Outlook: Magic with Millet 28

Green Fingers: The Earth's Humble Servant 64

FARMERS' FORUM

Vol. 12; No. 01; January-February 2012 ₹50 www.farmersforum.in

Issues and Ideas for Indian Agriculture

FACE TO FACE
CRISIS IN AGRICULTURE 16

PERSPECTIVE
FOOD SECURITY ACT: THE MALNUTRITION ANGLE 36

CASE STUDY
JUICY ENOUGH FOR A BRIBE 44

TOWARDS PRODUCTIVE AGRICULTURE 48

PROS & CONS
FDI IN MULTI-BRAND RETAIL 52

OPTING FOR AGRICULTURE-LED ECONOMIC REVIVAL 08

Volume 12; No. 01;
January-February 2012
RNI No. DELENG/2001/5526

Editor, Printer & Publisher
Ajay Vir Jakhar

Editorial Board
Prof. M. S. Swaminathan
Dr R. S. Paroda
J. N. L. Srivastava
Prof. R. B. Singh

Editorial Support
Paranjoy Guha Thakurta
Aditi Roy Ghatak

Design
© Peali Dezine
pealiduttagupta@pealidezine.com

Contact us
editor@farmersforum.in

Advertising
Sunil Kumar (+91 9811222902)
sunil.kumar@farmersforum.in

Subscription
subscription@farmersforum.in

Owner
Bharat Krishak Samaj

Published at
Bharat Krishak Samaj,
A-1, Nizamuddin West,
New Delhi 110013

Printed at
Brijbasi Art Press Ltd., E-46/11, Okhla
Industrial Area, Phase-II, New Delhi

Cover Picture
© Dinodia Images

Time to Make Agriculture

REMUNERATIVE

"Money is like manure. You have to spread it around or it smells."

– J. Paul Getty

The new year is a good time as any to begin with a conundrum. The Constitution of India lays great emphasis on the Indian villages, on agriculture, the village panchayats on the farming industry and animal husbandry. It does not talk about the Planning Commission or of "middlemen." Yet the future of Indian farm sector is so intricately woven with the mindset of the Planning Commission and the shenanigans of the middlemen that abound in the Indian economy.

The manner in which the Indian farmer is buffeted by the whims of one and wiles of another, brings to mind an interesting Oscar Wilde observation: "Selfishness is not living as one wishes to live; it is asking others to live as one wishes to live." The Indian farmers are expected to love the doles handed over by the government and live on the mercy of its subsidies and welfare schemes. That has been the existing order since Independence and liberalisation measures have come in dribs and drabs, making hardly a difference to the real status of the farmer. Agriculture, over the years, too has been performing poorly.

Given the urgent need to enhance India's food security and to allow the farmer to attain his potential, there has been talk of creating a policy regimen that would empower the farmer to realise his potential. The Budget is as good a time as any to start to initiate change at the institutional level for starters. Can the Union Budget 2012-13 fulfill the aspirations of the farming community, the *aam aadmi* and not expect them to lap up what they are told will be good for them? Indeed, can the Budget make a difference?

To go back to the Indian Constitution, what does find mention in it are the district planning committees, which were revived by the Panchayati

GIVEN THE URGENT NEED TO ENHANCE INDIA'S FOOD SECURITY AND THE TO ALLOW THE FARMER TO ATTAIN HIS POTENTIAL, THERE HAS BEEN TALK OF CREATING A POLICY REGIMEN THAT WOULD EMPOWER THE FARMER TO REALISE HIS POTENTIAL.

Photo: Debashish Mitra

THE FARMER WHO WONDERS WHO IS RESPONSIBLE FOR THE SOUP THAT HE FINDS HIMSELF IN,NEVER ASKS WHAT HIS OWN ROLE IS IN THE PROCESS OF OUR GREAT DEMOCRACY.

Raj institutions by the former Minister, Mani Shankar Aiyer. These have unfortunately remained on paper only. As members of the Bharat Krishak Samaj, one has had the opportunity to visit farmers in different states every month and have the rather impossible task to explaining to them who is responsible for their plight. It is equally impossible to find a simple way to connect the dots from the middlemen to the Planning Commission. It is, however, not so difficult to understand that it is, eventually, the farmer – who votes on the basis of caste and sectarian considerations, divided further by the divisions on political attachments amplified by Panchayati raj elections – who is responsible for his own miseries. Indeed, the farmer who wonders who is responsible for the soup that he finds himself in, never asks what his own role is in the process of our great democracy.

The farmer sells his potatoes today at Rs 2 a kg, which sells in the retail market for Rs 10 a kg; a 500 per cent increase after a 10 hour journey. That is an injustice that the Budget alone cannot solve but better legislation and effective implementation of better policies can redress. What the Budget can definitely provide is a sustained flow of increased funds for agriculture infrastructure. On the eve of the Budget-making exercise, it would be worthwhile reminding the finance ministry of the words of J. Paul Getty, "Money is like manure. You have to spread it around or it smells." In India, one has the smells of scams and sell-outs. May be it is time for some of the money flow to the agriculture sector and for it to be used efficiently.

