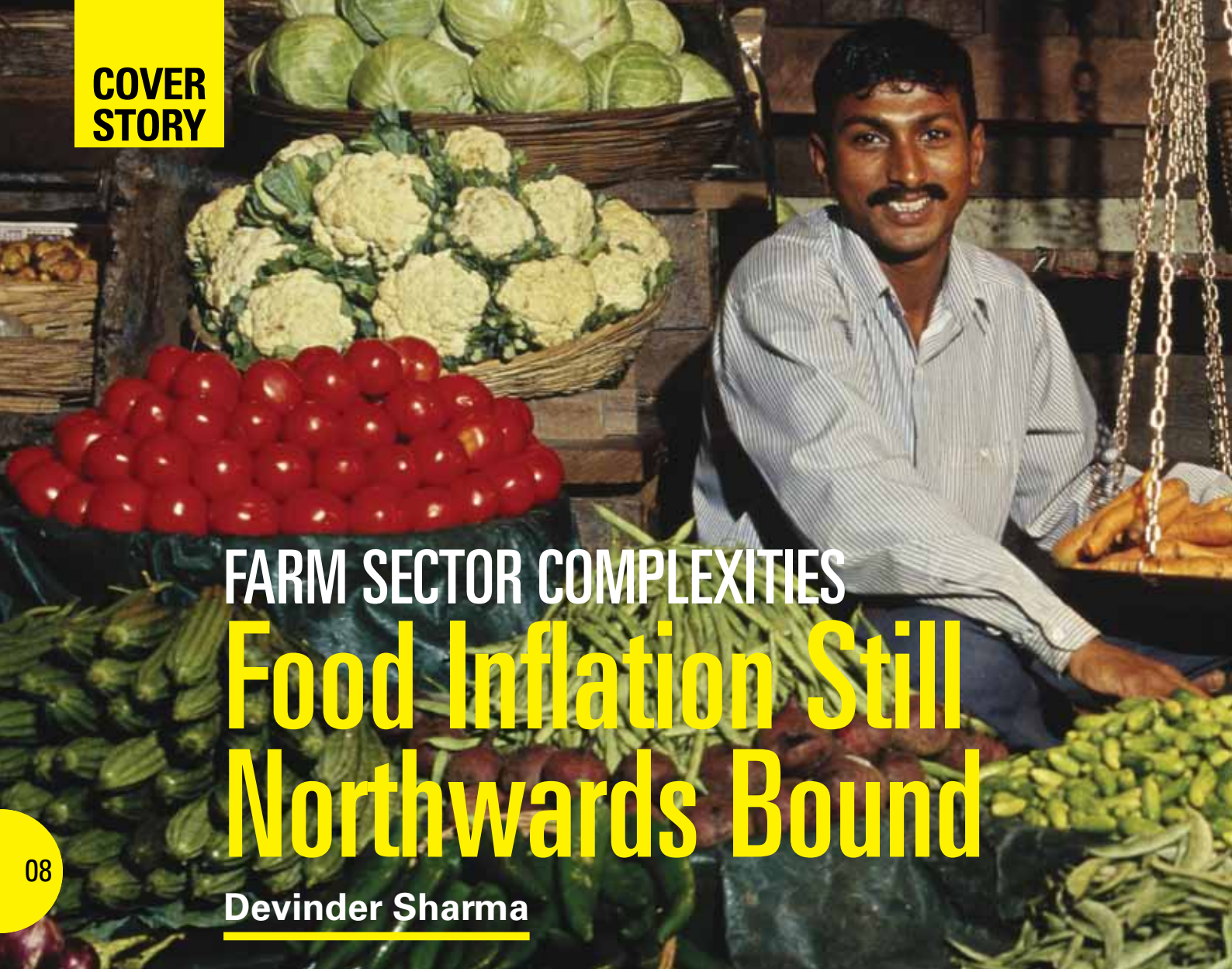
With more than a billion people to feed and the farm sector infrastructure far from adequate, Indian agriculture gets more and more complex. Even as food grain production increases, the farmer's plight becomes more and more pathetic. Even as the minimum support price increases, the farmer finds himself financially impoverished. Some 300,000 farmers have committed suicide over the years. As the new government starts to address the many issues haunting Indian agriculture, it is clear that several of them do not even seem to matter when agriculture policy is framed.

What is little known is that only 30 per cent of the Indian farmers benefit from procurement prices. These farmers have a marketable surplus which they bring to the nearest *mandi*. It is only in Punjab, Haryana and parts of Uttar Pradesh, Maharashtra, Andhra Pradesh and Tamil Nadu (and now, Madhya Pradesh) that a strong network of *mandis* operates. In the remaining 70 per cent of the country, farmers have to depend on private trade. It is in these areas that farmers are ruthlessly exploited.

"For instance, while the paddy farmer in Punjab got an MSP of ₹1,310 per quintal for the 2013 season, his counterpart in Bihar, where private trade dominates, is able to sell at a distress price of around ₹800 per quintal. Withdrawing price support for Punjab farmers will automatically bring them down to the level of Bihar farmers", points out Devinder Sharma, food and trade policy analyst in this three-tiered cover story that *Farmers' Forum* presents, providing three different perspectives on the farm sector complexities in India.

Laveesh Bhandari, director, Indicus Analytics, points out that one can change laws in the upstream part of the value chain – laws dealing with farming, the farmer-trade interface in rural areas, the Agricultural Produce Market Committee Act, the Essential Commodities Act and other laws governing the farm sector. They cannot have an impact since it is the last mile of the value chain where the key problem exists. "Once the last mile of the value chain is fixed – consumer-retailer-wholesaler – any improvements upstream will quickly be transferred downstream. There is need to make sure that what connects the producer and consumer is functioning properly – in other words: trade".

Finally, senior journalist Naresh Minocha explains the urgent need for the new government to prepare a blueprint for agriculture growth-led revival of the economy. "Before preparing a pragmatic strategy for rejuvenating agriculture and for injecting adrenalin in both the agri-inputs and agro-based industries, policymakers have to first take a hard look at BJP's electoral promises" and reconcile its many conflicting positions. ●



FARM SECTOR COMPLEXITIES

Food Inflation Still Northwards Bound

Devinder Sharma

There is hardly a day that newspaper articles and comments do not dwell on the need to do away with procurement prices for farmers. Corporate economists and free market lobbyists have been repeatedly arguing on the dire need to do away with the minimum support price (MSP) for cereals like wheat and rice. The Commission for Agricultural Costs and Prices (CACP) too has been vociferously demanding the dismantling of the price support system for farmers, and letting the markets reign. The argument is that a higher MSP fuels food inflation.

DEVINDER SHARMA
Food and Trade Policy Analyst

So when Raghuram Rajan, governor, Reserve Bank of India (RBI) blamed the Agricultural Produce Market Committee (APMC) Act for the rising food prices, one was not surprised. The Congress vice-president, Rahul Gandhi, had directed the Congress-ruled states to remove fruits and vegetables from the APMC's purview. The new Bharatiya Janata Party (BJP)-led National Democratic Alliance (NDA) government too followed the same dictum. Unable to control the runaway inflation, propped up by the rising food prices, the easier option was to shift the onus on to the little understood role agricultural markets play in providing an assured price support to farmers.

In fact, the hike in MSP for paddy by a mere ₹50 per quintal, which comes to just 50 paise per kilogram (kg), is a reflection of the faulty mindset that blames farmers for the price rise. Television debates make it obvious that all out efforts are being made to shift the burden of rising inflation on to the hapless farmers.

Every year the CACP recommends a MSP for about 24 crops. Out of these, primarily wheat and rice are procured by the Food Corporation of India (FCI) and, on its behalf by some state agencies. This serves two purposes. First, the foodgrain procured by the FCI serve as a buffer stock against any emergency and at the same time helps in meeting

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the food security needs of the poor. Whatever grain comes into the *mandis* is first offered for purchase to private trade. Only if there are no buyers left does the FCI step in to purchase it at the support price announced by the government, which in reality becomes an assured price for farmers.

What is little known is that only 30 per cent of the Indian farmers get the benefit of procurement prices. These are the farmers who have a marketable surplus that they are able to bring it to the nearest *mandi*. It is only in Punjab, Haryana and parts of Uttar Pradesh, Maharashtra, Andhra Pradesh and Tamil Nadu (and now, of course, Madhya Pradesh) that a strong network of *mandis* operates. In the remaining 70 per cent of the country, farmers have to depend on the private trade. It is in these areas that farmers are ruthlessly exploited. For instance, while a paddy farmer in the Punjab got an MSP of ₹1,310 per quintal for the 2013 season, his counterpart in Bihar, where the private trade dominates, is able to sell at a distress price of around ₹800 per quintal. Withdrawing price support for Punjab farmers will automatically bring them down to the level of that of Bihar.

There is a second explanation. It is primarily because the farmer is unable sell his produce directly to the trader (and routes it through the APMC *mandi*) that he fails to notch up a better price for his produce. This is an absurd argument considering that 70 per cent of farmers have no access to *mandis* and, therefore, do not fall under the APMC Act. It is time to ascertain why the prices of cereals/vegetable/fruits are ruling high in areas where the farmers do not get the benefit of procurement prices. As earlier seen, 70 per cent of farmers are outside the ambit of the procurement system.

Not only vegetables, prices of egg and milk have also been rising. More recently, prices

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of eggs have shot up in the Mumbai market to about ₹60 per dozen. Milk prices too have been steadily rising. The APMC Act has nothing to do with eggs and milk. Why are these prices rising if the APMC is to blame for the rising prices? The organized retail units like Reliance Fresh, Big Bazaar and Metro are allowed to purchase directly from farmers. Why were these retail chains unable to supply onions, for instance, at a cheaper price? To look at the non-food sector, why are airfares going up? You click three times on an air route and the ticket price goes up. It is cheaper to fly to Bangkok and Kuwait than to go from Delhi to Goa.

Montek Singh Ahluwalia had been at the helm of India's planning process for quite some time. It is during his tenure, as the deputy chairman of the Planning Commission, that India was pushed deeper and deeper into the quagmire of poverty (the claims of poverty being reduced are questionable). With the largest population of the hungry in the world, the Global Hunger Index 2010 has placed India in the pit.

I was not, therefore, shocked when I read Ahluwalia blame the hungry for the rise in food inflation. Nothing is unexpected from someone who literally lived in the ivory tower of Yojana Bhawan. What, of course, surprised me was the audacity with which he blamed the poor and hungry in the rural countryside for the rising inflation. There can be nothing more devoid of intelligence than blaming the poor in the villages; as if they have started eating more and, therefore, put a pressure on food prices.

A few years back, the former US president, George Bush, had made that ignominious remark shifting the blame for the 2007 global food crisis to India's hungry. He said that the food crisis was caused by Indians who had started eating more. In an interview with *Washington Post*, I had responded that "if Indians started eating as much as the Americans did, probably the world would need to grow food crops on the moon". This had become the headline.

While one can ignore what George Bush had said, one can hardly excuse the position of the former head of India's planning process who should have been better informed. It also reflects on the disconnect India's Planning Commission has with the existing ground realities. Obsessed with the growth figures that continue to be tossed around with much fanfare, the planners have tried but failed to hide the ugly underbelly of India's economic growth.

For nearly five years now, media discussions have been showing an appalling economic ignorance. They go on harping on what the economic textbooks would prescribe as the plausible reasons behind any runaway inflation. Whether it was any member of Prime Minister's Economic Advisory Council or the Planning Commission, the answers were all the same: food inflation is caused by low production; with rising incomes there is a shift in demand towards nutritious foods thereby increasing the prices of fruits, vegetables and milk products; and because the farmers are being paid a higher procurement price, the consumers have to pay more.

There is hardly a year when there are no news reports of farmers dumping tomato, potato, onion, and other vegetables on to the streets in one part of the country or the other.

Consider each argument separately. The common refrain that one hears is that food prices are on an upswing because production is unable to match the growing demand. For several months now, one has been concerned about foodgrain rotting in godowns. Even while lakhs of tonnes of wheat and paddy are allowed to rot, one is told that there is a need to increase crop production. Even though the TV channels began highlighting the grain wastage, the government has not made any significant allocation for creating additional storage space. In such a depressing scenario, how will more production help? Where will the government store the additional produce? Will it not go waste too?

Every year, as per official figures, more than 16 lakh tonnes of foodgrain rot in godowns. Several times more than that is the quantity of wheat and rice that becomes sub-standard and unfit for human consumption and which has to be sold for manufacturing alcohol and be used for cattle feed.

When former Prime Minister Manmohan Singh equated inflation with prosperity, he was trying to say that with more income in their hands, people had shifted to nutritious diets. Consequently, the demand for fruits, vegetables and milk products shot up as

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The availability of fruits and vegetables in this country is more than six times of what is required. Why are prices of these edibles sky-rocketing when they are available in abundance?

a result. This too is untrue and has no scientific basis. Since this is a frequently asked question, some computations of the production estimates are interesting. The per capita daily availability of fruits and vegetables is 480 grams. The per capita requirement for a balanced diet is roughly 80 grams but the actual consumption is much low. Therefore, it becomes apparent that availability of fruits and vegetables in this country is more than six times of what is required. So where is the shortfall? Why are the prices of fruits and vegetables sky-rocketing when they are available in abundance?

When onion prices had touched ₹70 per kg in August 2013, a study by the National Bank for Agriculture and Rural Development (NABARD) had shown that while farmers were paid ₹8 per kg in the month of April-May, the traders had collected the onions and stored it at several places, only to make a killing by creating an artificial scarcity. The consumers paid as high as ₹70 per kg for onions in August and two months later, in October, the prices had crossed ₹100 per kg at several places. A newspaper report has computed that the wholesale and retail trade had profiteered by at least ₹8,000 crore by keeping the prices high.

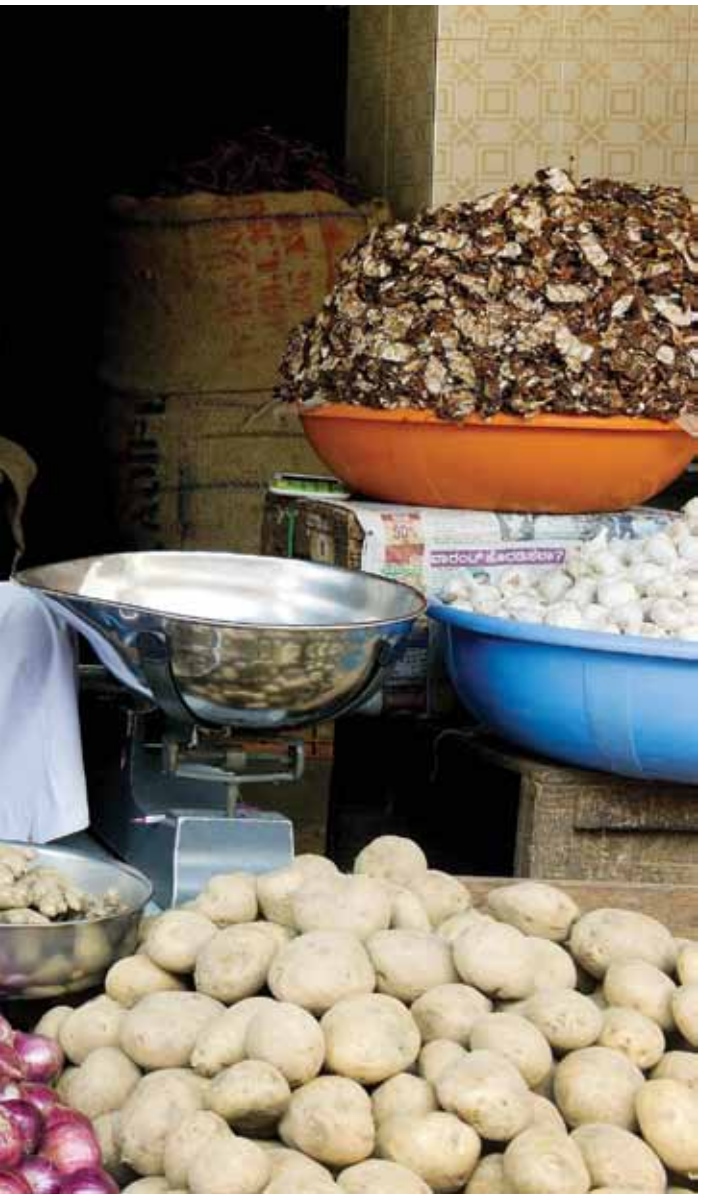
Over the years, the wholesale and retail trade in fruits and vegetables has monopolized the entire supply chain. Right from procuring vegetables from the farmers to making it available at the consumer's doorsteps through a network of hawkers is now an organized business. Even the hawkers who come to the doorsteps are now part of a network owned by a particular wholesaler. These traders or *arhtiyas* have now turned into money bags for political parties. No wonder, these wholesale and retail traders are affiliated to one political party or the other. For instance, the Azadpur Mandi Traders Association in Delhi is aligned to the Congress party. In Punjab, on the other hand, the traders associations predominantly back the ruling Shiromani Akali Dal (SAD)-BJP combine.

Interestingly, even in the organized retail chains – like Reliance Fresh, Easy Day, Metro and Big Bazaar

Organized retail should have dropped middlemen and provided fresh perishables at a cheaper rate. Retail chains retained the ₹100 per kg open market price of onion

– the prices had remained almost at the same level as the open market. These organized retail chains were supposed to remove the array of middlemen and thereby provide vegetables and fruits much cheaper to the consumers. When open market price of onions was around ₹100 per kg, the organized retail chains did not sell it at ₹60 per kg or so. If Reliance Fresh, Big Bazaar and the likes had made onions available at ₹60 per kg, there would have been long queues of buyers.

It is, therefore, very clear that organized retail is not the answer to food mismanagement. Neither the farmers nor the consumers stand to benefit. The only beneficiaries are the organized retail chains, which have replaced the *arhtiyas* and the hawkers. This shows that the big fish is no different from the smaller fish. The answer is simple. Whether it is food, egg prices or airline tickets, prices are being freely manipulated by strong cartels. In case of onions too, a very powerful cartel of a handful of traders had made a killing in 2013 when there was only a 4.8 per cent shortfall in production. The APMC too is riddled with cartels. As past experience shows, even organized retail chains form cartels. Replacing one set of middlemen with another is not the answer. The answer lies in breaking these cartels.



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Expecting the agri-business industry to provide quality fruits and vegetables at affordable prices will remain an unfulfilled dream. Nowhere in the world has the agri-business industry succeeded in doing so. There is a renaissance in food delivery, quality of produce and economics though, which is slowly but steadily taking roots. From Australia to United States, from Japan to Argentina, the local food systems are changing. Enhancing the livelihoods of local producers and meeting the consumers' aspiration, food markets are now becoming popular.

Even in America, where Wal-Mart dominates the retail market, the growth in farmers' markets has been phenomenal. From just 370 such markets that existed in 1970, there were more than 7,000 in 2010. The US Department of Agriculture estimates that in 2007 more than 136,000 farmers were selling food directly to consumers. In Australia too farmer markets have grown rapidly. From none in 1999, there are 150 farmers' markets in Australia today. Citing a survey, the Australian Farmers' Markets Association claims that farmers' markets in the province of Victoria alone have registered sales of over $2 million every week.

Farmers' markets provide farmers and consumers a suitable environment to interact and that enables farmers to meet the specific needs of the consumers. This, in turn, enables greater consumption of fresh and healthy fruits and vegetables and, in the bargain, reduces the carbon footprint. Since consumers are now becoming increasingly aware of the damage chemical pesticides and fertilizers do to health and immunity systems, the demand for organic food is growing by approximately 20 per cent every year. Moreover, since farmers come and sell directly to consumers on a regular basis, farmers' markets eliminate middlemen thereby providing stable prices.

The concept is certainly not new to India. It was launched in Punjab as *Apni Mandi* a few decades back but has never received the impetus and investments required. In Andhra Pradesh the farmers' markets are called *Ryatu Bazaars*, but again lack support. In metros like New Delhi, Mumbai, Chennai and Kolkata, the weekly *bazaars* that have been operating for years now stem from the same idea. However, since these weekly *bazaars* have not been provided any permanent space, with adequate infrastructure and sanitation, they have failed to emerge as an alternate marketing hub. These *bazaars* are being held where ever open spaces are available. These spaces are unhygienic, dusty and filthy.

Over the years, lesser number of farmers and more commission agents have been operating in these markets. This is contrary to the underlying objective of farmers' markets. Some mechanism must, therefore, have to evolve to make farmers' markets accessible only to genuine farmers. To begin with, farmers could be encouraged to form co-operatives for marketing purposes. Each co-operative could then participate in farmers' markets. This would leave farmers to undertake other farming activities.

In the UK the community food sector has grown to £150 million in just five years, between 2007 and 2012. The potential in India, therefore, is enormous. All it needs is a shift in thinking and proper policy support. It will be the beginning of a new food culture in India, supporting farmers, consumers and reducing much of the environmental damage as well as health costs. ●

COVER STORY

FARM SECTOR COMPLEXITIES

New Questions; Simple Solutions

Laveesh Bhandari

The many components of an economy are connected through complex mechanisms. Flaws and problems in one area spread throughout, affecting each component in different ways. When one finds a problem in one area, one often assumes that is where the problem lies. Most often that is not the case. The underlying problem is somewhere else and what one is confronted with is actually just a symptom. That is the story of agriculture.

LAVEESH BHANDARI
Director, Indicus Analytics

For many years now, agriculture does not appear to have been a very attractive sector for either investors or those looking for jobs. Children of agriculturists prefer to be in the city, sometimes even willing to live in sub-human conditions in search of better incomes and lifestyles. At the same time, there has been sustained inflation in food and other agriculture related products over the last decade. In other words, if there is a problem in agriculture, it is not merely impacting agriculturists but also people living in urban areas and the whole country. Even so, governments at the centre and states have been advised by many experts that problems in rural India must be corrected, if agriculture is to improve.

Ask a different set of questions and the answers will be different from what most people will give. For many millennia, agriculture has generated enough surpluses to sustain, grow and even rebuild Indian civilization. Prosperity has not been unknown to rural India. Instead of providing subsidies and infrastructure to rural citizens, rulers taxed them heavily. What prevents agriculture from being synonymous with prosperity? If there are so many problems in rural areas, what prevents rural citizens from taking actions to correct them? Is the farmer less entrepreneurial? Is he less capable? Does he know less about business than a city dweller? Is he simply weak?

None of the above is correct. The farmer is as capable, entrepreneurial and innovative as anyone

else. It is just that the key problem in agriculture cannot be corrected in rural areas because the cause is somewhere else, where the farmer has little control. The key problem is that India is a large complex economy and the agriculture sector is no less complex.

Rather than speaking in generic terms, one could take a single class of products. The problems here may appear different from that confronting other products, but help in underscoring the key message. Take, for instance, fruits and vegetables. This is one class of products that can yield high profits and incomes to farmers if they could access the urban markets in the right manner. The fact that the urban Indian has continued to reel under high food inflation for more than a decade only underscores the fact that something is not right with this machine and some component or components are not working properly.

The typical expert will say that there is need for more cold storages and the right kind of warehouses for the farmer to benefit from accessing urban markets. He would be right. Ask a basic question: If this is the problem, why has someone not addressed it? These storages and other such physical infrastructure have not been built precisely because they are not the critical problem. Even if cold storages were built across the country, the problem of high consumer inflation combined with low farmer surplus would not have been addressed. Once the critical problem is addressed, however, someone – either the farmer or his neighbour or a company – will build these warehouses and cold storages because then they can expect adequate demand that they can profitably service.

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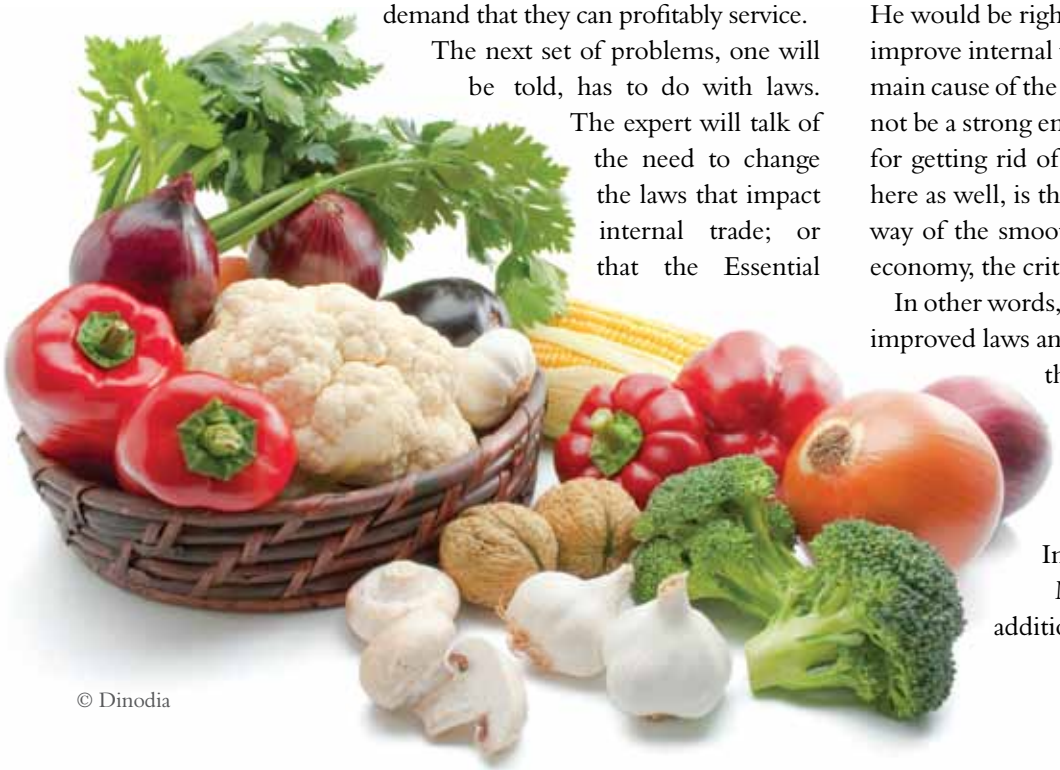
The next set of problems, one will be told, has to do with laws. The expert will talk of the need to change the laws that impact internal trade; or that the Essential Commodities Act needs to be removed; or at the very least its ambit needs to be reduced; the APMC Act needs to be changed dramatically and so on. He would be right; there is need to do all of that to improve internal trade in food. If these laws are the main cause of the underlying problem, would there not be a strong enough rural lobby that would root for getting rid of such harmful acts? The answer, here as well, is that though these laws come in the way of the smooth functioning of the agriculture economy, the critical problem lies elsewhere!



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In other words, simply creating cold storages and improved laws and regulations is not the answer. If that were the case, people in rural areas would have addressed them. The critical problem of fruits and vegetable inflation lies not in rural but in urban India, where they cannot do much. More than half of the value-addition on fruits and vegetables takes

Simply creating cold storages and improved laws is not the answer. Fruits and vegetable inflation begins in urban India, rural people cannot do much about it. Urban India should answer

place within a few hours of entry into an urban area. Between the time when the basket is unloaded from the truck in a *mandi* at 4 am and by the time it is sold to the home-maker at around 11 am what was costing ₹1 becomes ₹2 to ₹2.50. During these few hours it has also deteriorated in quality because it has been exposed to dirty air, washed in polluted water, exposed to sunlight with its deleterious effects and high temperatures endemic in large parts of India. Not only that, it has been squeezed and squashed as well.

In other words, during the time its value increases by 100 per cent or more, its quality has gone down; freshness, hygienic parameters, taste and nutrition all suffer immeasurably. Perhaps this is the only set of products in the world, whose value increases dramatically as its quality goes down!

Many people point to the exploitation of the farmer by middleman or the trader who, within the space of a few hours, can quickly get more than a 100 per cent return on his value. Some experts aver that there is need for large companies that will be less 'exploitative'. Older experts continue to talk about the need for more and more controls on the traders, who should charge less from the urban consumer. Somehow these are not the approaches one is comfortable with.

To ask and answer two questions; the less important one first and the more important one later: what is the objective – lower prices for the urban consumer or higher prices for the farmer. What should one try to correct? Some people fudge

Given the right economic environment the consumer will pay less for better quality. Trade, connecting the producer and consumer, needs to function without a hitch

matters by choosing politically correct answers and ask for both. Without trying to benefit either the farmer or the consumer, it would be worthwhile to figure out and solve the constraint in trade.

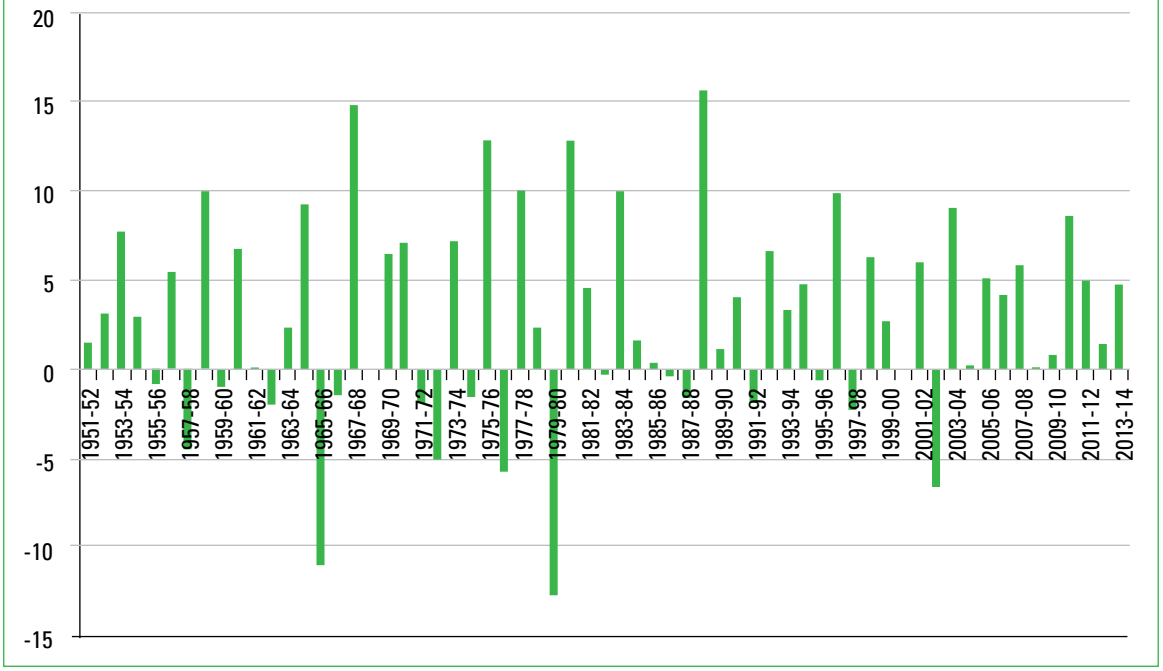
If the right action is taken, both the consumer and producer will benefit. Today the consumer pays more because the producer is suffering; if the producer has the right economic environment the consumer will end up paying less for better quality. There is need to make sure that what connects the producer and consumer functions properly – in other words – trade.

Second, if indeed it was so profitable to be in the urban trade of fruits and vegetables, why do more people not want to enter this profession? Just as farmers' children do not like the idea of joining the farming profession, most children of fruit and vegetable traders in urban India do not want to continue in their parents' trade. Moreover, why is it that most people involved in such trade do not appear to be as well off as the average urban citizen?

Of course, there are many different stages that agriculture products go through. Each has a set of traders. At each stage products are aggregated and disaggregated as per type and quality and it is difficult to generalize. To cite an example that better illustrates the generic problem, take a *rediwaala* (vegetable seller pushing a hand cart), who needs to buy the produce from the local *mandi* or another large wholesaler in the morning. He either has his own funds or has to take credit on very poor terms. The terms are poor because the risk is high. If the produce is not sold in time, the bulk of it could become worthless.

There is uncertainty about how the police will behave on that day and that adds to the risk; the

Agriculture GDP Growth (YoY %)



Source: Central Statistical Organization

Fruits and Vegetables (WPI)

2005-06	8.11%
2006-07	3.83%
2007-08	11.83%
2008-09	8.51%
2009-10	9.77%
2010-11	16.56%
2011-12	7.48%
2012-13	8.62%
2013-14	23.49%

neighbourhood he services has a guard who may just not let him enter that day; there may be a storm during his peak sale time; or a VIP may pass by where he normally stands and the police may just close off the whole area; there could be a raid on that day and his cart may be confiscated. There are multiple risks. All of these are very valid risks that need to be priced into the credit and eventually priced into his selling price.

Uncertainty and associated risks are the most important reasons why more people are not entering this profession. Besides, there are explicit entry barriers. In some cases the police do not let other *rediwaalas* enter a particular neighbourhood. In others, cartels operate in the *mandi* where he buys his goods from and new entrants are not encouraged. There may be an informal or formal association that an outsider is unable to break into. In other cases, he needs a license from the municipal body to ply his cart which is extremely difficult to obtain. In some parts of India *jati* (caste) based associations control certain segments of the trade and others are unable to enter.

The third kind of problem has to do with the simple cost of selling. First, consider the time sensitivity of the produce. Whatever is not sold may need to be re-aggregated and, once a certain minimum volume is attained, stored for yet another try for the evening sale. This is also quite costly and further adds to the price. Note that the entry barriers and the risks discussed earlier further make this re-aggregation more difficult. To all of this add the cuts taken by the guard, the policemen, the municipal inspector and the domestic help (or buyer's representative).

There is a fourth problem that experts rarely talk about but which may be the most important constraint impacting urban trade in fruits and vegetables: the knowledge, understanding and skill of dealing with problems one, two and three. This 'technology of urban trade' takes some months and years to understand and perfect. There is learning by doing, in that older entrants have a certain advantage over newer ones.

First: large corporate traders are not a solution. An economy where corporate traders open up fresh fruit and vegetable stores in the neighbourhood markets will help improve conditions for consumers but will not help the farmer much. They will face similar problems faced by the *rediwaala*; the costs of aggregating and disaggregating being higher for them. Moreover, corporate organizations have

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their own costs of management hierarchy that the rediwaala is far more efficient at. That is precisely the reason why corporate houses have not been able to succeed in the urban food trade in India. The latest models for corporate traders one hear of are that they will supply to the *rediwaala*. Actually even these will not work, as they will soon realize.

Second, co-operatives are also not a solution. Sellers or buyers co-operatives may help improve conditions somewhat but will not solve the problem. The reason is the same as explained earlier and a little bit more. Co-operative action requires a high level of coordination. In segments, where conditions products quality and prices change on an hour-by-hour basis though, co-operative action can rarely supply the kind of dynamism required.

The fact that corporates or co-operatives are not the key answer does not mean that that they should not be allowed, only that they should not be depended upon. So where is the answer? It lies in simplifying the environment for fruits and vegetable traders in urban areas including the *rediwaala*, the roadside vendor, the small time seller and their suppliers. This would be possible through correcting the municipal laws, providing the necessary flexibilities in urban infrastructure, allocation and policing of such vendors in or near urban public spaces, creating an environment facilitative of creation of micro-cold storages closer to major markets and residential areas. Moreover, it is also important to have a complaint redressal mechanism for problems that vendors have with police, municipal inspectors and other law enforcing agencies.

Can it be done and who will do it? How long will it take? How much will it cost? It can be done and it will be done by all tiers of the government. At the national level, it involves in giving direction through an advisory; at the state level through active guidelines for lower level functionaries and

monitoring; and at the city level through pro-active implementation by urban local bodies.

It will take as long as one wishes it to take but it will have to be first implemented at the city level. Simply publicizing such direction creates its own pressure groups though; both among the traders and from the consumer side that will help change in the right direction – not work against it. Perhaps more importantly, it will cost nothing or next to nothing.

The net result of such an environment would be that a large part of the risk and uncertainty would be reduced leading to lower risk premia; moreover corruption and other cost of transactions would also be reduced. This simpler trading environment would also lead to greater healthy competition among traders. Both consumers and farmers will be benefitted (the exact extent will, of course, depend upon the product and area specific factors).

Apart from a few scattered examples – the technology of trade in fruits and vegetables has

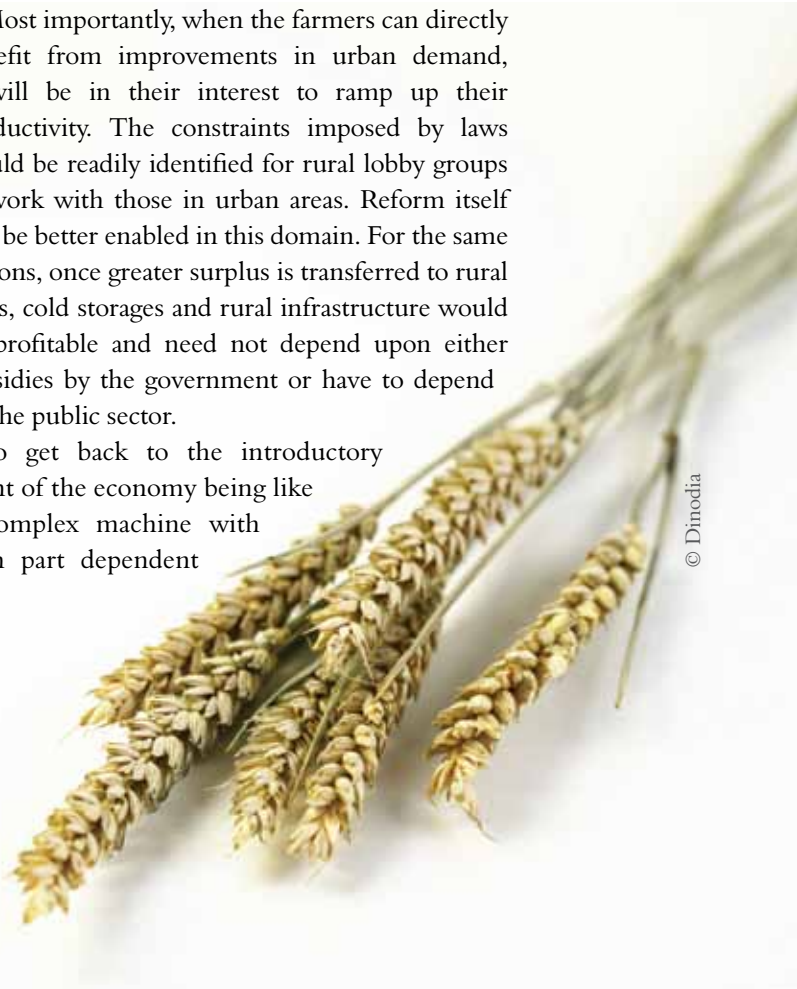
A trading environment that is simpler will encourage healthy competition among traders. Such an environment has lesser risk and corruption and also benefits consumers and farmers

not changed much since before Independence. Once such bottlenecks are eased, investment will automatically flow into this sector – whether it is through a multinational or a co-operative or a large trader or, for that matter a *rediwaala*.