Two recent experiences illustrate the misfortune of the farming community. While on a drive to Bhatinda for a debate on CNN-IBN on the FDI in retail, I saw a farmer sitting by a heap of potatoes and stopped to ask him why, for heaven's sake, was he guarding his potatoes that were selling at Rs 2 a kg that day (it cost more to transport them to the marketplace). Poker faced, he said: "I am not guarding my potatoes but am here to save my field lest the neighbour dump his crop of potatoes on my land!" On another trip to farms in Uttar Pradesh, one learnt that a farmer had packed his potatoes for sale, the thieves came at night and cut open the sacks and stole the sacks; not the potatoes.

While the government is in a self-congratulatory mood over having contained food inflation, many farmers are contemplating suicide. The actual number of farmer deaths is shocking, especially in the more progressive Indian states. It should make those who gloat over the nine per cent growth of the economy hang their heads in shame. Yet there is no shame; not even a serious approach to addressing the question of farm finance seriously. Nothing is more astounding or humiliating that individuals, whose NGOs are funded by foreign funds decide and dictate policy while the Indian farmer suffers their ignorance and influence in silence.

Why does the Indian farmer continue to suffer thus? It would be worthwhile to expound a farmer's position on this question and risk being dismissed by the intellectuals who make and influence policy as the 'ravings of a mad farmer'. The Indian democracy is like a pressure cooker, with every election serving as a point where the pressure cooker releases steam. This is just like people giving vent to their anger and release their pent up frustration at the elected representative or government of the day. It is the Indian democratic process that prevents the sense of deprivation from getting inflamed into a revolution. The elections provide safety value and perpetuate *status quo*. Were it not for its universal adult suffrage, India too would have its Arab Spring.

Policymakers and extra-constitutional authorities are invariably confused about the distinction between the problem and the consequences of the problem the world over. While ignoring the problem, there are efforts to mitigate the consequences of poor planning and execution of lopsided policies. India continues to find money for subsidies like MNREGA and the Right to Food Bill. While these are noble objectives, the approach is wrong; completely wrong. The problem is agriculture, which is the largest private sector enterprise, has become unprofitable. Farmers are thus required to be fed cheap grain and jobs needs to be created for the villagers. Had the country chosen to invest in making agriculture remunerative, the farmer would not need such acts of mercy; nor such grand wastage. •

IT IS THE INDIAN DEMOCRATIC PROCESS THAT PREVENTS THE SENSE OF DEPRIVATION FROM GETTING INFLAMED INTO A REVOLUTION

Photo: Debashish Mitra

Ajay Vir Jakhar
Editor

To the Editor

Not a separate species

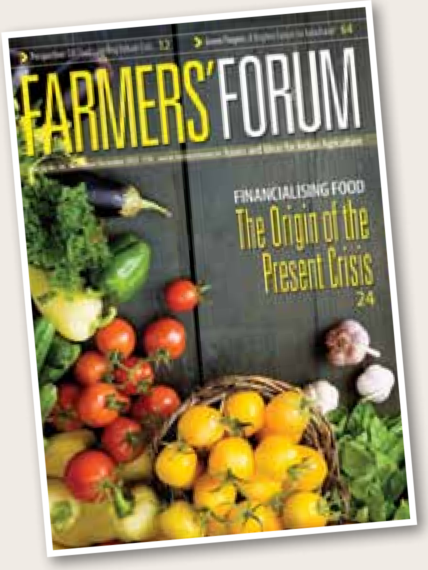
Apropos of your editorial "Time to Change Mindsets about Indian Farmers" ***(Farmers' Forum November-December, 2011)*** I entirely agree with your perspective that the Indian farmer is considered to be a separate species; someone who does not want the things that the rest of 'India Shining' wants. Every Indian must change his attitude towards farmer, because he is the one who works in the field and feeds the entire nation. He also wants a fair deal just like every other Indian.

Vinay Kohri,
Palampur, (Himachal Pradesh)

Speculating on food

Sujan Pandit's article "Financialising Food: The Origin of the Present Crisis" ***(Farmers' Forum November-December, 2011)*** is most perceptive and provides excellent insights into the origin and root cause of the price rise of food and other necessities. Not very many know that the 1990s was the decade when Goldman Sachs made a financial innovation to make speculation in agricultural commodities a common phenomenon, especially after the dotcom bust. It is easy to see how the Goldman Sachs Commodity Index was designed encourage speculators gamble on the prices of an entire range of commodities led to the global hike in food prices and how the Commodity Futures Modernisation Act of 1999 gave it a much needed spur. What this means for the rest of the world, one does not know but it does have very sinister implications for India. One wonders if those that plan the country's future, the pundits at the Planning Commission and the Finance Ministry are taking serious note of this.

Anand Pathak, *Khurja, (Uttar Pradesh)*



Wanted: fair prices

I am most impressed by Surinder Sud's article "Commercialising Indian Agriculture" ***(Farmers' Forum Nov-Dec, 2011)*** because, as a farmer, I support the commercialisation of agriculture. We want markets to sell our produce at better price. Gone are the days when most farmers, being small and marginal landholders, did not have enough marketable surplus and, therefore, were largely unaffected by market trends. Today, we need efficient markets to sell our produce at the best possible terms.

Naresh Manash, *Pathankot*

Backward land, progressive farmer

Your column, Green Fingers, is possibly the most interesting section in your magazine. I love the way you reach out to these distant people doing remarkable work at the grassroots, often with little recognition of their accomplishments or contribution. 'A Brighter Future for Kalachand ***(Farmers' Forum November-December, 2011)*** is yet another gem and should be motivational for many farmers, especially in Bengal, because he has overcome his lack of education and has brought common sense and hard work to bear on the land that he works on, while ensuring that his progeny gets the benefit of education. This shows that the Indian farmer is modern and progressive at heart and given the slightest help can use both traditional and modern knowledge and inputs to produce magic on the fields: through multicropping, as in this case.

Kushal Thakur,
Bilaspur, (Himachal Pradesh)

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

CONTENTS

COVER STORY

OPTING FOR AGRICULTURE-LED ECONOMIC REVIVAL 08
Naresh Minocha

FACE TO FACE
CRISIS IN AGRICULTURE: OF TECHNOLOGY FATIGUE; RICH-POOR FARMER DIVIDE; GOVERNANCE AND GROWTH 16
Abhijit Sen, Member, Planning Commission, talks to Farmers' Forum