Improving the environment for urban trade is the key solution for the rural farmer. How will this connect to the farmers? Greater competition and healthy economic environment will create a direct linkage between the farmer and the consumer through the trading mechanism – this linkage is currently hindered. This has also driven the bulk of these activities into the informal or unorganized sector. There is no reason why the *rediwaala* and roadside vendor cannot work in the formal sector for instance.

Most importantly, when the farmers can directly benefit from improvements in urban demand, it will be in their interest to ramp up their productivity. The constraints imposed by laws would be readily identified for rural lobby groups to work with those in urban areas. Reform itself will be better enabled in this domain. For the same reasons, once greater surplus is transferred to rural areas, cold storages and rural infrastructure would be profitable and need not depend upon either subsidies by the government or have to depend on the public sector.

To get back to the introductory point of the economy being like a complex machine with each part dependent



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Since trade is at the centre of any economic activity, it is the transmission mechanism that transfers the right set of directions and incentives between the buyer and the producer

on how other parts function, correcting one part will have a beneficial impact on another and the whole machine will run better. Since trade is at the centre of any economic activity, it is the transmission mechanism that transfers the right set of directions and incentives between the buyer and the producer. The solution is to get agricultural trade right and to first concentrate on urban areas. The rural areas will self-correct or force the government to correct the problems they are facing.

The government impacts the economy through three important tools – taxation and subsidies, making certain types of infrastructure, goods and services available and implementing order through laws regulations and other measures that tell people what they can or cannot do.

It is always intellectually easy to recommend working on all fronts simultaneously but that never occurs as intended. All of implementation is about prioritization. One can change laws in the upstream part of the value chain – laws dealing with farming, the farmer-trade interface in rural areas, the APMC Act, the Essential Commodities Act and such others. They cannot have an impact since it is the last mile of the value chain where the key problem exists. Once the last mile of the value chain is fixed – consumer-retailer-wholesaler – any improvements upstream will quickly be transferred downstream. Hence, if one does have to prioritize, the downstream problems are far more critical to correct and need to be at the top of the priority list. •

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COVER STORY

FARM SECTOR COMPLEXITIES

Time to Reconcile Conflicting Poll Promises

Naresh Minocha

The Narendra Modi government would have to search for a magic wand to honour the conflicting and ambitious electoral promises given to farmers and consumers in the Bharatiya Janata Party (BJP) manifesto for the Lok Sabha polls.

NARESH MINOCHA
Senior economic journalist, specializing in Indian agriculture

As magic wands do not exist in real politik, the only option before the government is to reconcile the conflicting promises and prepare a middle path for sustainable five per cent or more annual growth in agriculture. This is a pre-requisite for moderating food inflation. Robust and diversified growth of agriculture including animal husbandry are also vital for reviving manufacturing and for sustaining services.

Even a recent report on Indian agriculture from the World Bank has noted: "at a long-term trend rate of growth of three per cent, agriculture has underperformed relative to its potential".

Having secured absolute majority in Lok Sabha, the BJP-led National Democratic Alliance (NDA) must now articulate and transform its resolve for farm sector into realizable specific targets and strategies. It also has to weave into the party's vision for agriculture certain crucial missing elements to make the promises realizable and synergetic.

The missing elements include institutional and legal reforms; discarding flip-flop agricultural export-import policies, re-distributing subsidies in the entire national food security chain; eliminating colossal food wastages due to woefully deficient storage infrastructure; embracing new technologies including genetic engineering and adopting innovative approaches.

The government has to prepare a blueprint for agriculture growth-led revival of the economy. From this would emerge opportunities for entrepreneurship and employment for millions. Before preparing a pragmatic strategy for rejuvenating agriculture and for injecting adrenalin in both the agri-inputs and agro-based industries, policymakers have to first take a hard look at BJP's electoral promises.

BJP's manifesto says that its government would "take steps to enhance the profitability in agriculture, by ensuring a minimum of 50 per cent profits over the cost of production, cheaper agriculture inputs and credit; introducing latest technologies for farming and high yielding seeds and linking MGNREGA (Mahatma Gandhi National Rural Employment Guarantee Act) to agriculture".

The proposal to fix a minimum support price (MSP) for crops with a 50 per cent mark-up over cost of production conflicts with the BJP's "immediate task" of taming inflation. Similarly, the move to provide cheaper agri-inputs clashes with the objective of reining in inflation, subsidies and fiscal deficit (See Box: *Agenda for Crop Pricing Reforms on the Horizon*).

Even the proposal to set up a price stabilization fund (PSF) to manage periodic volatility in food prices would conflict with the objective of checking the fiscal deficit, as the proposed fund would require a huge corpus to create significant impact on prices. Ironically, the previous BJP-led NDA had rejected an expert group's recommendation to set up PSF for cushioning the impact of volatility in prices of petroleum products in 2001.

Most political parties fail to think holistically when preparing their manifesto. They just want to dole out promises to appease all sections of the electorate. The harsh and hard reality of reconciling conflicting and contradictory promises gradually dawns on the party or alliance that wins the elections to form a new government.

The Bharatiya Janata Party-led National Democratic Alliance must articulate and transform its resolve for the farm sector into realizable specific targets and strategies

By the time the wisdom gets fully diffused in the government, it is too late as the Congress-led United Progressive Alliance (UPA) discovered through a humiliating defeat during the recent elections. The UPA inadvertently hurt farming through faulty implementation of MGNREGA and through its failure to make clear-cut provisions for providing remunerative MSPs for food crops under the National Food Security Act (NFSA).

If the current government wants to return to power in 2019, it has to draw lessons from the UPA's mistakes. It thus has no option but to immediately reconcile conflicting promises. If it does so and explores all options to honour promises, the easiest and best choice would be the agriculture-led revival

of economy. This should mark the beginning to achieve 125 million Indian dreams.

Instead of promising the moon to both growers and consumers, the government should offer durable and predictable policies especially in the realm of foreign trade. The country's foreign trade policy has always been biased towards the consumers and is often tinkered the moment media starts orchestrating news about spurt in prices of onion, potatoes, sugar and other commodities.

If the government wants to build a competitive and credible agri-export base, it should refrain from making policy interventions such as hiking minimum export price or suspending export of a particular commodity for a short period. It should instead manage seasonal volatility in prices of perishables through other initiatives, including domestic market reforms.

To encourage crop diversification and to check alarming reliance on imports, the government should opt for calibrated increase in import duty on oilseeds and pulses. Increase in MSPs alone would not encourage farmers to grow these crops in a big way.

The government also has to revisit the domain of subsidies. It should consider direct or indirectly administered subsidies to agriculture and to the consumers as the total subsidy bill for food security. It must consider farmers, consumers and intermediaries such as fertilizer industry through which subsidy is routed as integral components of food security chain.

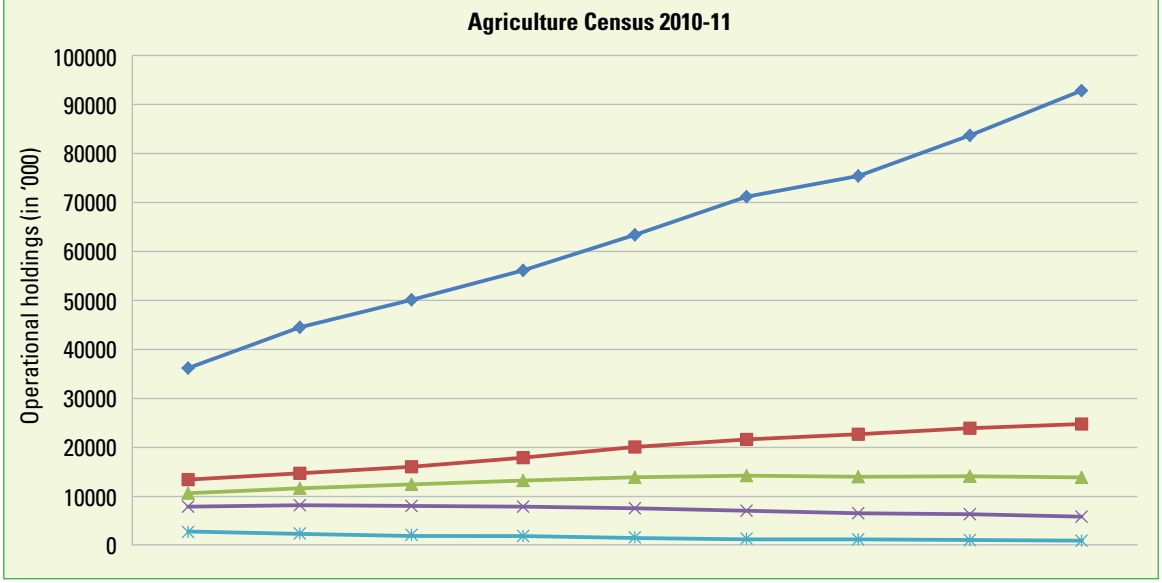
Food security should not just mean providing affordable food to the poor. It also means ensuring self-reliance in food production.

Keeping in view resource constraint and the need to bridle the growth in subsidies, the government should first aggregate all direct and indirect subsidies given to both consumers and agriculture sector. The aggregate should be considered as subsidy for the national food security. It should be pegged at three per cent of the gross domestic product (GDP), keeping in view the challenges of farming as well as feeding the ever-exploding population and the resulting increase in absolute number of poor people.

This aggregate subsidy should then be divided into 60:40 or 70:30 ratio between agriculture and consumption sectors. The logic for this ratio is that it makes sense to first subsidize production of food to attain self-sufficiency and then subsidize consumption of food, which would have to be imported in massive quantities as is the case with edible oils and pulses at present.

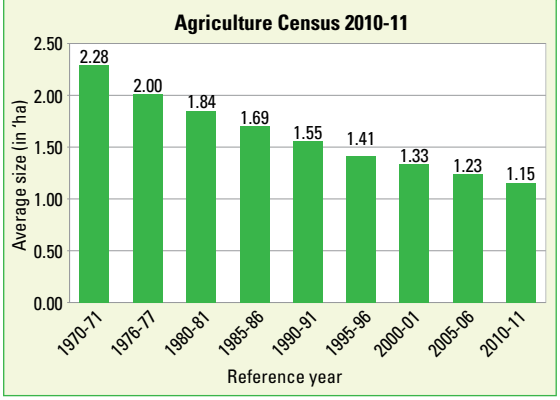
Within the agriculture sector, the farming should

Number of Operational Holdings as per Different Agriculture Censuses



	1970-71	1976-77	1980-81	1985-86	1990-91	1995-96	2000-01	2005-06	2010-11
Marginal	36200	44523	50122	56147	63389	71179	75408	83694	92826
Small	13432	14728	16072	17922	20092	21643	22695	23930	24779
Semi-Medium	10681	11666	12455	13252	13923	14261	14021	14127	13896
Medium	7932	8212	8068	7916	7580	7092	6577	6375	5875
Large	2766	2440	2166	1918	1654	1404	1230	1096	973

Average Size of Operational Holdings as per Different Agriculture Censuses



get lion's share of subsidy, followed by livestock and fisheries, keeping in view the importance and contribution of each segment to food security.

In the farming sector, barring the fertilizer subsidy and interest subsidy on farm loans, all other subsidies are scheme-related and are thus thinly spread over too many schemes. The overlap of schemes and their organization oversight structure and subsidies should be eliminated to achieve better results in demonstration of new agronomic packages and dissemination of new techniques.

The government should preferably restrict subsidies to only fertilizers, credit, crop insurance, drip and sprinkler irrigation systems, watershed development projects and agri-infra projects such as market terminals covered by viability gap funding scheme.

In the fertilizer sector, the government must end the bias for urea by increasing its price in phased manner and by bringing it under nutrient-based subsidy scheme. The subsidy rates for different nutrients should be restructured to promote balanced use of fertilizers.

As far as revamping the MGNREGA is concerned, studies conducted in different states have reported that implementation of this statutory scheme during the peak sowing and harvesting season results in labour shortages and increase in wages.

Increase in farm wages is welcome but it should be reflected in hike in MSP, which would necessitate increase in food subsidy, apart from fueling market prices. It is pertinent to quote a study titled 'Impact of MGNREGA on Wage Rates, Food Security and Rural Urban Migration–a Study in Assam' conducted by Assam Agricultural University in 2011.

The study says: "Labourers prefers to work under MGNREGA on account of less supervision and less work that too in groups with some other facilities

AGENDA FOR CROP PRICING REFORMS ON THE HORIZON

The Bharatiya Janata Party's electoral promise that it would "take steps to enhance the profitability in agriculture, by ensuring a minimum of 50 per cent profits over the cost of production" is not a new idea. It was first recommended by National Commission on Farmers (NCF), in its fifth and final report submitted in 2006. The erstwhile Congress-led United Progressive Alliance (UPA) government rejected this recommendation.

In April 2013, the UPA government, however, constituted a committee for review the methodology for computation of minimum support prices (MSPs) under the chairmanship of Dr Ramesh Chand, director, National Centre for Agricultural Economics and Policy Research (NCAP). It is not yet clear whether the committee has submitted its report and whether it endorsed with NCF's recommendation. The committee, in all probability, would come out with a package of reforms, if its terms of reference are any indication. More of this later.

The NCF recommended that "the MSP should be at least 50 per cent more than the weighted average cost of production. The 'net take home income' of farmers should be comparable to those of civil servants."

It suggested that the Commission on Agricultural Costs and Prices (CACP) should be an autonomous statutory organization with its primary mandate being the recommendation of remunerative prices for the principal agricultural commodities of both dry-farming and irrigated areas.

The NCF stated: "CACP should become an important policy instrument for safeguarding the survival of farmers and farming. Suggestions for crop diversification should be preceded by assured market linkages. The membership of CACP should include a few practicing farm men and women. The terms of reference and status of CACP need review and appropriate revision".

The NCF's recommendation was echoed by Parliamentary Standing Committee (PSC) on Agriculture during the 14th Lok Sabha. In its report on 'Pricing Policy of Agricultural Produce'

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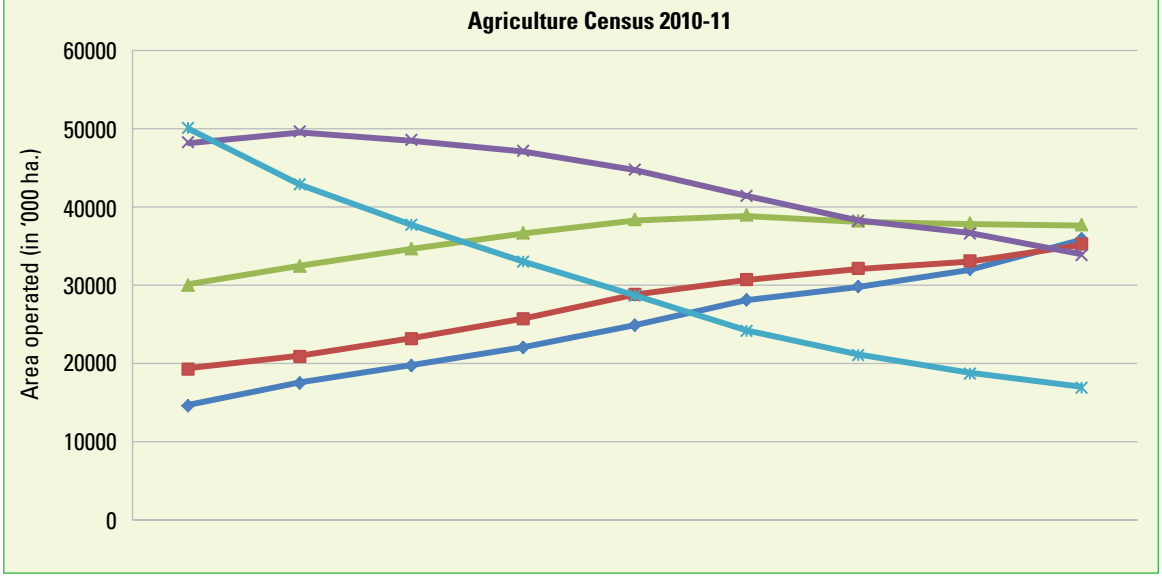
created by it. As a result, farmers are bound to compete among themselves to offer higher wages to combat with the shortage of labourers during the peak season and it would increase the cost of production. If farmers are not able to bear the expenditure incurred in farming, they have no option in their hand but to switch over from farming to other activities to earn their livelihood. Probable consequences arising out of this need to be assessed properly so that the MGNREGA cannot stand as an obstacle for farming community".

The Parliamentary Standing Committee (PSC) on Agriculture in its report on 'Pricing of Agricultural Produce' submitted in March 2014, has noted that the MGNREGA guidelines of May 2012 have included activities having significant impact on agriculture. The activities brought under the MGNREGA include development of irrigation facilities, digging ponds, creating farm bunds and land development and such others.

The PSC stated: "It is high time that an objective assessment is undertaken of the impact of MGNREGA on various aspects of agricultural operations and take such remedial measures as may be necessary to overcome the adverse impact, if any".

The government should execute the BJP's

Area Operated by Operational Holdings as per Different Agriculture Censuses



	1970-71	1976-77	1980-81	1985-86	1990-91	1995-96	2000-01	2005-06	2010-11
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Small	19282	20905	23169	25708	28827	30722	32139	33101	35244
Semi-Medium	29999	32428	34645	36666	38375	38953	38193	37898	37705
Medium	48234	49628	48543	47144	44752	41398	38217	36583	33828
Large	50064	42873	37705	33002	28659	24160	21072	18715	16907

MGNREGA should provide for training and employment of rural labour and maintenance of farm equipment during peak season. This would help lower machinery rents

electoral promise to dovetail the MGNREGA to agriculture to reduce the scheme's adverse impact on cost of crop production and food prices.

An innovative way to achieve this would be to upgrade the successful primary agricultural co-operative societies (PACs) from lending outlets to one-stop shops for all inputs including renting of agricultural implements and machinery.

In addition, the government can finance setting up a chain of farm equipment rental centres under the aegis of entities such as Small Farmers' Agribusiness Consortium.

The MGNREGA should also provide for training and employment of rural labour in operation and maintenance of farm equipment during peak season. This would help the providers of rented machinery charge affordable rates from farmers.

The fragmentation of farm holdings and labour shortages have created a potential market for farm mechanization services, which a few companies such as Coromandel International Limited (CIL) have gauged appropriately.

CIL's rural retail chain named Mana Gromor Centres (MGCs) provides farm mechanization services (FMS) mainly in Andhra Pradesh. CIL has already resolved to scale-up FMS, for which it recently decided to form a joint venture (JV) with two Japanese companies to manufacture farm mechanization equipment such as rice transplanters.

It is appropriate here to quote the recommendations made by an agriculture ministry sponsored study on 'Long-term Mechanization Strategies at the National Level' undertaken by Indian Agricultural Statistics Research Institute (IASRI). The study, completed in 2006, noted that the average size of operational holdings is shrinking in all states due to continuing fragmentation and the percentage of marginal, small and semi-medium operational holdings is increasing. This is making individual ownership of agricultural machinery progressively more difficult.

Continue from Page 27

AGENDA FOR CROP PRICING REFORMS ON THE HORIZON

submitted in July 2006, the PSC recommended that the CACP "should take into account all the minor and major cost factors including risk factors natural as well as man-made and must take into account the profit margin of at least 50 per cent of the cost price, that a farmer should get to run his household, perform his social and family responsibilities and rear his animals etc".

At the fag end of the 15th Lok Sabha, the PSC again pitched for acceptance of the NCF's recommendation. In its report on 'Pricing of Agricultural Produce', submitted in March 2014, the PSC stated that it not agree with the view of Department of Agriculture and Co-operation (DAC) that "prescribing an increase of 50 per cent on cost of production as recommended by the National Commission on Farmers headed by Prof. MS Swaminathan may distort the market."

According to the report, "The Committee urge that steps should be taken to fix remunerative pricing with 50 per cent profit margin over cost of production, for all the 24 crops (covered under MSP scheme) without any further delay as already recommended by this Committee in their Forty-First Report (14th Lok Sabha) in the year 2007-08".

The PSC noted that the estimates of costs of production used by the CACP suffered on account of small sample size, outdated data and poor quality of collection. The sample size is as small as 8,400 holdings. The CACP report is based on outdated data due to time lag of two to three years between the time of collection of data and finalization of report by CACP.

The report says: "Further, according to a former chairman of the CACP, the methods of data collection and cost calculation by some State Agricultural Universities are questionable. There is a need to broad base the data, broad-base the machinery and bridge the time gap to make the basis of MSP realistic. The Committee desire that immediate action be taken to address the aforesaid shortcomings and ensure that CACP's exercise of fixing MSP is meaningful". While PSC hoped the Dr Ramesh Chand Committee "will examine the shortcomings in the present system of MSP calculation".

It is also required to examine the existing cost concepts for the purpose of fixing minimum support prices and suggest various factors including cost of transportation, marketing, processing, storage and such others to determine MSP. Besides, the committee may also analyse the appropriateness of existing methods followed in imputing the value (i) family labour; (ii) rental value of land; (iii) interest on capital; (iv) depreciation on fixed items such as tractors, bullocks and such others and recommend measures for improvement so as to make them more realistic.

The terms of reference of the committee also empowers it to examine the existing structure of tariff, taxes, credit, market and such others and to suggest various measures to make it most competitive and remunerative to the farmers in the wake of trade liberalization and globalization and also to encourage diversified agricultural growth.

State-wise Ultimate Irrigation Potential

Sl.	State/UT	Major & Medium Surface Water	Minor Irrigation		Total
			Surface Water	Ground Water	
1	2	3	4	5	7
1.	Andhra Pradesh	5000	2300	3960	11260
2.	Arunachal Pradesh	0	150	18	168
3.	Assam	970	1000	900	2870
4.	Bihar	5224	1544	4120	10888
5.	Chhattisgarh	1147	81	490	1718
6.	Goa	62	25	-	87
7.	Gujarat	3000	347	2756	6103
8.	Haryana	3000	50	1462	4512
9.	Himachal Pradesh	50	235	68	353
10.	Jammu & Kashmir	250	400	708	1358
11.	Jharkhand	1276	354	830	2460
12.	Karnataka	2500	900	2574	5974
13.	Kerala	1000	800	879	2679
14.	Madhya Pradesh	4853	2111	9250	16214
15.	Maharashtra	4100	1200	3652	8952
16.	Manipur	135	100	369	604
17.	Meghalaya	20	85	63	168
18.	Mizoram	0	65	5	70
19.	Nagaland	10	70	5	85
20.	Odisha	3600	1000	4203	8803
21.	Punjab	3000	50	2917	5967
22.	Rajasthan	2750	600	1778	5128
23.	Sikkim	20	50	0	70
24.	Tamil Nadu	1500	1200	2832	5532
25.	Tripura	100	100	81	281
26.	Uttar Pradesh	12154	1186	16295	29635
27.	Uttarakhand	346	14	504	864
28.	West Bengal	2300	1300	3318	6918
Total States		58367	17317	64066	139750
Total UTs		98	20	26	144
Grand Total		**58465**	**17337**	**64092**	**139894**

(Unit: '000 Hectares) *Source: Central Water Commission, Ministry of Water Resources*

The study advised the government to "encourage custom hiring operation of tractors, power tillers and farm machinery through training, financial incentives, subsidized loans and adequate financing to allow procurement of high capacity equipment by the custom operator to ensure sufficient turn over and income". It also recommended the organization of "farm machinery co-operatives at selected locations".

The ever-shrinking size of farm holdings is an issue that should figure in the BJP's proposed Land Use Policy. The Narendra Modi-led government should provide for legal and institutional arrangements for consolidation of holdings, apart from prodding reluctant state governments to allow contract farming, which ensures provision of otherwise unaffordable farm mechanization services, latest inputs and technology.

As observed by an exhaustive study captioned 'Republic of India-Accelerating Agricultural Productivity Growth' released by the World Bank in May this year, "the findings on land fragmentation and the association of profitability with farm size ultimately suggest that some small farms may be getting too small to remain efficient or viable, despite the technical relationship between farm size and yield".

The study says: "these findings lend new urgency to reforming the tenancy laws and legalizing land

Food storage, including cold storage, is yet another area that deserves top priority as food saved is food grown. It is also the key to reducing the price of perishables

lease markets. More efficient lease markets can help to consolidate land in the hands of the more productive farmers, perhaps by improving access to land for younger and more educated farmers, and can provide inefficient or unviable farmers the security to seek off-farm work without fear of losing their primary asset".

The importance of reforms in land use policy has also been driven home well by Parliament's Estimates Committee in its action taken report on its earlier report on crop diversification submitted in February 2014.

The committee has deplored the fact that the agriculture ministry has not acted on its original recommendation to set up an expert committee to study pros and cons of proposals such as land leasing and promoting land sharing companies.

Food storage, including cold storage, is yet another area that deserves top priority as food saved is food grown. It is also the key to reducing the price of perishables.

According to a report released by the US multinational, Emerson Climate Technologies, in November 2013, the country has 6,300 cold storage facilities at present unevenly spread across the country, with an installed capacity of 30.11 million metric tonnes. This capacity needs to be doubled to 61 million metric tonnes to sustain the present level of production of fruits and vegetables. This would require an investment of ₹55,000 crore.

The report captioned 'The Food Wastage & Cold Storage Infrastructure Relationship in India – Developing Realistic Solutions' points out that "waste is responsible for 50 per cent of the current cost of milk in India".

Quoting the Central Institute of Post-Harvest Engineering and Technology, the report says that 18 per cent of the fruit and vegetable output valued at ₹13,300 crore is wasted annually.

As for the BJP's proposal for unbundling of Food Corporation of India (FCI) operations into procurement, storage and distribution for greater efficiency, the objective can be achieved by encouraging competition without tampering with FCI's organizational structure.

The centre must encourage all states to participate in its decentralized procurement scheme. It must encourage setting of modern food silos under all formats across the country to reduce grain losses and to streamline public distribution system.

The competition from state government-owned procurement agencies and co-operatives, coupled with procurement by private traders, would force FCI to pull up its socks.

As regards the manifesto's declaration to develop a single 'National Agriculture Market', the idea

State-wise Extent of Net Sown Area and Rainfed Area (2009-10)

Sl.	States	Net Sown Area	Net Irrigated Area	Rainfed Area
1.	Andhra Pradesh	9991	4214	5777
2.	Arunachal Pradesh	212	56	156
3.	Assam	2811	197	2614
4.	Bihar	5332	3394	1938
5.	Chhattisgarh	4683	1323	3360
6.	Goa	132	23	103
7.	Gujarat	10302	4336	5966
8.	Haryana	3550	3069	481
9.	Himachal Pradesh	542	108	434
10.	Jammu & Kashmir	735	317	418
11.	Jharkhand	1250	102	1148
12.	Karnataka	10404	3390	7014
13.	Kerala	2079	386	1693
14.	Madhya Pradesh	14972	6892	8080
15.	Maharashtra	17401	3254	14147
16.	Manipur	233	52	181
17.	Meghalaya	283	62	221
18.	Mizoram	123	10	113
19.	Nagaland	361	73	288
20.	Odisha	5574	2180	3394
21.	Punjab	4158	4073	85
22.	Rajasthan	16974	5850	11124
23.	Sikkim	77	14	63
24.	Tamil Nadu	4892	2864	2028
25.	Tripura	280	58	222
26.	Uttarakhand	741	338	403
27.	Uttar Pradesh	16589	13457	3132
28.	West Bengal	5256	3112	2144
29.	A & N Island	15	0	15
30.	Chandigarh	1	1	0
31.	D&N Haveli	20	4	16
32.	Daman & Diu	4	0	4
33.	Delhi	22	22	0
34.	Lakshadweep	3	1	2
35.	Puducherry	19	16	3
Total		**140021**	**63254**	**76767**

(in thousand hectares)

Source: Directorate of Economics & Statistics, Department of Agriculture & Cooperation, Ministry of Agriculture

has not evolved into realizable goal in spite of recommendations from various committees for several years.

Prime Minister Narendra Modi should convene a special meeting of National Development Council (NDC) to seek the co-operation of all chief ministers in developing the country into a single market for the interest of growers as well as consumers.

The NDC or Inter-State Council should also be used as a forum to resolve all contentious issues relating to sharing of river waters by the states, including inter-basin transfers without which the BJP manifesto's promise of 'har khet ko paani' (water for every farm) would remain electoral rhetoric.

As it is, the total sown area exceeds the ultimate irrigation potential. It is thus technically not possible to provide water to all fields under the existing irrigation framework. The country's ultimate irrigation potential under the existing

India's ultimate irrigation potential, including major, medium and minor projects, is estimated at 140 million hectares, whereas the total area under operational holdings is 159.59 million hectares

framework of major, medium and minor irrigation projects including tubewells is estimated at 140 million hectares, whereas the total area under operational holdings is 159.59 million hectares.

The inter-linking of rivers, building new dams and barrages, coupled with large-scale adoption of drip irrigation system, hold the key to realizing the goal of providing water to every field over the long run. This is also the only way to avert worsening of water crisis caused by population explosion and increase in demand from for water from all sectors.

As put by an official panel on 'more crop and income per drop of water', "basin transfer of water from surplus to deficit basins could help to bring additional irrigation potential. This will, however, have to be done on a win-win mode for all states concerned."

In its report submitted to the Ministry of Water Resources in October 2006, the panel noted that "the projections for future population and food requirement of the country indicate that the population of India may stabilize around 1.6 to 1.7 billion by 2050 AD and that would require about 450 million tonnes of food grain annually at the required level of food consumption. Area wise it is necessary to provide irrigation to at least 130 million hectares (mha) for food crops alone and in an area of 160 mha for all crops to be able to meet the demands of the country in 2050 AD and ensure food security".

These projections call for a joint centre-state initiative to give a big push to multi-segment development of irrigation infrastructure over the next 30 years or so.

The Modi government should unveil a time-bound programme for water use efficiency.

According to the Report of the Steering Committee on Water Resources and Sanitation for 12th Five Year Plan (2012-2017): "The gap between irrigation potential created (IPC) and irrigation potential utilized (IPU) is increasing year after year and as per the most updated information, the gap is about 18 per cent".

It adds: "Poor operation and maintenance not only adversely affects the efficiency of MMI (major and medium irrigation) projects but also leads to relatively higher cost of deferred maintenance". This again requires the centre to come up with something workable to induce states to pay urgent attention to these and other issues.

Indeed, the Modi government would have to adopt a carrot-and-stick approach towards the states to ensure that they do not neglect agriculture and irrigation under the garb of decentralization. ●

INTERVIEW

Food Security Initiatives Far More Critical than Bullet Trains or a Blip in the Sensex

JEAN DRÈZE,
Economist

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From issues around the structural imbalance in agriculture to the National Rural Employment Guarantee Act, the National Food Security Act or cash transfer vis-à-vis food distribution, economist **Jean Drèze**, who was member of the erstwhile National Advisory Council, discusses varied aspects around India's farm sector and poverty alleviation efforts with **Paranjoy Guha Thakurta**

PARANJOY GUHA THAKURTA: ***Is India unique among large countries for its structural imbalance relating to share of agriculture in gross domestic product (GDP) and share of agriculture in total employment? The share of agriculture in India's GDP is 16-17 per cent but agriculture still accounts for half the total employment in the country. How serious and problematic is this imbalance? In many other countries, as GDP has grown, the share of agriculture in total employment has come down commensurately. Why has this not happened in India?***

JEAN DRÈZE: I am not aware that there is anything strikingly unusual in India about the share of agriculture in GDP or in total employment. The figures that you cite are not atypical of other countries at a similar level of per-capita income. Also, the share of agriculture in total employment is certainly declining in India. What is unusual in India is the large share of services in total employment and the small share of the manufacturing sector. No doubt the share of employment in agriculture would be smaller today had there been faster growth of the manufacturing sector and especially of labour-intensive industries. However, the share of agriculture in total employment today would look abnormally high only to someone who thinks of India as some sort of middle-income country. That illusion is quite common but the fact is that India is still a poor country, despite robust economic growth in the recent past.

PG: ***The National Rural Employment Guarantee Act (NREGA) has been held responsible for rising costs of farm labour. Is this true? If so, is this a desirable phenomenon?***

JD: The evidence suggests that the Act has led to a modest increase in the rate of growth of agricultural wages, from close to zero during the five years that preceded NREGA to something like three per cent or four per cent per year in real terms during the next five years. Women's wage rose more than men's wages. I think that these are welcome developments. Economic growth cannot translate into better living standards for poor people unless their real wages increase. Most farmers are also part-time labourers. They stand to gain from higher wages.

PG: ***If the main objective of NREGA is to increase job opportunities, would it not be better to give work under the programme only during the off-peak season, when harvesting and sowing operations are not taking place? This would imply excluding providing work under NREGA for roughly three months in a year, varying from crop to crop and region to region. If this happens will the NREGA programme generate more employment without additional funding?***

JD: That is how NREGA already works in most states. There is a tacit understanding that work should be generated mainly outside the peak season. In any case, NREGA is not an attractive employment option for most workers during the peak season, when market wages are higher and also paid more promptly than NREGA wages.

PG: ***You have observed that NREGA "is a pro-people law implemented by an anti-people system". Please elaborate. Do you think it is appropriate to devise a policy for which a system of implementation does not exist and then blame the implementation rather than the policy itself?***

JD: The fact that the system is generally insensitive and often hostile to poor people is something that you do not need to explain to the average rickshaw-walla. He knows it very well because of the way he is harassed every day by the police, the municipality and other public authorities. Similarly, the average NREGA worker knows that the gram panchayat secretary and block development officer are not exactly running around to ensure that wages are paid on time. Of course, if you learn about the NREGA from government documents that ooze with sympathy for the poor, you may get a different impression. None of this is to deny that there are many good people in the government. The general class and caste character of the bureaucracy is, however, such that many functionaries develop a tendency to rationalize their privileges and blame the victims for their predicament.

Coming to the second part of your question, the whole purpose of giving people legal rights is to alter this power imbalance. If you look at the details of the Act, many of which go back to Maharashtra's Employment Guarantee Scheme, you will notice that they reflect a keen awareness of the need to protect workers from exploitation and make the system accountable to them. As one might expect, the central and state governments have resisted these accountability provisions, whether it is the obligation to pay an unemployment allowance when work is not given, or people's right to compensation when wage payments are delayed, or other similar provisions. The implementation of the Act is a constant battle but it is a battle worth fighting.

PG: ***You have supported the enactment of the National Food Security Act (NFSA). There is, however, a view that since most beneficiaries are likely to be farmers, the money would have been better spent if it was used to improve crop yields and profits for farmers. It is argued that if the government invested more in agriculture, it would have been better for farmers***

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PG: ***Is a system of cash transfer not better than food distribution, since the former reduces the chances of leakages taking place and ensures subsidies are better targeted; that the funds reach the intended beneficiaries? Is a system of transferring money more difficult than distributing grains?***

JD: Cash transfers are certainly appropriate in some circumstances. For instance, I support old-age pensions in cash but am against phasing out the Public Distribution System (PDS) until such time as a demonstrably superior system of cash transfers, acceptable to poor people, is in place. Today, the infrastructure required for effective cash transfers is lacking in most states and especially in the poorer states. Meanwhile, the PDS is in place and huge food stocks are available. The food procurement system has its own momentum and procurement levels are already well above the amount required to implement the NFSA. The Act can be seen as an attempt to make better use of food resources that have been wasted on a massive scale during the last 12 years. Recent studies also suggest that the poor have valid reasons to prefer an efficient PDS to cash transfers, at least in the present circumstances. Perhaps one day, cash transfers will be appropriate and, if so, the Act does not preclude a transition from food to cash. A premature phasing out of the PDS in favour of cash transfers, however, is likely to cause havoc, especially in the poorer states.

NREGA has led to a modest increase in the rate of growth of agricultural wages, from almost zero in the five years that preceded it, to around 3-4 per cent per year in the next five

than feeding them and that this would be preferable way for the government to spend its finite and limited resources. What are your views in this regard?

JD: First of all, let me clarify that I am as much a critic as a supporter of the NFSA. I often find myself defending the Act because it has been a constant target of misguided or uninformed criticism. The details of the Act, however, are certainly not the way I would have liked them to be.

Coming to your point arguing that the money would have been better used to improve crop yields is to confuse food availability with food entitlements, higher food availability is of little use if poor households do not have the purchasing power to buy food. A majority of Indian farmers are deficit farmers who grow only part of their food requirements and buy the rest. They stand to gain from food subsidies under the Act. Large farmers do not lose but there may be better ways to help them, such as better infrastructure, power supply and credit facilities. Nothing prevents the Act from being supplemented with these and other measures to support farmers as well as to promote agricultural growth.

PG: ***Should co-operatives and the government's postal department not be involved in efficiently implementing schemes of cash transfers?***

JD: The idea of converting the postal department into an effective payment agency, without discontinuing its other roles, is well worth exploring. For instance, village post offices could act as payment counters for nationalized banks. This could give a new lease of life to the postal department at a reasonable cost and provide very useful services to the rural population. For instance, it could be of great help in ensuring timely and transparent payment of NREGA wages and social security pensions. This would require a major effort to modernize rural post offices. Unfortunately, public policies in this domain, as in many others, are heavily influenced by commercial interests.

Modernizing the post office, a public institution, is not part of the corporate agenda. Instead, there are strong pressures to promote market-based models such as the "business correspondent" model.