CASE STUDY
JUICY ENOUGH FOR A BRIBE 44
Ravleen Kaur

TOWARDS PRODUCTIVE AGRICULTURE 48
Amod Agrawal

PROS & CONS
FDI IN MULTI-BRAND RETAIL: WHY WE CAN'T WAIT 52
Debashish Mitra

FDI IN MULTI-BRAND RETAIL: BUILT ON SPECIOUS LOGIC 58
Bhavdeep Kang

OUTLOOK
MAGIC WITH MILLET: TOWARDS ENHANCING INDIA'S FOOD SECURITY 28
Ashish Ghosh

PERSPECTIVE
FOOD SECURITY ACT: THE MALNUTRITION ANGLE 36
D.S. Bhupal

GREEN FINGERS
THE EARTH'S HUMBLE SERVANT
WATER MAN, LAXMAN SINGH OF LAPORIA 64
Ashim Choudhury

COVER STORY

Opting for Agriculture-Led Economic Revival

Naresh Minocha

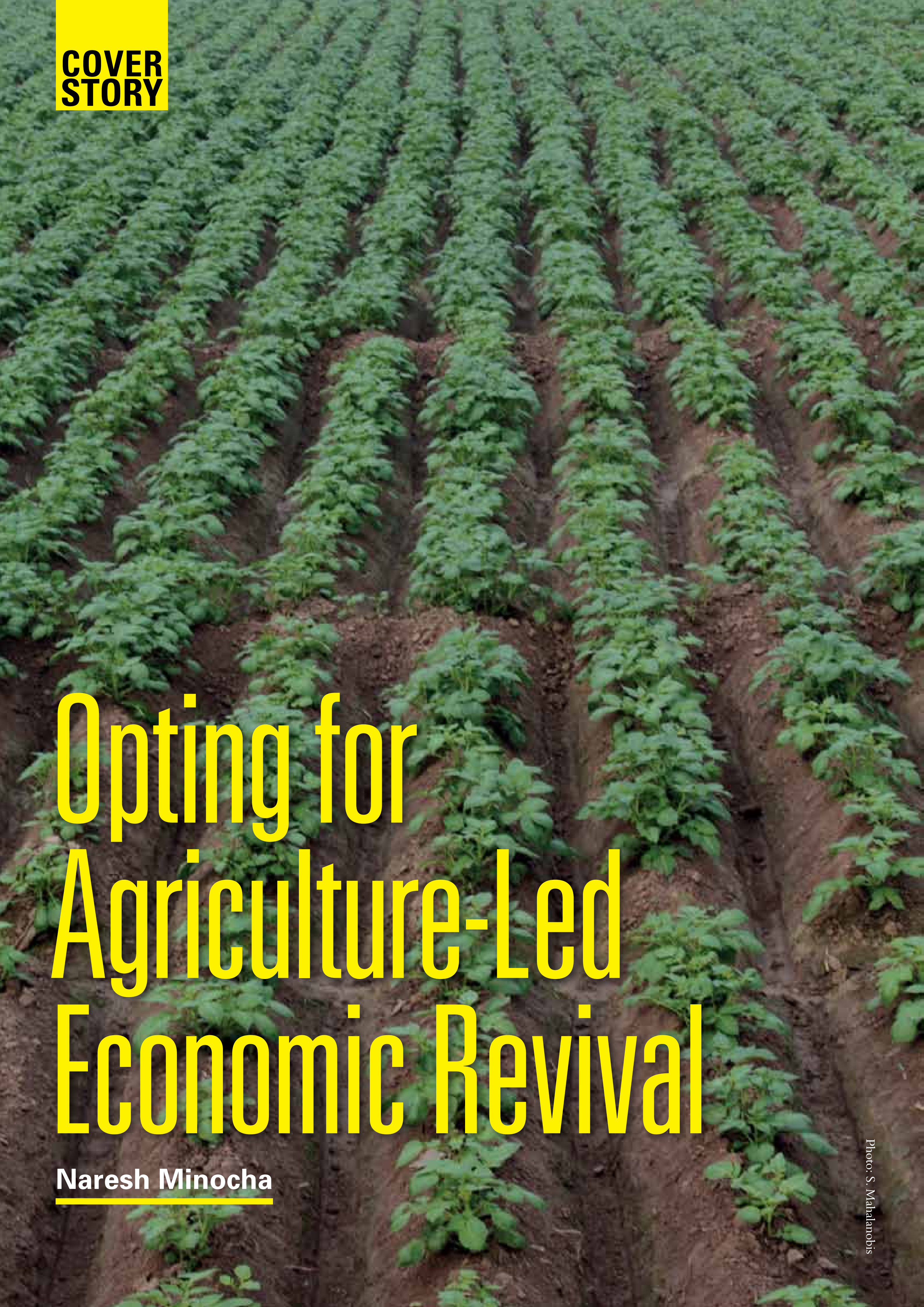


Photo: S. Mahalanobis

The spectre of economy slipping back to the Hindu rate of growth over the long term is looming large over New Delhi's Raisina Hills that houses the North Block, the place where the Budget for 2012-13 is in the works. The investment climate for manufacturing, mining and service sector has turned bleak because of such factors as civil society and judicial activism, gridlock between the opposition and the government. As it is, the prolonged slow-down in agricultural growth over the years has compromised the country's food security, contributed to food inflation and driven countless farmers to suicides.

To quote the 12th plan Working Group on Crop Husbandry and Allied Areas, "right from the Ninth Five-Year Plan onwards, a four per cent growth in Indian agriculture has been targeted but the actual growth rate has remained considerably lower than this target. The lower than targeted performance of agriculture in the backdrop of an impressive growth of the overall economy has serious implications."

Countless manufacturing and mining projects have either been delayed or shelved. The slow-down in capital investments cannot be reversed overnight through the magic wand of tax sops that form a perennial feature of the Union Budgets. It takes years to take a project proposal from the idea stage to the start of commercial operations.

Even the anticipated announcement of new policy initiatives for sectors other than agriculture would take a few years to facilitate the actual flow of investments. It would take a few more years to create new jobs from such investments. CRISIL Research, a leading research agency, has lowered the estimated GDP growth forecast for 2011-12 to 7.0 per cent (from 8.5 per cent achieved in previous year). It reckons that this would be the second-lowest growth in the past nine years after 6.8 per cent in 2008-09, the peak of global financial crisis. There are not many independent takers for the bullish growth target of an annual nine per cent set for the 12th Plan.

The Asian Development Bank, for instance, has projected a decrease in annual growth in gross domestic product (GDP) for India to 4.7 per cent in decade 2011-20 from 5.5 per cent attained during 1981-2007. The GDP growth is estimated to slow down further to 4.3 per cent in 2021-30, according to ADB report 'Long-term projections of Asian GDP and trade' published in November 2011'.

There is, however, the proverbial ray of hope of a quick reversal of the all-round sinking feeling. The hope lies in good old agriculture, where the gestation period for reaping returns on investments is the shortest. Experience shows that agricultural buoyancy, as and when it occurs, has the potential to catalyse the growth of both manufacturing and service sectors.

As admitted by the Finance Ministry in its mid-year review of the economy in December 2011, "Macroeconomic resilience is anchored on the agricultural sector performance." The good show by agriculture is, however, more due to good monsoon than due to any policy initiative. Agriculture has been relegated to the status of the last fiddle in the economic scheme of things for the government, with the first fiddle being the services and the second one being the manufacturing.

This is perhaps partly due to the fact that the agriculture sector is woefully poor in lobbying and self-marketing. Growers and farm workers prefer

Table: Projections of Gross Domestic Product (GDP) in India and other Asian countries by Asian Development Bank (Source ADB)

Economy	Actual	Projections	
	1981-2007	2011-2020	2021-2030
Gross domestic Product			
China	9.4	6.1	5.0
Hong Kong	5.0	4.4	2.8
India	5.5	4.7	4.1
Indonesia	4.8	4.7	4.1
Korea	6.3	4.4	3.4
Malaysia	6.2	5.5	4.8
Pakistan	5.1	6.8	6.3
Philippines	3.4	6.0	5.5
Singapore	6.8	5.2	3.3
Taipei	6.1	3.7	2.5
Thailand	5.4	4.0	3.6
Viet Nam	6.4	4.9	3.7

Photo: S. Mahalanobis

to toil than lobby with the powers that be day in and day out. The stakeholders of other sectors, push their agenda through seamless interface with the government, the media, non-governmental organisations and other entities.