PG: ***There is a view that if cash subsidies had been the basis of delivering subsidies, India would not have been forced to sign the peace deal World Trade Organization (WTO) meeting in Bali. Did our government give a serious thought to international trade negotiations in the WTO before finalizing the NFSA?***

JD: India's difficulties with the WTO have little to do with the act. They have to do with the unreasonable nature of the commitments that were imposed on developing countries – commitments that India has been violating for many years. The situation would have been the same without the NFSA.

PG: ***Why do you believe that the universal application of food security provisions for the entire population of India is preferable to selective or targeted food delivery schemes?***

JD: Targeting, especially targeting based on the poverty line, has two major pitfalls. First, the identification of targeted families tends to be very unreliable, leading to major exclusion errors. In the context of food security, which is held to be a basic right of all citizens, this is a serious problem. Second, targeting is divisive. It weakens public pressure for effective public services by restricting them to a minority of people who also happen to be powerless. Both pitfalls have emerged clearly in the context of the PDS. Tamil Nadu and Chhattisgarh, where the PDS is universal or near-universal, have done quite well in comparison with states that have a targeted system. Of course, universal programmes tend to be quite costly. I feel that in rural areas at least and certainly in the poorer states, the extra costs are justified considering the paramount importance of food security in people's lives. In rural areas, even relatively well-off families may be insecure. They can be hit any day by crop failures, illness, unemployment, exploitation and other contingencies. You can see the enormous relief that a

As public resources expand, however, as they do in India, there is a strong case for a more liberal use of the principle of universalism. Universal PDS brings enormous relief to people

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universal PDS brings in people's lives in states where it is already running. The case for universalism is also quite strong in many other contexts, such as elementary education, health care, school meals and employment guarantee. Its benefits are clear not only from the experiences of, say European countries where the entire edifice of the welfare state rests on the principle of universalism, but also from Indian states like Tamil Nadu. Targeting is justified in some circumstances, especially in poor countries with meagre government revenue. As public resources expand, however, as they do in India, there is a strong case for a more liberal use of the principle of universalism.

PG: ***You were a member of the National Advisory Council (NAC). What is your opinion about the way this body worked and its effectiveness in shaping policies and programmes? Were you disappointed with the way the NAC functioned?***

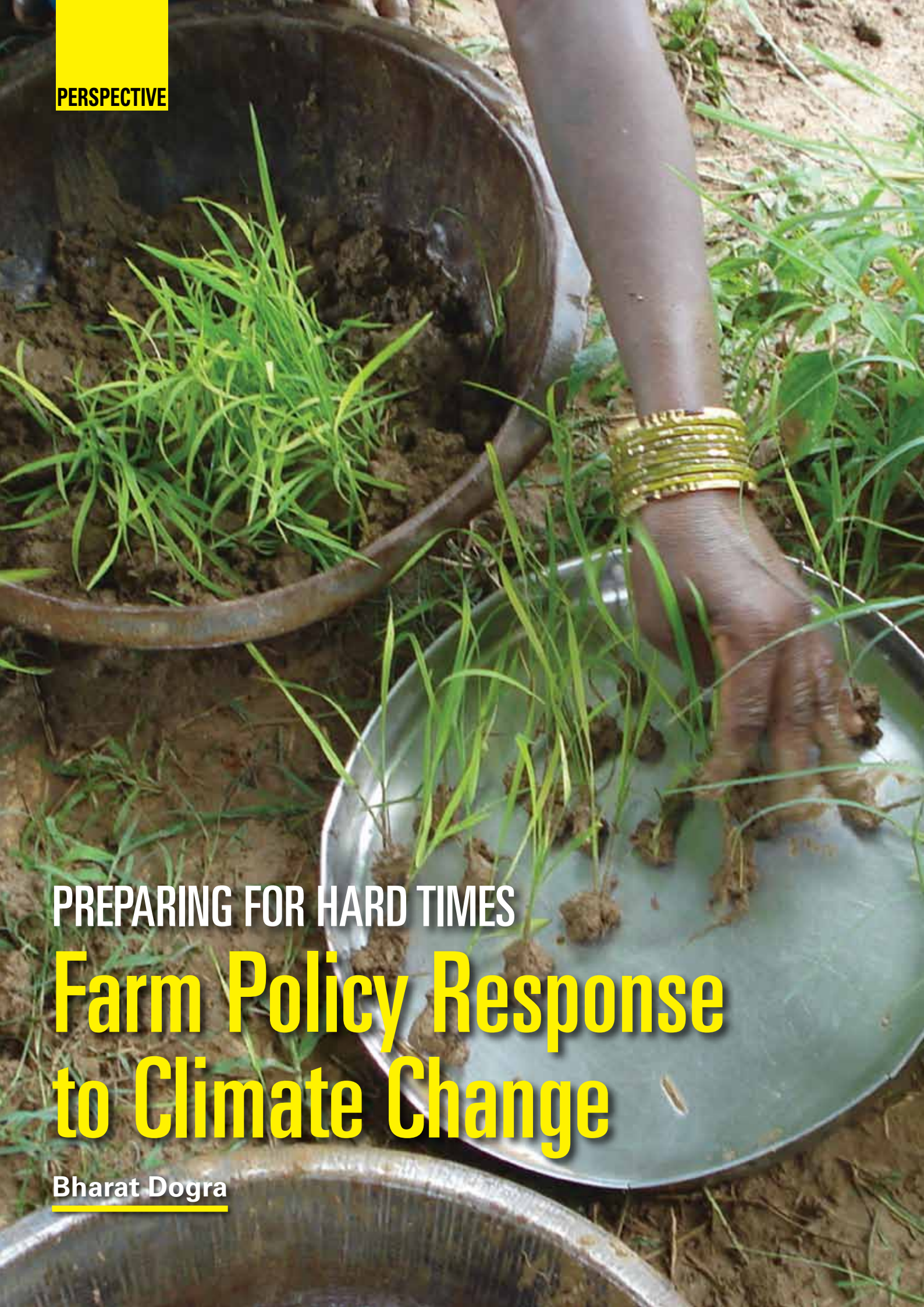
JD: The NAC was an ad hoc arrangement, capable of doing good work as well as some damage, depending on the circumstances. Under the UPA-I government, the NAC had a significant influence on social policy. It did not have anything like the power that critics claim it had but perhaps it did have too much power, by virtue of the government's accommodating attitude to the council's advice. It so happens that this power was not misused because the NAC was working within a well-defined framework – the National Common Minimum Programme. Under that framework, it did some good work. This includes not only drafting the Right to Information Act and the NREGA but also supporting other initiatives such as the Forest Rights Act and child nutrition programmes. Under the UPA-II government, however, the NAC did not achieve much. By then, the government was prepared and had learnt how to deflect the NAC – for better or worse. The absence of the Left parties from the UPA-II coalition also helped the government to stand firm. Most of the NAC recommendations were ignored, diluted or delayed. The main exception is the NFSA, an electoral promise that the government was unable to renege on, though it did its best to minimize its responsibilities under the Act.

PG: ***What do you expect to be the fate of the NREGA, NFSA and other social programmes under the new government?***

JD: The Modi government is likely to be caught between the public's demand for more extensive and effective public services and the demand of its corporate sponsors for a rollback of social programmes. As soon as he was appointed Minister for Rural Development, late Gopinath Munde acknowledged the value of NREGA and asserted his commitment to curing the main flaw of the Act: delayed wage payments. These were perceptive and reassuring comments. Let us hope that his successor, yet to be appointed, will also take a positive view of the programme.

As for the NFSA, the Bharatiya Janata Party's (BJP's) official stand is that it is too little rather than too much. Modi himself wrote to the Prime Minister on August 7, 2013 to complain that the Act guaranteed only 20 per cent of a person's daily calorie requirements. The BJP moved an amendment in Parliament seeking to expand NFSA entitlements with universal coverage: 10 kilograms of foodgrain per person per month along with pulses and edible oil. Some of this is posturing of course but the BJP's willingness to support food security initiatives is already well demonstrated in Chhattisgarh. Nothing prevents it from doing the same at the national level. That would be a far more useful demonstration of the new government's alleged capabilities than bullet trains or a blip in the Sensex. ●

PERSPECTIVE



PREPARING FOR HARD TIMES

Farm Policy Response to Climate Change

Bharat Dogra

Unexpected rain and storms during harvest season and earlier unprecedented hailstorm in many parts of the country have re-emphasized the increasingly erratic behaviour of weather in times of climate change. This year, the hailstorms have been so heavy and intense that crops over a vast area in states like Maharashtra, Madhya Pradesh and to a lesser extent in some other states were almost completely destroyed. Farmers were astonished to see huge hailstones each one of which weighed around 250 to 500 gram.

BHARAT DOGRA
Author and journalist writing on development, environment, human rights and social issues

Surprising as this may sound, much earlier some farmers in Bundelkhand region had repeatedly talked of hailstones weighing more than a kilogram falling in their village! So while scientists continue to debate several aspects of climate change, the reality of very unpredictable and erratic weather behaviour must be accepted now.

While scientists continue to debate several aspects of climate change, the reality of very unpredictable and erratic weather behaviour is now a given and must be accepted

The government of India appears to agree, as it has pointed out in the 12th Plan document, "The climate challenge facing agriculture needs to be taken seriously. Available data shows a distinct trend towards both drier and warmer weather, particularly during the last three Plan periods (1997-2012)... Each of the last three Plan periods has recorded lower mean rainfall and higher rainfall variability compared to the immediately previous period."

The document further says, "Periods prior to 1997 can be considered normal, but warming has increased at an accelerating pace since then. The 11th Plan period contained the two warmest years (2010 and 2009) ever recorded since 1900. Even the coolest year (2008) during the five years (2007-12) was the 13th warmest in the last 110 years."

The National Mission for Sustainable Agriculture (NMSA) has been planned as a part of the National Action Plan on Climate Change (NAPCC), "aimed at transforming Indian agriculture into a climate-resilient production system through adaption and mitigation appropriate measures in the domains of both crops and animal husbandry". However, to achieve this, the Planning Commission says, "it will have to go beyond programmatic interventions to bring mind-set changes required in transiting from the past focus on irrigated chemical intensive agriculture".

In fact, in recent years the need for moving away from chemical-intensive agriculture and towards organic farming has been strongly felt due to several reasons including food quality, human and animal health as well as soil health. To this one has to add climate change related issues. To reduce risks from erratic weather, it is really important that farmers use less costly technology. If they are more self-reliant, they can improve yields by making better use of local resources rather than expensive market-purchased inputs. In addition, there is a strong case for releasing resources from agri-chemical subsidies so that more resources become available for encouraging and supporting organic farming.

As the 12th Plan document says, "the present subsidies are actually encouraging practices that need to be discouraged... Data from all over India, especially from the prime green revolution areas, show that high use of chemical fertilizers and power is causing excessive mining of other soil nutrients and of groundwater, and that this is also leading to loss of quality of both soil and water… The fertilizer subsidy is now much higher than all other subsidies to agriculture put together. India has also emerged as the world's largest importer of fertilizes. In addition India is dependent almost entirely on imports of feedstock of fertilizers."

The document adds, "Imbalanced nutrient use complied with neglect of organic matter has resulted in multi-nutrient deficiencies in Indian soils... The micronutrient deficiency is a limiting factor lowering fertilizer response and crop productivity. As a result of over-emphasis on chemical fertilizes and imbalanced fertilizer use, efficiencies have become abysmally low: hardly 35 per cent for N, 15 to 20 per cent for P and only 3 to 5 percent for micronutrients like zinc, resulting not only in high cost of production but also causing

serious environmental hazards". At this rate, the National Academy of Agricultural Sciences estimated that NPK supply may have to be moved up to 45 million tonnes (up from 26 mt now) to meet food needs.

However, it is the alternative of reducing subsidies significantly and using the substantial funds released to provide organic, self-reliant, low-cost agriculture that needs to be explored with all seriousness. This will help to substantially reduce the costs and risks of farmers in uncertain, erratic times of climate change.

Farmers should get an encouraging price for their crops which should be based on treating farming as highly skilled work. Farmers' needs should be evaluated keeping in view the realistic size of a farm family. Organic produce should get further encouragement and financial incentives. Direct links of farmers and consumers should be encouraged. Even while paying higher returns to farmers, price of healthy, organic food can be kept within reasonable limits by reducing expensive inputs and reducing the share of exploitative middlemen. Dues of farmers should be paid promptly.

A question that needs to be asked is whether the promotion of organic farming can be compatible with the green revolution seeds that were specifically aimed at being more fertilizer-responsive. Clearly there is a contradiction here and there is need to go back to the rich diversity of India's traditional seeds as the basic treasure of genetic material on the basis of which farming can progress on a sustainable basis. The existing system of production and distribution of seeds has to be changed as well.

There is need to go back to the rich diversity of India's traditional seeds as the basic treasure of genetic material on the basis of which farming can progress on a sustainable basis

It is also very clear that organic farming cannot be considered in isolation and that there is need to look at systems of water-and-moisture conservation, good green cover in the form of trees and pastures and overall conducive conditions for animal husbandry to flourish well. These are very important in themselves but equally important for creating a conducive condition in which organic, low-cost. self-reliant farming can be successful. Similarly, crop and variety diversity and crop rotations that maintain fertility of land are integral to any understanding of organic farming.

An increasing number of people are seeking a way out of the problems created by the chemical intensive agriculture by following the agro-ecological approach. Dr Miguel Altieri, agro-ecology expert at the University of California has estimated that there already about five million hectares of farms being recuperated through ecological methods by two and a half million families around the world.

Jules Pretty has analyzed 45 non-chemical agricultural initiatives across 17 African countries that have helped some 730,000 farming households substantially improve their food production and food security. In 95 per cent of the projects that aimed to increase yield, cereal yields have improved by 50 per cent to 100 per cent. Total farm food production has increased overall.

Multi layered efforts are needed to reduce

risks for the poorest rural families starting with reduction of costs for farmers to reduce dangers of indebtedness. Loans at significantly reduced interest rates should reach farmers wherever they are actually needed and relief from loan or interest should be provided at the right time in case of adverse weather. Loans should be on simple interest basis and not compound interest basis. Self help groups for self-reliance in meeting small credit needs should be encouraged and helped.

Keeping in view climate change related new threats, government policies too need a huge and significant shift (including budget allocation, overall thrust of governance and other aspects) in favour of the poorest and marginalized sections, small farmers, rural life and farming based livelihoods (with their lower greenhouse gas or GHG emissions and importance for food security), environment protection and disaster prevention as well as better relief work at the time of disasters and adverse conditions. It can no longer be business as usual for the government as new threats bring new responsibilities. Budget allocations should shift very significantly in favour of agriculture and related activities and environment protection.

Direction of farm research will obviously need significant changes to do justice to new emerging priorities. The recent ICAR (Indian Council of Agricultural Research) network project on National Initiative on Climate Resilient Agriculture (NICRA) provides insights on requirements of adaptation. On the whole though, the ICAR's priorities remain heavily biased in favour of chemical intensive, expensive input farming. There is need for better assimilation, based on better understanding, of the successful results of many-sided agro-ecology approach, as well as learning that has emerged from the International Assessment of Agricultural Knowledge, Science and Technology for Development (IAASTD).

In particular, there is need for clearer realization of why over-centralized, high-risk models such as those based on concentration of seeds in a few multinational companies will be even more risky in times of climate change. This is particularly true for genetically modified (GM) crops.

In a letter written to the Prime Minister of India in 2009 as many as 17 distinguished scientists from

the USA, Canada, Europe and New Zealand have pointed out: "...The basic problem is that GM as employed in agriculture is conceptually flawed, crude, imprecise and poorly controlled technology, that is incapable of generating plants that contain the required multiple, co-ordinately regulated genes that work in an integrated way to respond to environmental challenges.

"...GM crops have led to vast increases in pesticide use, not decreases and therefore reduction of agricultural pollution cannot be claimed

"...Climate change brings sudden, extreme, and unpredictable changes in weather, which requires that a cropping system be flexible, resilient and as genetically diverse as possible. GM technology offers just the opposite.

"...Stability of productivity and production is much lower with many of the GM crops commercialized today. Herbicide tolerant GM soya is far more sensitive to heat or drought stress than conventional soya.

"...GM crops are designed to be used in conjunction with synthetic pesticides and fertilizers, which are manufactured from oil and natural gas.

"GM crops do not reduce greenhouse gas emissions.

"Recent data from the US Department of Agriculture has shown a vast increase in herbicide use since the introduction of GM crops tolerant to the application of these agrochemicals.

"Therefore, the introduction of GM crops has exacerbated rather than reduced agriculture's carbon footprint and is clearly unsustainable.

"Alternative proven technologies that can reduce the amount of fossil fuel used in farming already exist. This includes methods for reducing fertilizer applications, selecting farm machinery appropriate for each task, managing soil for conservation, limiting irrigation and (using) agro-ecological farming techniques."

While the record of GM varieties in increasing yields on a sustainable basis is highly suspect, safer alternatives are certainly available. As Prof. P Bhargava, noted molecular biologist pointed out recently, ICAR had not only favourably tested integrated pest management and bio-pesticides on 85 crops but also compiled as many as 4,000 traditional agricultural practices of which several had been validated and revalidated. Giving the example of Andhra Pradesh, where at least one lakh acres are under organic farming, he said that the yields there are equal to in farms of Punjab and Maharashtra where Bt varieties are being grown.

Decentralized agricultural development and research, accompanied by overall strengthening of panchayati raj institutions and spread of people-oriented farm research efforts to villages involving farmers closely, should be a big priority in the near future. In this context the suggestion for adaptive centres to be set up in various villages by Dr RH Richaria, eminent scientist and former director, Central Rice Research Institute, is very useful. His suggestions were originally made vis-à-vis rice but they apply to other crops as well.

Dr Richaria wrote: It is suggested that rural adaptive rice centres (to be known as farmers rice centres (Kisani Dhan Kendra) may be established, as many as possible, all over the country, with 2-3 acres of land for each centre. "Invariably, I found in rice areas some rice growers taking keen interest in their local rice varieties as they are very much absorbed in them and they have all praise for them, so much so that they track back the history of individual rice varieties to their ancestry with their

Rapid Seed Multiplication Using Clonal Propagation

Dr RH Richaria has also given invaluable suggestions for rapid seed multiplication using clonal propagation technology that will be very useful to cope with adverse weather conditions such as floods and droughts to get adequate seeds of those varieties that are more suited to difficult weather conditions. In a book on this technology titled 'Rice in Abundance for All Times Through Rice Clones: A Possible One-grain Revolution – a Genetic Forecast', Dr Richaria explained the following important benefits of this technology.

- "Investigations have conclusively established the superiority in grain production of vegetatively propagated plants (clones) over normal seed plants in respect of environmental stress and drought, comparatively non-lodging habit, resistance to diseases, pest, floods and salinity, ultimately to produce more grains per unit area."
- "There is no other field technology which can allow seed multiplication so rapidly than this method which enables a single paddy grain or a single stubble, multiplied to obtain over forty quintals of grains within ten to eleven months (January to November) depending on the variety utilized and resources made available."