The articulation of these facts should not be construed as an attempt to belittle the importance of services and manufacturing sectors in creating jobs and wealth. These sectors must get requisite attention in the forthcoming Budget for 2012-13.

The mandarins in the Finance Ministry, however, should not fritter away the reverse the economic slow-down on the strength of agriculture. They can go back to the roots of the economy to restore economic growth through innovative initiatives under the Budget. All eyes are indeed now on the Finance Minister, Pranab Mukherjee. Will he exhibit the vision for the agriculture-led acceleration of economic growth?

The UPA government can reap a rich and

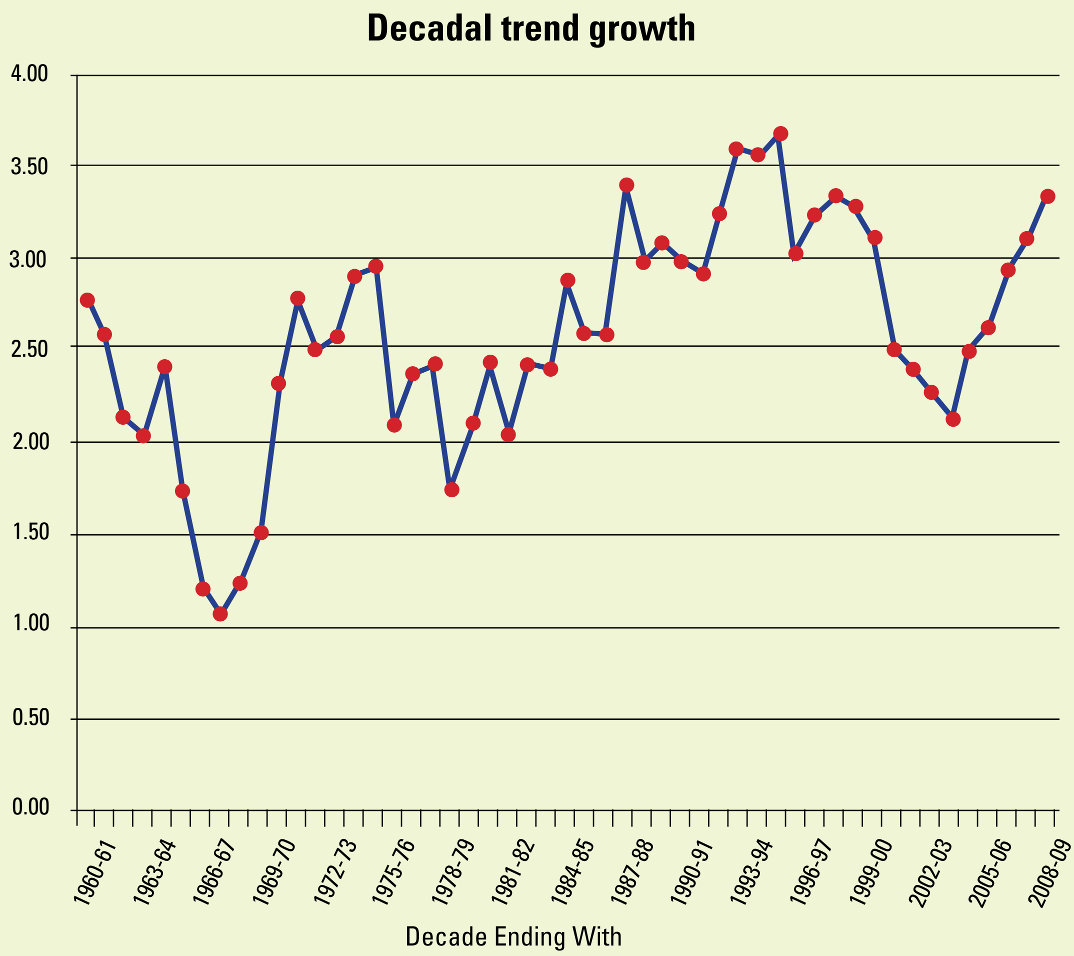
Table: Production of important livestock products over the years

	Milk (million tons)	Meat* (million tons)	Eggs (billion numbers)	Wool (million kg)
1991-92	55.7	3.6	21.983	41.6
2000-01	80.6	4.0	36.632	48.4
2001-02	84.4	4.0	38.729	49.5
2002-03	86.2	4.1	39.823	50.5
2003-04	88.1	4.1	40.403	48.5
2004-05	92.5	4.2	45.201	44.6
2005-06	97.1	4.2	46.235	44.9
2006-07	100.9	4.3	50.663	45.1
2008-09	108.6	4.4	55.395	42.9
2009-10	112.5	4.4	59.844	43.2
2010-11	116.2	4.5	61.454	43.3
% annual growth				
1991-92 to 1999-2000	4.39	1.01	4.18	2.51
2000-01 to 2010-11	3.80	1.11	5.60	-1.60

** from registered slaughterhouses only.*

(Source: Report of the 12th Plan Working Group on Animal Husbandry, etc.)