What exactly is this technology of clonal propagation? Dr Richaria says: "Paddy grains are picked up and put for germination in an earthen pot. They germinate and begin to grow, with two grains. The same two seedlings throw out tillers, after about 10 to 12 days, depending on the season. The tillers can be separated when they are fairly strong, about 20 days after, by carefully detaching them one by one by finger nails preferably by thumb's nail or by a sharp scalpel or razor blade. The separated tillers should be immediately transferred back in the earthen pot, which is to be well-manured with enough moisture. The individual tillers grow and again produce tillers in varying numbers, every about 15 days after. The process of separation is repeated at intervals, depending on the growth and development of tillers, till the normal time of transplanting reaches in July-August. It is observed that the period of separation (intervals) is very much reduced i.e. the rate of growth is very much accelerated during June-July. Any number of clones can be raised and multiplied from a single seedling or a few of them (if a beginning is made fairly early, say February when the winter temperature begins to rise) transplanted in July-August to cover an acre of rice field and a full crop of rice harvested by November to obtain a huge quantity of pure seeds, as stated in some cases, recorded later".

"In this manner, pure seeds can be multiplied by this clonal propagation technology, described above and a normal crop of rice can be raised during the following season from seeds (obtained from the clones) which give higher production than the yields obtained from seed to seed crop. This is mainly because the grains, obtained from clones are fully matured healthy and filled up with the least percentage of chaffy grains. This is also due to physiological efficiency of the tiller plants."

This technology has special use in flood-prone area. At times rice fields get submerged due to floods at an early growth of the crop making replanting is necessary. In the absence of normal seedlings the rice-fields remain vacant. In such a situation, the aged seedlings from the unaffected rice fields in the neighbourhood or from any other source can be utilized as a source of clones. Dr Richaria says that it has been demonstrated that the rice clones resist water submergence. They can, therefore, be utilized in flood prone areas for which special nurseries may be raised and aged seedlings may be utilized as a source of clones.

Much before the adverse impacts of climate change manifested themselves, it was evident that significant changes were needed to be made in agricultural policy

utility and such selected and devoted rice farmers will be put in charge of the centres.

"The adaptive rice centres will be the custodian of all local rice cultivars in respective localities, assembled immediately, supplemented if necessary, by the already available materials of the locality at different research centres. In course of time those farmers' centres may be further expanded to embrace varieties of other crops of the surrounding locality with a similar programme, (also to serve as a local gene bank). The function of the centres would be:

- To maintain the evolved rice genetic material for future studies and use. It is practically impossible to retain it in its original form at a central place in India or abroad. It can only be maintained in its original condition at its natural habitat seeking help of the rice growers themselves.
- To educate the young farmers to appreciate the value and importance of their own material adding new ones as their hobby.

Such technologies and approaches (See Box: *Rapid Seed Multiplication Using Clonal Propagation*) can greatly increase the ability of farmers to cope with adverse weather conditions, which includes very sudden and unexpected adverse weather. Farmers do not have to depend on outside sources, but can use such self-reliant methods to obtain good crops in very adverse weather conditions.

Much before the adverse impacts of climate change started manifesting themselves, it had become evident in the interests of equality, justice and sustainability that certain significant changes needed to be made in agricultural policy. With the increasing manifestation of adverse impacts of climate change and warnings of worse to come, the urgency of these changes has become much more pronounced. ●

India's cotton farmers' lives transform for the better

Research indicated that 87 per cent of Bt cotton farmers enjoyed higher standards of living, 72 per cent invested in their children's education and life insurance, and 67 per cent repaid their long pending debts*. Many more built *pucca* (stone) homes, purchased farm equipment and motorcycles, leased additional land for cultivation etc. Further, women from Bt cotton households had higher access to maternal care services, while children had higher levels of immunization and school enrolment*. Additionally, female earners witnessed a 55 per cent gain in average income, and 42.4 cr. additional days of employment across the total Bt cotton area**.

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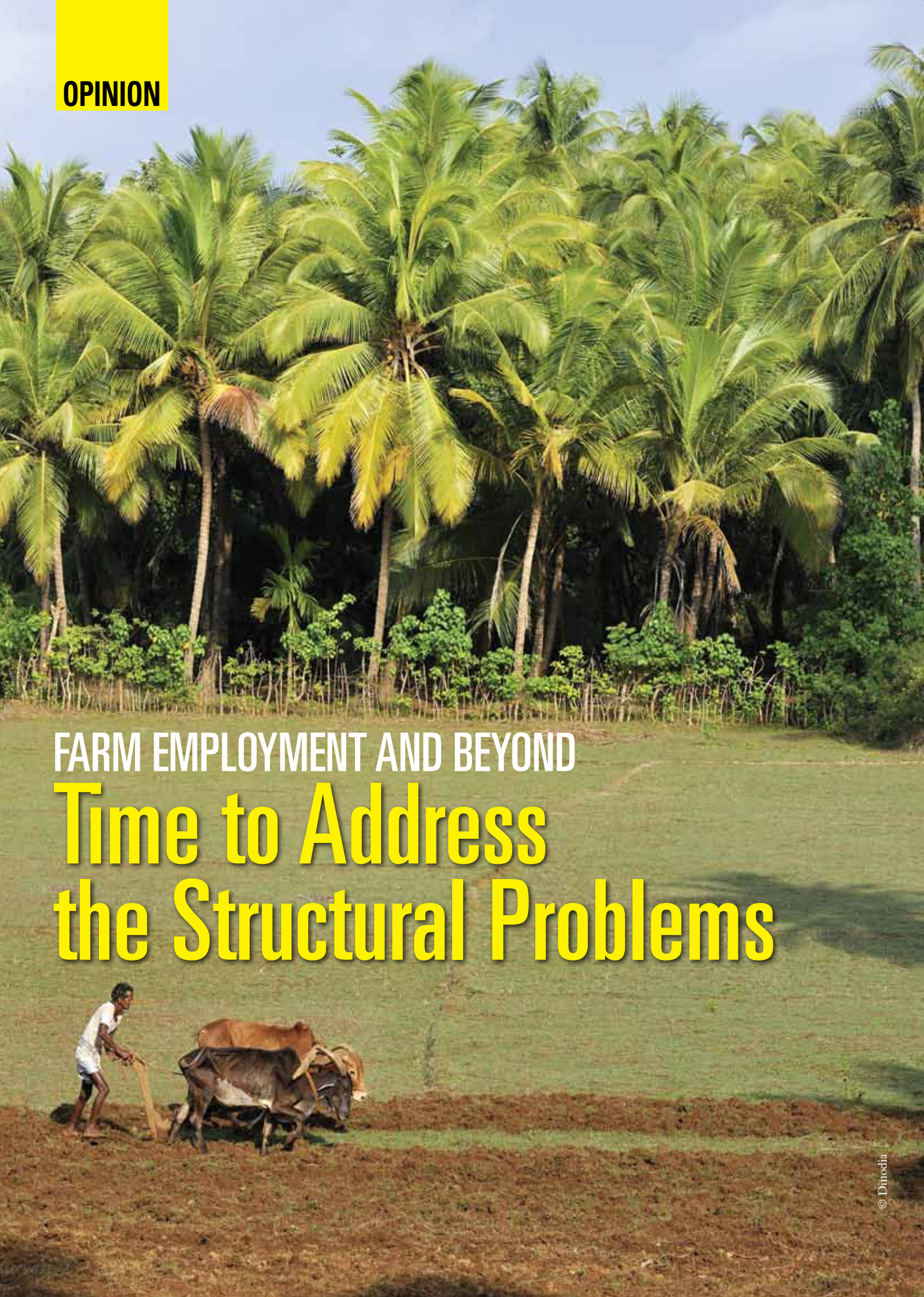
OPINION



FARM EMPLOYMENT AND BEYOND

Time to Address the Structural Problems

This interview is based on a discussion between **Dr Santosh Mehrotra** and **Paranjoy Guha Thakurta** on how challenging it will be for the new government to revive employment opportunities and agricultural growth, broadcast on Lok Sabha Television on June 15, 2014 in the programme 1-On-One

Santosh Mehrotra ***was head of the Development Policy Division, Planning Commission until August 2009, when he took over as the director-general, Institute of Applied Manpower Research. Earlier, he headed the Rural Development Division; was the economic adviser for the social sectors, Planning Commission (2006-08); a lead author of India's 11th Five Year Plan (2007-12) and led the team that wrote India's Human Development Report 2011.***

PARANJOY GUHA THAKURTA: ***For the first time in Indian history, its gross domestic product (GDP) grew by more than nine per cent three years in a row between 2005-06 and 2008-09. It did so again after a gap of a year in 2010-11. Thereafter, in the last two years, the GDP growth rate dropped below five per cent, the lowest in a decade. Data put out by the National Sample Survey Organization (NSSO), however, shows that the annual rate of growth in employment between 1999-2000 and 2011-12 is just 2.2 per cent. So despite the economy growing at a very impressive rate, there was no commensurate job creation. Why is this happening? You talk about inclusive growth but growth has not been inclusive.***

SANTOSH MEHROTRA: Let me modify your characterization of the entire 12 years as a period of high growth. Though the broad characterization is correct, there has been a slowness in the pace of structural transformation. Output has been growing; the structure of the output has been changing and the share of agriculture is declining but the same has not been happening at a commensurate rate with the structure of employment. However, there has been a real shift in this since 2009-10 and we will come back to that but, by and large, we have to recognize that worldwide, in manufacturing, the employment elasticity of output has been declining.

PG: ***What do you mean by employment elasticity of output?***

SM: For every additional unit of output in manufacturing the number of jobs created is less and less.

PG: ***That means machines and capital equipment are replacing human labour.***

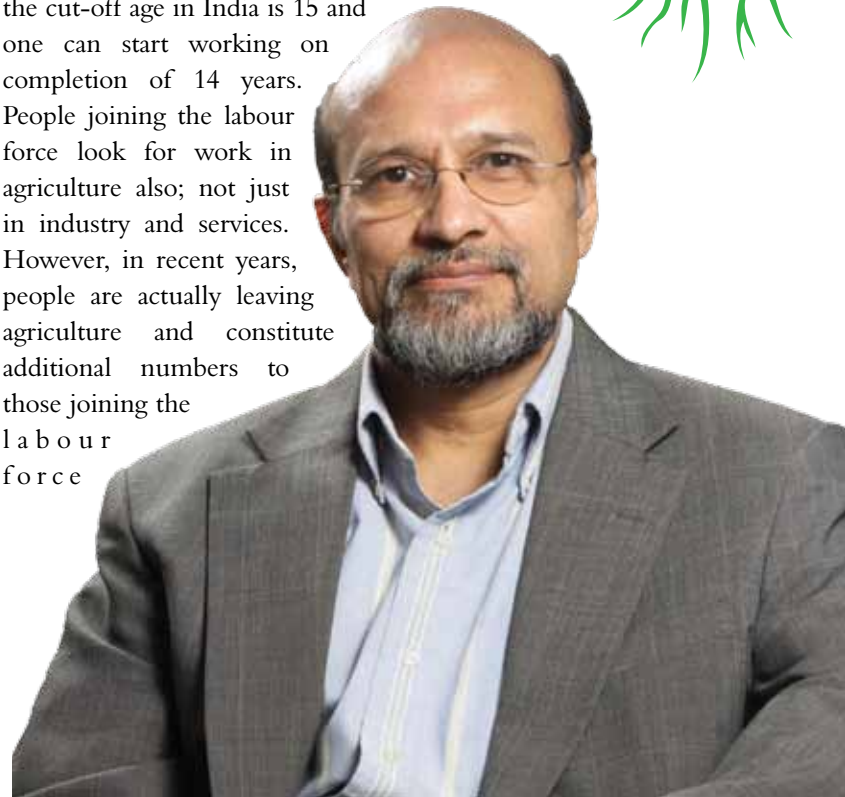
SM: That is right.

PG: ***The capital intensity of production the world over is going down.***

SM: In manufacturing in particular. This is a technologically-driven phenomenon. Technology is changing in such a way that it is continuously displacing the labour. In a sort of sense this makes it incumbent upon government policy to ensure that growth is good in at least the sectors that are labour intensive. That demand for goods produced by those sectors is growing so that employment continues to grow because millions of youth join the labour force every year. It is not as large as 12 million a year but in recent years it has been two million a year. We expect that the number will be no less than five million to 10 million over the next five years. That means that at least one million would be joining the workforce every year and this figure could be higher; as high as 10 million each year.

PG: ***These five million to 10 million new young individuals are people above the age of 16 or 17.***

SM: No, they are just about the age of 14 because the cut-off age in India is 15 and one can start working on completion of 14 years. People joining the labour force look for work in agriculture also; not just in industry and services. However, in recent years, people are actually leaving agriculture and constitute additional numbers to those joining the labour force



otherwise. That is the demographic cohort. Those who are leaving agriculture have to be provided the jobs as well.

PG: ***This, many people will argue, is the biggest structural problem that the Indian economy is facing. The world over, as the share of agriculture goes down as a proportion of GDP, so does the share of the workforce in agriculture. Not so in India. The services sector, which includes defence, government and a whole lot of things, accounts for half or more than half of GDP. The manufacturing sector has been stagnant of late but still accounts for about 25 per cent of GDP but agriculture accounts for 16 per cent to 17 per cent of GDP though it still provides livelihood to about half or more than half of the population. Is that your structural problem?***

SM: The good news is that historically the share of the population working in agriculture has been going down and is now down to 49 per cent. More importantly, since 2004-05, in other words, in the last 10 years, there has been a rapid increase in the numbers leaving agriculture. There has been absolute decline in the numbers in agriculture.

PG: ***Despite the rate of population growth?***

SM: Yes. Despite the growth of population there has been an absolute decline in the numbers in agriculture. About 23 million left this sector between 2005 and 2010 and an additional 13 million between 2010 and 2012 making a total of around 36 million to 37 million people between 2004-05 and 2011-12. Why are they leaving agriculture? Partly, of course, incomes are not growing as rapidly in agriculture though even here incomes have been growing reasonably well in the last seven to eight years. We will come back to why wages are growing. More importantly, people will leave in such large number if they have alternative job. Alternative job have been growing particularly in construction but also in services and manufacturing. Although manufacturing jobs did not grow between 2004-05 and 2009-10, there has been upswing since 2009-10. That gives reason for satisfaction and hope for the future of our country. The new government must focus on this.

PG: ***In agriculture, however, enough studies, including the NSSO study, show that a farmer's child does not want to be a farmer. This is despite the growth in farming, the minimum support price (MSP) and programmes under the National Rural***

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Agriculture accounts for 16 per cent to 17 per cent of the GDP though it still provides livelihood to about half or more than half of the population

Employment Guarantee Act (NREGA). People still want to leave agriculture for a number of reasons one of which is uncertainty. Agriculture remains one of the most uncertain and riskiest professions and with fluctuating earnings and a whole lot of other issues. If you say that people are leaving agriculture and that is a good thing, others would argue that they are seeking alternatives avenues of employment in highly uncertain areas too that includes construction, short-term work.

SM: I am not denying that. Of course, the quality of work in the construction sector, which is what most of the agricultural labour exiting farming are taking up, is far from satisfactory but they are obviously getting higher wages even though the farm wage rates have been rising consistently since 2005, partly due to the NREGA. The main reason has been the rise in demand for labour in construction in both rural and urban areas., where they get paid better than in agriculture. This is why they are leaving. However, even though incomes are not growing very rapidly in agriculture, making people leave the sector, incomes are increasing nevertheless. One of the most important things needed in agriculture is for productivity, and incomes as a result, to rise. That is not happening and we hope that the Prime Minister and the new government will focus on ways to improve productivity in agriculture. If yields and productivity rise, wages too can rise in agriculture and some people will want to remain in the sector. The issue of children not wanting to remain in agriculture, that diffidence about agriculture too will decline.

PG: ***Have government programmes helped in reducing the migration of the labour force?***

SM: They have stemmed that migration but not prevented it. How can it prevent when there is excess labour: 15 per cent of GDP comes from agriculture but 49 per cent of the workers are in agriculture. Half the workforce is producing only the 15 per cent of the total output, which

means that productivity is extremely low and there are too many people. So it could not have completely stopped migration but has certainly slowed it down and one of the reasons is that the NREGA has raised wages, public employment wages, which had a knock on effect on the open market rural wages which had been stagnant until about 2004-05. They rose not only due to MSP and NREGA but continued to rise. Both rural and urban wages continued to rise mainly because of the demand for labour from construction. Therefore, one important thing this government needs to continue to focus on is that investment and infrastructure growth is sustained. Moreover, investment in housing and in such rural programmes as the Pradhan Mantri Gram Sadak Yojna and Indira Aawas Yojna should be sustained. These programmes have also been raising wages.

PG: ***One of the big criticisms of NREGA is that it is the old model of digging up holes and filling them again without creating durable assets. The roads built in one season get washed away in the next.***

SM: I understand your point but the evidence on that is mixed. The more important point is that the NREGA has served its purpose in that it has raised wages, slowed down migration in the lean season and, in fact, the demand for NREGA work has been systematically declining for the last three years with the expenditure on the scheme declining. The economists call it the employer of last resort. So that employment of last resort was being provided and continues to be provided but the demand for NREGA work is on the decline while that for other work has been growing. It needs to grow faster outside the construction and that is where the new government needs to focus so that manufacturing jobs grow and modern services jobs grow as well.

PG: ***A paper titled 'Joblessness and Informalization: Challenges to Inclusive Growth in India' prepared in December 2012 by your institute has a sentence that raised a lot of controversy at that point of time: "One of the most disturbing numbers that the 2009-10 employment-unemployment NSSO data shows is the addition of merely 2.76 million of work opportunities during the period of fastest growth of the economy and compared to this there was an addition of 60 million to the workforce during 1999-2000 and 2004-2005".***

SM: First, let me talk about the 2000-05 period and then about 2005-2010. Although 60 million jobs were supposedly created between 2000 and 2005, there were 20 million jobs in agriculture. So one must discount 20 out of those 60 in any case because that is the opposite of what a developing country wants to see. One wants structural transformation where people are leaving agriculture and getting non-agricultural jobs. What is also true is that fewer young people were entering the labour force in the latter half of the decade. Many children and also those over 15 year old, who would otherwise be in the labour force looking for work, actually entered schools and have remained in school. In other words, the sheer numbers offering themselves for work were much lower compared to five year earlier.

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PG: ***If you compare the five-year period 2000-2005 and then the next five years 2005-10....***

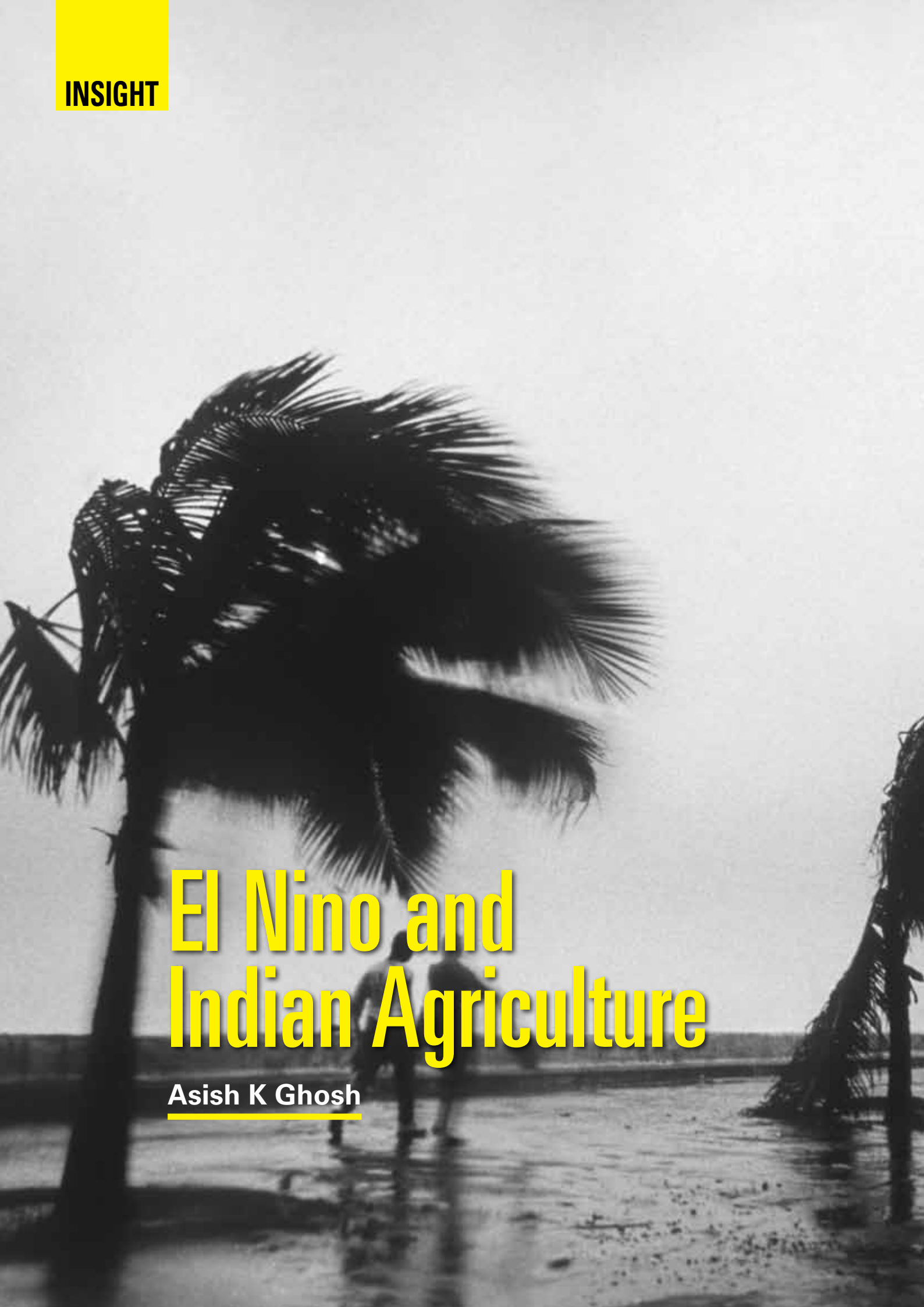
SM: There was very slow increase in school enrolment between 2000 and 2004-05. There was a very dramatic increase in the number entering and remaining in school especially among girls after 2004-05. It was just a phenomenal increase, taking place suddenly. Are we surprised that Sarva Shiksha

NREGA has served its purpose. It has raised wages and slowed down migration in the lean season. In the last three years the scheme's demand and expenditure has declined

Abhiyan is going to scale up and productivity in agriculture is rising? In the last seven to eight years, there has been a massive mechanization of agriculture, which was not the case until the middle of the last decade (2004-05). Thus, fewer people are needed in agriculture, which is also why people are leaving agriculture for construction jobs on the one hand and youngsters (between the ages of 6-14) are continuing with their education on the other. The enrolment increased by 2007-08; upper primary enrolment also rose very sharply. These would otherwise have been child labourers, who went into school instead. Those above the age of 14 also continued in school, especially girls in the 6-14 year category. Every state government started offering bicycles so that girls could continue to go to school. These are people who would have otherwise been looking for work.

How many jobs are created? If fewer people offer themselves for work, obviously fewer jobs will be created. The more important point that must be noted as a modification to what you read out – I am not denying any of that – is that one has to look out for long period. If you look at 2004-05 and 2011-12 the number of non-agricultural jobs created was the same as the number of such created between 1999-2000 and 2004-05, the first half of the decade. The same seven and a half million per annum of non-agricultural jobs were created despite a slowdown in manufacturing. In other words, there was no difference in the number of non-agricultural jobs created before 2005 and after 2005. The one important thing to worry about is that a lot of those non-agricultural jobs were in construction in the unorganized sector and informal jobs in the organized sector. ●

INSIGHT



El Nino and Indian Agriculture

Asish K Ghosh

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ASISH K GHOSH
President, ENDEV - Society for Environment and Development, Kolkata

The El Nino – the Christ's Child – is a Peruvian name for a weather phenomenon, which was familiar to fishermen, around the West Coast of South America, for centuries. The term originated from their observation that the fishing catch dropped for a few months, every year around Christmas but returned to its normal level afterwards. It is now attributed to a seasonal change in weather patterns over the Pacific Ocean.

These seasonal climatic changes tend to reverse the normal east-west direction of Pacific currents, resulting in warmer sea surface temperature the Central Pacific to the South American coast. Such phenomena have a long distance impact, which can extend up to the Indian region and cause major changes in monsoon rainfall. In the 20th century, the strongest El Nino effect was seen in 1982-83, which caused violent storms along the Californian coast, cyclones in the Pacific Ocean and droughts in Australia.

The possible inter-relationship between El Nino and the global weather pattern was first realized in 1972-73, with simultaneous droughts across a large geographical area of the then Soviet Union, Africa, Australia and Central America. Scientists recognized that the changes in atmospheric pressure over the Indian Ocean were always reflected by opposite changes in pressure over South-Eastern Pacific. Recent studies have confirmed the relation between changes in rainfall and El Nino events. In the year of El Nino, rainfall remains well below average over Papua New Guinea, Northern, Eastern and Central Australia, North-Eastern South America, South-Eastern Africa and India.

El Nino is now believed to be one of major phenomena that can affect the Indian monsoon. With greater heating, warm waters from the East-coast of South America, directly increase the sea surface temperature above the normal of 0.50°C and this in turn can lead to diversion of flows of moist winds from the Indian Ocean towards the East-coast of South America. This change in wind pattern reduces the amount of rainfall in the Indian sub-continent.[1]

During the current year (2014), the first official monsoon forecast of the Indian Meteorological

Department (IMD), is in line with the latest outlook of the Geneva-based World Meteorological Organization (WMO) that predicted mostly below-average rains in much of South Asia including India. "Latest forecast from a majority of the models also indicate warming trend in the sea surface temperatures over the equatorial Pacific reaching to El Nino level during the southwest monsoon season with a probability of around 60 per cent", it said. However, IMD officials refused to comment on the southwest monsoon forecast citing the election code of conduct.[2] In any case, the significant reduction of rainfall will have direct negative impact on the productivity of rice, wheat and oilseeds in India.

Obviously with less rainfall, countries like India will face a major problem in agricultural production. As it is, scientists at the Indian Institute of Tropical Meteorology, Pune have observed that the Indian Ocean has significantly warmed up in past 50 years, by about 0.60°C. The monsoon has been declining in the Western Ghats and interior areas such as Chhattisgarh in Central India and Jharkhand in eastern India by six per cent to seven per cent. In 2014, the first forecast of the Meteorology Department, predicted a 60 per cent chance of El Nino and 20 per cent chance of deficit monsoon. One can remember that the last El Nino effect was felt in 2009, spread over 252 districts of India in 10 states.

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India's economic growth on account of El Nino could be reduced by 1.75 per cent or ₹180,000 crore in 2014-15, says ASSOCHAM. This may affect lakhs of unskilled jobs

The Ministry of Agriculture has asked for plans for diversification of crops in the states, to ensure adequate input supplies but above all, for better adoption of drought tolerant crop varieties; it has also asked for steps to follow strategies to augment fodder production output. The El Nino in 2009, created severe drought conditions, the worst in 37 years. In 2009 the country's grain production came down to 218 million tonnes, six per cent lower than 2008 but still comparable to the level of 2006. Inflation in grain, fruits and vegetables, however, hit 14.5 per cent and 9.6 per cent respectively during 2009-10.

It is reported that the "Government is getting battle ready for even a severe drought given that IMD's April forecast have often been wrong. In 2009, the last El Nino, the MET had initially forecast 96 per cent rain against the 23 per cent shortfall."[3] Meanwhile, another disturbing report indicates that the arrival of wheat through the public procurement system had been reduced by 32 per cent by the end of April 2014. One has to remember that 67 per cent of the people of India are now covered under the Right to Food Act, which has guaranteed to supply wheat and rice at ₹2 and ₹3 respectively.[4]

A recent report of the ASSOCHAM stated that, India's economic growth on account of El-Nino could be reduced by 1.75 per cent or ₹180,000 crore in 2014-15 and such a process is likely to affect lakhs of unskilled jobs in the country. This projection has been made on the basis of possible five per cent deficit rains during the current year. The report further stated that El Nino effect and deficiency in rains could also impact food inflation, which has always been a concern to policymakers.[5]

Another report says that fast-moving consumer goods (FMCG) companies may be facing a crisis and have started preparing for the worst. Major FMCG firms like GlaxoSmith-Kline, Dabur, Jyothy Labs, Godrej Consumer Products and

Parle Products, which derive significant sales from rural markets, are looking at stepping up launches of low-priced packs, micro-marketing and rural penetration to insulate themselves from a likely dip in rural demand, the report says.[6]

Another recent media report shows that the government is finalizing a comprehensive plan for 500 odd districts, to deal with any exigency. The focus of the plan is to prepare farmers in various districts against delayed monsoon, excessive rains and uneven rainfall, so that they can grow appropriate varieties and save their crops, according to the plan-in-charge, B Venkataswarlu, at the Central Research Institute for Dryland Agriculture (CRIDA), Hyderabad.

The plan being drawn up with the Union Agricultural Ministry and state agricultural has divided the country into five zones for the detailed planning, covering 500 districts. Basic agricultural statistics, physical characteristics of the district including soil mapping, details of cropping pattern and methods of cultivation, will be included in each District Plan. The government will complete the plan for 100 more districts that are relatively less vulnerable to drought, during the next year.[7]

Ashok Gulati, Professor, Indian Council for Research on International Economic Relations has recently said that the government should immediately come with support mechanisms for farmers by way of compensation or insurance policy.[8] The fear is that prices of essential commodities will get out of gear and steps will have to be taken to tame inflation. Obviously, the uncertainties of a poor monsoon are posing a big challenge for the new government that is keen to fast track agriculture and overall growth rates. ●

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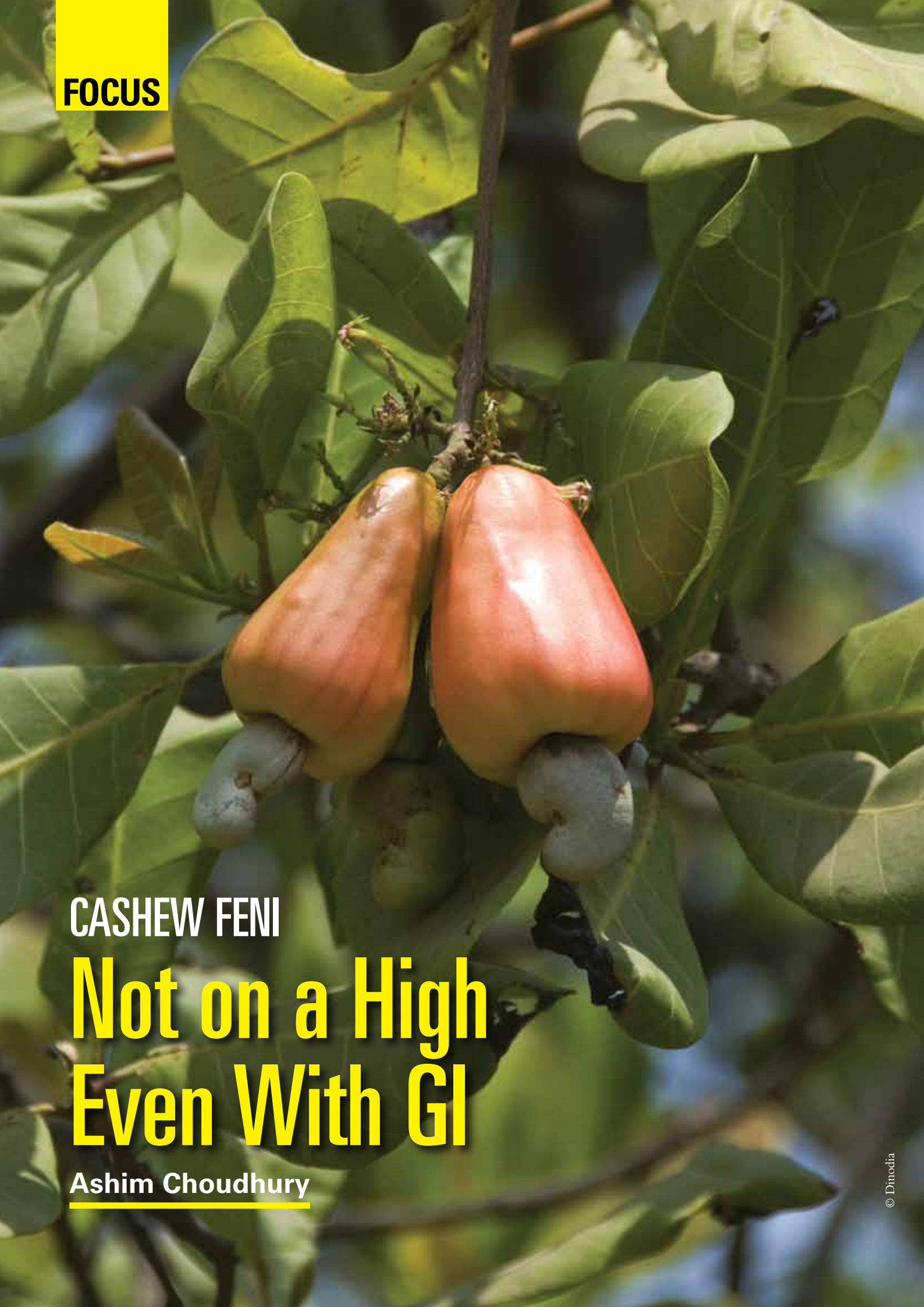
FOCUS



CASHEW FENI

Not on a High Even With GI

Ashim Choudhury

Nearly five years after Goa's famed feni received a Geographical Indicator Certification (GI) in 2009 making it a liquor unique to Goa much on the lines of tequila of Mexico, Scotch from Scotland or champagne of France, not much has altered its fuzzy fortunes. Feni still remains the poor Goan's drink despite desperate feni promotion efforts from Goa's fashionable set. Hotels and resorts have been trotting out feni cocktails to keep its shrinking flock of feni drinkers.

ASHIM CHOUDHURY
Journalist and author of
The Sergeant's Son

After getting GI status, feni production, one would have thought, would go up. Yet there are cashew farms where the cashew apples have been rotting on the ground without any takers, a heavy fruity stench pervading the air. It is from ripe cashew apples, fallen on the ground, that feni is made. Many a cashew apple, save the nut, is going waste in Goa and its surroundings from where the cashew apple is procured. A cashew farmer on the border with Karnataka remarked, "Who will buy?" when asked why he did not sell his cashew apples dumped on the ground.

Why has feni lost its fizz? Why has feni production, post GI, not picked up? The fact of the matter is that in the last few years feni production has been steadily falling, from 1,089,000 litres in 1971 to 875,000 litres in 2004. In the same period, production of distilled or distilled spirits increased from 202,000 litres to 18.99 million litres. One of the reasons is that feni, despite the GI, continues to be labelled 'country liquor', which means that it cannot be sold outside Goa.

Also, feni production still largely remains a cottage industry. Not uncommonly it is distilled in individual homes sans a license. Even Goan priests, particularly from the South like in Raia, Quepem and Sulcorna villages, still brew their own feni. They distill it in earthen pots the traditional 'lavani' way, says an old Goan who knows his feni. A major problem with feni production is that there is no uniform method of distilling it, nor is there any quality control process in place. Not surprisingly, much of the feni sold in Goa is spurious or adulterated.

A lot of feni is produced by small, unlicensed producers, without quality control systems in place. No wonder then that no Goan will easily take you to a 'feni-factory' without permission from the owner. This writer's wait was so long he decided to go out on his own. From Anjuna village we set out northwards. Our first halt was a local Goan pao-bhaji tea-and-breakfast shop in Sheolin, where women invariably man the cash counters. The lady at the counter said that her husband would have gladly taken us to a feni 'bhatti' but was away. Then, waving toward a hill she said, "You go up…ask people…they will take you."

That search for a feni bhatti (distillery) took us up the desolate hill road, then below it and soon we were back on the winding roads covered with coconut palms, cashew and mango trees. Taking directions, we moved along to Mapsau, finally coming upon the Goa Mumbai highway. That is where we met one Chengappa Majukar, a native of Belgaum living in Goa, who told us to go further on the highway till we crossed a river and move up further. "Once you are near the bhattis you will know automatically by the smell in the air", he tells us.

Indeed, half an hour later after crossing the scenic river below us, our nostrils are invaded by the strong whiff of feni. Not much later we hit upon Kalogis, the stores that sell cashew as well as feni. This is Dhargal, some 22 kilometres north of Panjim, where the man who sells us water gives us directions to reach the feni factory. Driving on the gravel road, we are soon at the feni distillery that looks somewhat like a cowshed and smells like rotting garbage. The workers at the bhatti show us around readily. What I mistake to be a drain of sewage is actually the juice

Photo Cibin Varghese

A lot of feni is produced by small, unlicensed producers without control systems in place

of cashew apples that are being squeezed in a basket. This juice finally finds its way through gutters into large copper pots that are being constantly heated, distilled to form urak. The Kalogis have 20 matkas or stills in all. At this distillery they mixed the urak with neera or the cashew juice, distilling it again to form feni. Clearly, this is not the right way to make feni. Pulp and sludge from the Kalogi distillery also flowed out untreated into the neighbouring farm turning it into a ditch. Not surprisingly, the young owner of the Kalogis was rude when we knocked at his home nearby, ordering us to "get out" of his property. I had not met a more surly young man in all of Goa. Perhaps, he had a lot to hide.

Francis, another distiller we chanced upon was, by contrast, warm and friendly. He was much poorer, owning just two of the stills or matkas. We found Francis as we were heading for the Arambol beach region, when there was a sudden clearing in the forest. Framed in that clearing was a blue river below. It was to take a look at the river that we stopped, when we were intrigued by a large shed made of dry coconut palm leaves.

In this desolate place, except for a beached boat along the serene river there was not a soul in sight.

It was out of sheer curiosity that I stepped into the palm shed from where some voices emerged and, lo and behold, this was a feni factory! Francis, his hands muddy from repairing a still was looking up at us with a smile. The bearded man with a paunch was happy to show us around. He took us through the rows of urak and feni being distilled. There were several stills here, in this place taken on rent by Francis.

This distillery is a co-operative of sorts. Six friends have got together under a licenced owner who gets a fee from them. Francis and two of his friends have two stills each. The remaining three have one each. They are tiny distillers who come together for the months of March and April, when the cashew apple is abundantly available. The feni they produce is sold directly to Goa bars.