Graph: Trend growth (in percentage) in agriculture based on 10 years periods, beginning 1951-61 and extending to 2001-11:



(source: Report of the 12th plan working group on crop husbandry, etc.)

Experience shows that Budget-makers give very limited consideration to numerous proposals embedded in such memoranda. They have to strike a balance between conflicting demands

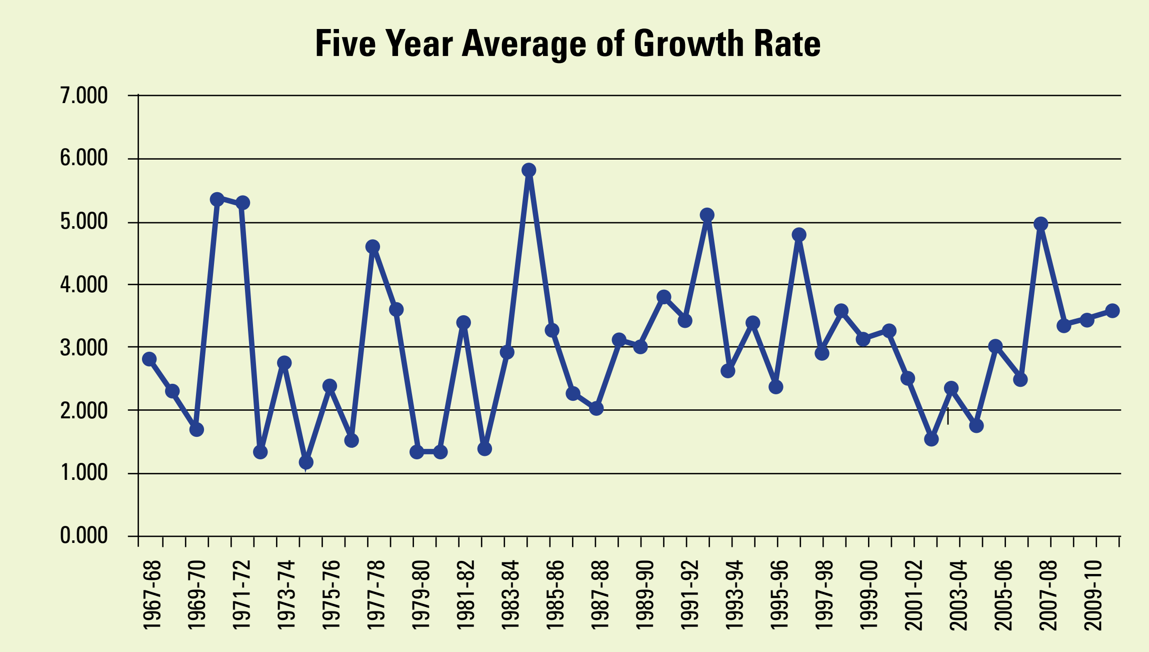
multiple harvest by applying judicious dose of policy inputs to agriculture. The benefits include:

1. Economic growth both due to agricultural growth and its ripple effect on the manufacturing and service sectors;
2. Inclusive growth as farming and allied operations are labour-intensive and thus the rural poor can share the benefits of the growth right at their door steps and
3. Political dividends two years down the line for the Lok Sabha polls.

As is the convention, Mukherjee kick-started pre-Budget discussions with different sections of the economy by first meeting representatives of agriculture on January 11. If the official release on the meeting is any indication, nothing radical was proposed or suggested by the either side. Apart from the wish list of different representatives of farming community, Mukherjee would be getting suggestions on agricultural issues from different industrial and professional associations.

Several associations have already submitted their pre-Budget memoranda. Experience shows that Budget-makers give very limited consideration to numerous proposals embedded in such memoranda. They have to strike a balance between conflicting demands for direct and indirect sops that ultimately strain the exchequer. This year, however, the situation is different. Mukherjee has to revive economic growth. He also needs to break

Five yearly ave rage of annual rate of change in GDP agri at constant prices (%)



(source: Report of the 12th Plan working group on crop husbandry, etc.)

free from the trend of jobless or low employment growth. Besides, he has to factor in additional challenges for the agriculture sector that would result from the implementation of the National Food Security Bill, which would hopefully become a law in 2012.

If he has to prevent further slippages in food security, trade deficit and current account deficit, he has to give a big boost to agriculture sector. To do this, he can rely on valuable recommendations from several working groups on agriculture, irrigation and rural development constituted by the government to prepare inputs for the 12th Five Year Plan.

The recommendations from these groups comprising experts from different quarters are professional. They should be given due importance. They can, in fact, be combined by the Finance Ministry officials to prepare a blueprint for agriculture-cum-employment-led economic growth over the next five years.

As 2012-13 would be the first year of the 12th Plan, Mukherjee should not overlook these recommendations while finalising the Budget.

The officials should keep in mind four guidelines in laying the road map for sustainable and robust growth of agriculture through the instrument of Budget.

- First, the key to facilitating long-term buoyancy in agricultural growth lies in making investments in agriculture infrastructure and schemes that minimise the diverse risks faced by farmers.
- Second, this norm has to be coupled with appropriate incentives that should be crop-neutral and region-neutral to the extent possible.
- The third guideline for preparation of a farm Budget should be to develop synergies between programmes that cater to different segments of agriculture for optimising the expenditure and outcomes.
- The fourth factor is to identify downstream and upstream linkages between agriculture and other sectors and then formulate schemes and incentives that have end-to-end impact across any value chain.

The Finance Ministry must realise that agriculture is the most risky of all economic activities. The Union Budget thus must be generous in making allocations on projects and schemes that can minimise risks for all segments of agriculture.

The risks include unpredictable weather, input shortages, worsening labour shortages during the peak sowing or harvesting period and absence of price support at the time of harvest for many crops. The government's failure to overcome such challenges has contributed to the persisting agrarian crisis that gets highlighted periodically through reported suicides by growers.

As pointed out by the 12th Plan Working Group on Outreach of Institutional Finance, Cooperatives and Risk Management (WGOIFCRM), "despite the existence of country-wide crop insurance programme for over 25 years, only about 1/5th of the farmers or cropped area could be insured. Only a minority of non-loanees (institutional non-borrowers), who constitute about 60 per cent of the total farmers participate, in crop insurance despite high level of premium or claim subsidies. Moreover, there are many crops particularly vegetables and fruits, etc, for which insurance products are not available."

The insurance coverage is pathetic in the livestock and poultry sector. Only 1.5 per cent of total livestock population has insurance cover! As insurance business is under the administrative control of Mukherjee, he must pave the way for universal coverage of all segments of agriculture sectors. He should not waver in implementing the WGOIFCRM's recommendation to introduce catastrophe protection for all non-borrowing farmers to shield them from extreme financial distress (an euphemism for suicide perhaps).

He can alternatively act on the recommendation to launch a 'Non-Insured Crop Loss Assistance' for farmers, drawing inputs from a similar programme in the USA. Under the Catastrophe Risk Protection in the USA, the premium is fully subsidised by the Federal government. The farmers have to only pay an administrative fee for document processing, which too can be exempted for farmers with limited resources.

Mukherjee should complement the comprehensive insurance scheme with a national rain-fed area farming programme (NRFP), as recommended by another 12th Plan working group on natural resource management and rain-fed farming.

This group has proposed the launch of this programme in 1,000 blocks with an outlay of Rs 10,000 crore. In each block, the programme can be initially taken up over 10,000 hectares. As the group says: "Even after achieving the full irrigation potential, nearly 50 per cent of the net cultivated area will remain dependent on rainfall. Rain-fed agriculture supports nearly 40 per cent of India's estimated population of 1210 million in 2011. India ranks first among the rain-fed countries in the world in terms of rain-fed area but ranks among the lowest in rain-fed yields."

While formulating schemes to tap the potential of rain-fed areas, the officials should not lose sight of the urgency to wipe out the gap between irrigation potential created (IPC) and irrigation potential utilised (IPU). This gap has widened with each successive five year plan and it today stands at 18 per cent.

If Mukherjee can put in place a time-barred scheme with 90 per cent central funding to bridge this gap through initiatives like command area development, he can put at rest all concerns about food security for the next five years.

The 12th Plan Working Group on Major & Medium Irrigation says, closing the IPC-IPU gap is also a "low-hanging fruit." It can not only provide water to additional millions of hectares but also improve the returns on money already invested in irrigation projects. The government must also pay attention to the need for prevention of wastage or loss of water. This calls for massive investments in seepage prevention projects across all water bodies and in water-saving techniques such as drip irrigation.

India ranks first among the rain-fed countries in the world in terms of rain-fed area but ranks among the lowest in rain-fed yields

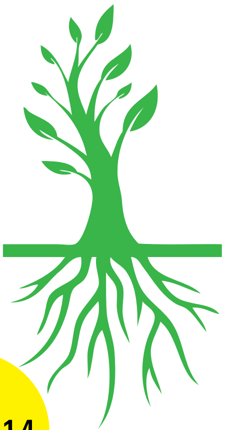
The forthcoming Budget should herald a project to give big push to fertigation, which should ideally be in the form of delivery of liquid fertilisers through drip irrigation systems. Fertigation is the key to reducing subsidy on both water and fertilisers as it provides for most efficient use of the two crop inputs. The government must bring liquid fertilisers under the subsidy regime to encourage their indigenous production. In the interregnum, it should allow duty-free import of these fertilisers. The subsidy outgo on this count can partly offset by bringing urea under nutrient-based subsidy (NBS) scheme.