How much does Francis make in a season? "Nothing", he says with a sense of resignation. "A jar (20 bottles) fetches just 700 to 800 rupees." Francis, who has his "two in the afternoon and two in the evening", laments that people are not drinking feni the way they used to. He washes a steel glass and asks us to sample his feni. Then he sells us a two-litre bottle for ₹150.

The Terekhol khari or river on whose banks the distillery is camouflaged also serves as a border between Maharashtra and Goa. If his distillery is on the Goa side, Francis's home across the river is in Maharashtra. Francis and his friends commute to work from home on boats. He even invites us home for a Palm Sunday lunch which, for the paucity of time, we could not honour.

From Khareban village, my feni trail took me to a former captain of the Indian Navy, Vijay Shankar, who lives in Porvorim near Panaji. This man from Kerala has adopted not only a Goan wife but also the state as his own. Being Goan now, he loves his feni. Some describe him as a connoisseur of feni. He scoffs at them, "I am just a feni drinker, nothing more". Captain Shankar goes great lengths to procure his pure stock of feni and urak. "Urak is the first line distilled from the juice of cashew or neera and has a fresh fruity flavour", he avows. It is also smoother and has to be consumed within a month of its being produced, unlike feni that can be stored away for more than a year.

Urak, after two or three rounds of distillation, sometimes mixed with neera, becomes what is called feni. It is a great alcohol but for its strong whiff. With an alcohol content of 20 to 24 grains, a measure, multiplied by 2.5, it works out to 60 to 70 per cent, much higher than the conventional

Urak, after two or three rounds of distillation, sometimes mixed with neera, becomes what is called feni. It is a great alcohol but for its strong whiff that puts off many people

whiskey or rum. Even Captain Shankar, the feni lover, does not take it regularly. "My wife will kick me out of the house." Drinking feni makes even your sweat stink like feni, something women are not wont to tolerate.

No wonder the number of feni lovers even within Goa is shrinking. Krishna Sarmalatar, a young man in his thirties from Dhargal, wrinkles his nose when asked if he drinks feni. "Peene ko baas marta", he says with disdain. "We drink 'English' only", he says deprecatingly. English is the misnomer for IMFL or Indian manufactured foreign liquor. Feni also causes you to burp, something polite society looks down upon. Men like Captain Shankar, who swear by their feni, are few and far between.

Shankar, however, is happy that the GI tag has not really taken off feni from its humble roots. "Thank God", he says, "Otherwise it will disappear from the shelves… I cannot pay ₹500, like for a shot of Tequila… I pay ₹100 for a litre of feni. Leave it alone for the sake of the common Goan", he says. His fears of feni going beyond the reach of the ordinary Goan, as a result of GI, have so far proved wrong, thankfully. The GI status has not produced the fizz in feni as expected.

Currently Goa has 1,532 cashew zones and 2,656 licensed units producing feni. Much of these are in the north-eastern parts of the tiny state, accounting for nearly 20 per cent of the state's total area under cashew cultivation. Meanwhile, coconut feni, common to south Goa is also suffering because the toddy tappers are no longer available like before. Many vouch it tastes better than the cashew feni and has less of that repugnant whiff.

Meanwhile, moves from are afoot by manufacturers and traders to give cashew feni 'heritage' or IMFL (Indian Made Foreign Liquor) status so that it can be exported. After the GI certification, only liquor made from cashew apples sourced within Goa can be called 'feni'. If marketed as a Goan holiday drink, synonymous with the state's merry image, feni has huge potential. Cashew Feni Distillers and Bottlers Association secretary, Gurudatta Bhakta says, "The GI tag has not helped the cashew feni cause because of the country-liquor tag".

Photos Courtesy Wikipedia

Genuine certification apart, perhaps what feni needs is to get rid of its excessive whiff that gives it a ghati character. The purists would rather develop a taste for it

Bhakta, one of Goa's biggest distilleries of cashew feni, feels that if it is classified as IMFL the market for feni will open up in a big way. The association president, Mac Vaz, who owns popular feni brands like Big Boss and Goan Treasure, says, "The GI certificate is to protect cashew feni…" He says the GI tag will prevent other states, such as Maharashtra or Kerala, which also produce large quantities of cashew apples, from producing and selling 'feni'. Vaz is hopeful of the government classifying cashew feni as 'heritage liquor', so that it can be exported easily.

Meanwhile, despite five years of GI, nobody has any control over the quality of feni being sold under different labels in Goa. Much of it is adulterated. Hansel Vaz, owner of the popular feni brand Cazulo says, "GI has recognized the 400 year old art of feni making … Now we need to reach out to people at the grassroots, the small distillers and tell them the importance of sticking to best practices like using copper stills, picking up only fallen fruit, not storing feni in plastic jars and other aspects of quality".

The association has also initiated measures to certify genuine cashew feni and 'certification' guidelines are being finalized. There are fears that this, ultimately, might edge out the small distillers who own one or two stills, making feni an exclusive club of the big boys. That also means some 40,000 to 45,000 people, engaged in small time feni-making may lose one of their main sources of income. That is where Hansel Vaz's suggestion of reaching out to the small manufacturers makes a lot of sense. Mac Vaz rejects the suggestion that the small players will be eased out over time. "No question… we have been soldiers in arms." Vaz, who likes to think of himself as a socialist says he is inspired by Amul's Verghese Kurien and would like to see that co-operative experiment applied to feni.

'Genuine certification' apart, perhaps what feni needs, more than anything else, is to get it rid of its excessive whiff that gives it a ghati character as Vaz puts it. Maybe some blending, like they do with Scotch, can achieve that with ease. However, purists like Captain Shankar scoff at any attempts to tamper with the whiff. "It will take away the true character of feni…. Leave it alone. You have to develop a taste for it just like you have to for, say, cheese", he emphasizes.

Mac Vaz firmly believes that some smart branding and marketing of feni that he and his friends are doing will once again see cashew farmers laughing all the way to the bank. The government has woken up rather late to feni's newfound GI status, finally organizing a feni festival from May 21 to 25 in 2014. Feni's fizz, it appears, cannot remain bottled for long. ●

Of Headache and Persistence
The Organic Route

Ajay Vir Jakhar

It was 49° Celsius when I got here; a little less hot today, at 47° Celsius, as I write. This is near village Dhingawali, bordering Rajasthan, where I am meeting Surinder Pal Singh, a soft-spoken farmer, in the late afternoon. He is 53 and started to farm in 1992. What makes him exceptional is that he decided to go organic way back then, when organic was a virtually unheard of concept.

He is more patient than other farmers probably because he is more content. This, I believe, is the pre-requisite for one to successfully transform a farm from a chemical ridden one to an organic farm. On his *birani* land (not barren, as many would describe it but as land with little water), he began his tryst with destiny.

Destiny! because even then his adventure was the subject of heated debate in the village. With my experience of encountering sustained opposition for advocating a different paradigm for farmer prosperity, I completely understand how difficult it must have been for Surinder Pal to go against the conventional wisdom of the time. It is even more difficult in traditional societies and requires lots of courage.

Over the years he has grown blood red/sweet orange/malta (kinnow), *kanak* (wheat), *chana* (gram), *ganna* (sugarcane) *sarson* (mustard) and such others. Initially, he experienced a dip in production but it picked up, even though I found his output lagging behind conventional comparable yields. His wheat production is better than most farmers though; at 14 quintals an acre. His wheat sells for ₹2,800 per quintal, for which the minimum support price is ₹1,400. Similarly, his *chana* sells for ₹4,500 per quintal while the market price is ₹2,900.

The wheat varieties that he grows are C-306, RAJ-3077, RAJ-1482. That is the premium he gets for his non-perishable crops. Sadly though, he gets no premium for his organic milk, sugarcane or citrus. People have expressed an interest but marketing and delivery of small quantities remains a problem. Theoretical equations cannot solve practical problems.

After every three crops on a plot, he leaves the land fallow for one crop. He even practices inter-cropping of deep-rooted plants with shallow rooted plants and of shallow rooted plants with fibrous plants. He never repeats a crop in the subsequent year on the same piece of land. This, he insists, also helps in weed control. Growing organic is not just about not using chemicals but about intelligent every day practices.

Surinder Pal talks to me in his soft voice that I have difficulty in following. I have to strain my ears. "In 1976, wheat yields were not much different than today, after which the fertilizer use increased manifold". He poses a counter question: "If the yields have not increased, why use fertilizer?" Of course, the scientists will tell another story backed with all their data. The farmer knows that the increase in yields is definitely tapering off.

The most exciting

How difficult it must have been for Surinder Pal to go against the conventional wisdom of the time

part of the conversation is also the most astonishing. Surinder Pal prepares his own nutrients and pest control solutions. He buys nothing from the market other than bagasse from sugar mills. It is not that he cannot do without it but it is available from Uttar Pradesh sugar mills at Re 1 per kg and it really helps. He adds that the quality of bio inputs, nutrients or pesticides being sold in the market is suspect and they lack consistency.

"Jeev amrit" is a mixture of cow urine (10 litres), *besan* (gram powder; 1.5 to 2 kgs), cow manure (10 kgs), *gud* (sugarcane jaggery; 2 kgs) or sugarcane juice. All these are mixed and left to ferment over a week. The prepared quantity is sufficient for one time use for an acre. Small crops need two to three applications while bigger plants or perennial crops like sugarcane or citrus need five to six applications.

His pest control solution is made from datura (*Datura stromonium*), *aak* (calotropics), *lassan* (garlic), *adrak* (ginger), *hari mirch* (green chilli), *chhach* (butter milk), *neem ke pattey* (neem leaves) that are all mixed and left for a week. Black datura is poisonous and is used in very small doses as an anesthetic even in modern medicine. This mix is then put through a sieve before use to get a natural potent insecticide.

The buttermilk also acts as a fungicide. After required quantities have been collected, he dips a *tamba* (copper) strip or wire in it for a week to make it more potent for pests. In urgent cases, when the crop is already under pest attack, one can substitute copper with *neela thotha* (copper sulphate). The final concentrated product is diluted in the ratio of 10 ml per litre of water for spraying on plants.

In summers, for breakfast I have butter milk with *missi roti* (Indian bread made from gram), that makes for the most perfect combination after two or three hours of work on the farm. Alternately, I could add raw onions and chutney of *kachri*, a small melon growing wild in dry climates for lunch. One could ferment it to make a *rabri*, which is the perfect light intoxicant that gets you drowsy and you can have the most beautiful afternoon nap. Even at home, one cannot store buttermilk in a copper vessel as it turns poisonous.

Butter milk and cow urine can be mixed and sprayed on the plants three to four times a year

starting in December, when it is very cold, plant growth is dormant but pests have started to form.

Surinder Pal believes in the age old concept of "1 bigha, 1 cow, 1 neem (*Azadirachta indica*)" is good for farming. In other words, every hectare needs four cows and four neem trees. Surinder is adamant about using cow manure only and urine from pure local breeds; not from imported or hybrid animals. I find that odd but defer to his long experience.

He has 80 cows and buffaloes, which are taken to graze in the village fields every day. Livestock need space just as humans do. One cannot tie animals in enclosures for the whole day, he says. He needs 10 acres of land to grow fodder for his own cattle. At any given time only 14 to 18 animals are given milk.

He has observed that fruit trees nurtured on organic practices are more stress bearing, require less water and are more resistant to pest attack. His farm is certified organic. As an individual farmer, it would have been difficult to get his farm certified so a few farmers got together and obtained a group certification.

As an individual farmer, Surinder Pal would have found it difficult to get his farm certified. A few farmers got together and obtained a group certification. Pal's farm was certified organic

There are very few farmers practicing organic cultivation in the area and Surinder Pal talks of other good organic farmers like Vinod Jyani from Kateda. They are the main speakers at our joint seminar on organic citrus practices with the "Surinder Jakhar IFFCO Trust". He is too passionate to focus on citrus alone but invigorates the gathering with his powerful speech, which is in absolute contrast to Surinder Pal's soft oration.

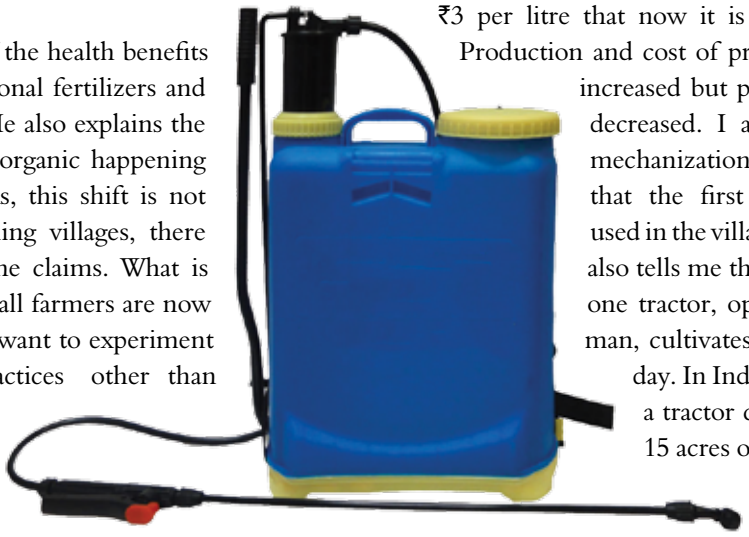
Vinod Jyani talks of the health benefits of not using conventional fertilizers and chemical pesticides. He also explains the monumental shift to organic happening across the country. As, this shift is not evident in the adjoining villages, there is skepticism about the claims. What is certain though is that all farmers are now interested and would want to experiment with more organic practices other than using cow manure that, practically, every farmer already does.

Fear of losing yields even in the short term and possible shortfall in revenue will hold them back. Organic farmers said it took three years for a possible bounce back. In these harsh times, when one season is too long, three years seems a world away from reality. At the end of the seminar lots of farmers resolved to start going organic in some small way, like by growing vegetables for home use for a change or trying the butter milk magic potion.

There are other worries too; the changing reality of the Indian countryside and there is the questions that like the Congress grass (*Parthenium hysterophorus*) refuses to go away. These are question that I ask in all my farmer interactions: Surinder Pal finds people less hard working. The advent of the television and mobile phones has made people more self-centered. The panchayat elections have hurt the spirit of community development with people from the village pitted against each other. Local handicrafts have suffered; there are no cobblers or ironsmiths in the village anymore.

Have villages progressed is the next question? The answer is yes. Overall, the villages have progressed. Surinder Pal vaguely remembers wages in 1975 being ₹10 that now stand at ₹250 a day in season or during harvesting and sowing times. On the flipside there is water logging; a recent phenomenon that leaves him as helpless as it leaves me. It is a nightmare that is unravelling before our eyes; even as we stay awake.

He also remembers that diesel in 1975 cost ₹3 per litre that now it is ₹56 per litre. Production and cost of production have increased but profitability has decreased. I ask him about mechanization. He recalls that the first tractor being used in the village in 1950. He also tells me that in Australia, one tractor, operated by one man, cultivates 300 acres per day. In India, one man on a tractor cultivates 10 to 15 acres only in a day.



This reminds me that it will be very unfair to allow unhindered food imports into the country. I bear no ill will against my brethren in other parts of the world. The Indian reality is different with very small farms and unique population pressures; the terms of cultivation are entirely dissimilar.

Surinder Pal has sold some "sheesham (*Dalbergia sissoo*)" trees to Sharma Industries in Jodhpur, which sells it to MDM (Messon-de mont), France. The quality certification for this is done by the TFT group from Europe that has an office in India and other parts of world. He is also growing a cloned variety of sheesham DS-14 sold by the Forest Research Institute, Dehradun. The last storm uprooted two trees and Surinder Pal is worried that the cloned trees might have shallow roots.

My Home Recipe for 'Rabri'

1. Mix 1 litre of *chach* (buttermilk), 450 grams of *bajri* (pearl millet flour) 50 grams of *moth* (dew bean flour) and *namak* (salt) to taste.
2. Later add 1.5 litres of water.
3. Leave out in sunlight from 9 am to 1 pm.
4. By now the solid matter has settled at the bottom of the vessel. Remove the liquid portion floating at the top.
5. Heat the liquid portion to boiling temperature.
6. When the liquid is boiling like tea, add the solid matter and stir for five minutes. Remove from fire and allow to cool overnight.
7. *Rabri* is savoured next day and gets you ready for the best afternoon nap ever.

Surinder Pal is a great believer in Arnold Howard, whom he recalls nostalgically as having joined the Pusa Institute in 1905 in Bihar (the present Indian Agricultural Research Institute in Delhi was in Bihar before Partition). Dr Arnold resigned to pursue his interests in Indian farming system that the British did not quite like. He was then employed by the Maharaja of Baroda, when he documented and popularized the already existing technique of compost farming.

He believes that Madhya Pradesh is doing good work and providing good organic practice literature. After two hours of my probing questions, Surinder Pal is still not tired. I ask my last question: how much does it cost to grow his crop the organic way? His answer provides a good ending 'sar dardi aur sar khapai' (headache and persistent work) is the best translation that I can manage. ●

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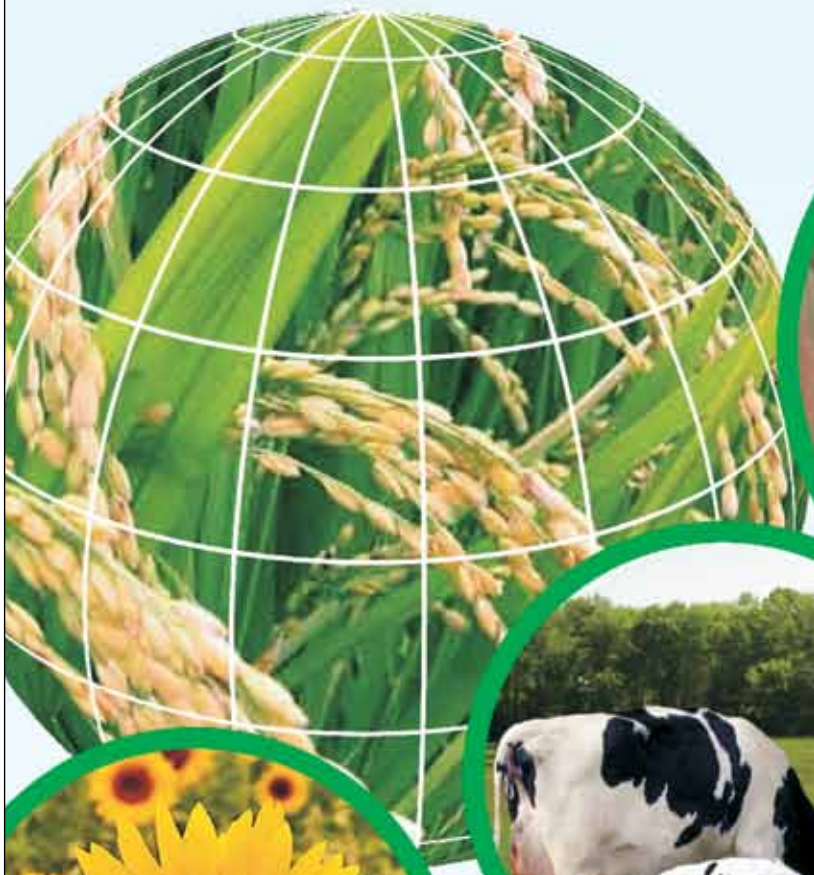

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