The next breakthrough in farm yields should come through the substitution of commodity fertilisers with customised fertilisers and enhanced availability of seeds of high yielding varieties. The Budget for current year provides for launch a National Mission on Seeds with investment of Rs 50 crore to improve the availability of quality seeds. This allocation is peanuts and should be stepped up manifold.

Bonding Agriculture With Other Sectors

The Union Budget can indeed be transformed into a powerful instrument to create a bonding between agriculture and other sectors. The Finance Ministry has to not only strengthen the existing linkages between agriculture and other sectors but also create new ones such as those suggested by the Institute of Chartered Accountants of India (ICAI).

The ICAI has proposed that the corporate sector be lured to invest in development of agricultural infrastructure sector by granting a specific benefit under the Income Tax Act (ITA). In its pre-Budget memorandum, the ICAI says: “There is an urgent need to invest heavily in building up of a viable and efficient infrastructure in the agriculture sector in India. This would necessitate building up of proper computerised infrastructural facilities and electronic highways for procurement, dissemination of best agricultural practices, weather information, storage practices etc., as well as offering the best possible price to the farmers.”



Pointing out that Section 80IA of ITA provides for deduction of profits from industrial undertakings engaged in infrastructure development such as highways and airports, the ICAI has recommended that the ambit of this section be enlarged to cover rural and agricultural infrastructure. The definition of tax incentive eligible infrastructure should thus include water harvesting facilities like check dams, wells and ponds, green houses and poly houses and village kiosks housing information technology infrastructure.

Similarly, the government has to dovetail the requirements of environmental rejuvenation, employment generation in rural and tribal areas and industrial raw materials through a massive plantations programme on degraded and waste lands.

The obvious industrial participants in this programme would be the paper and viscose industries that are partly dependent on imported pulp and wood, oil companies that want to blend biofuels with petroleum products, herbal companies, non-edible oils-based chemical companies and other agro-processors.

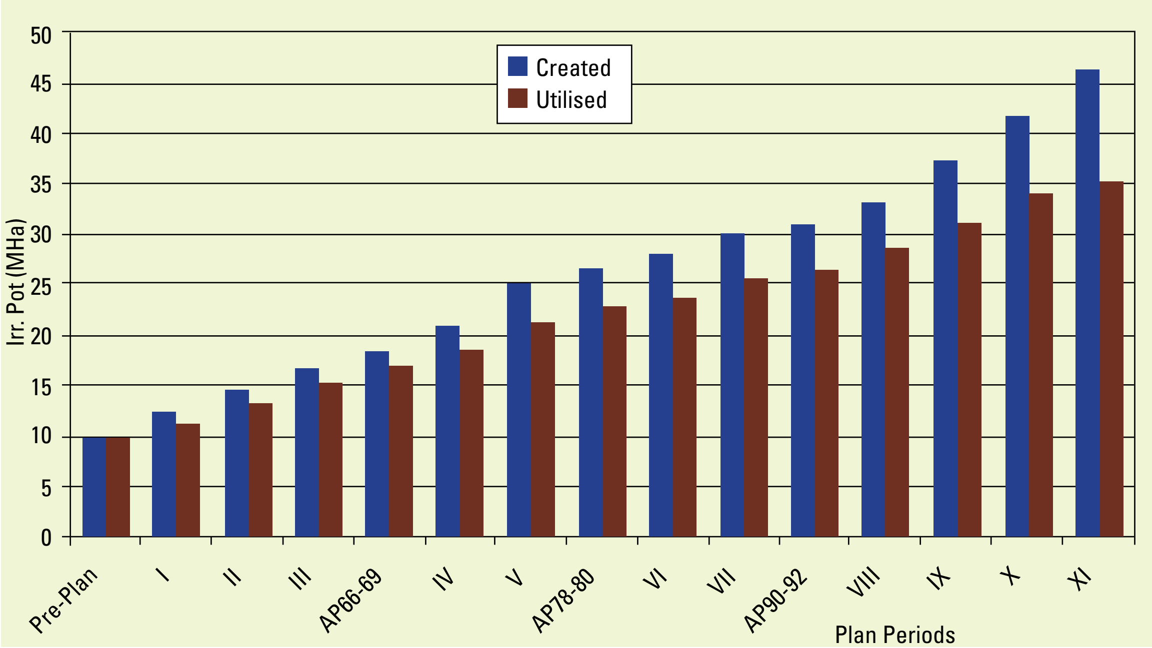
It is pertinent to quote Indian Paper Manufacturers Association (IPMA) that says in its pre-Budget memorandum: “The Indian paper and paperboards industry has potential and also capabilities to service the growing demand in domestic and international market and also to create huge employment avenues in the rural-India through agro-forestry and also at mills, provided the competitiveness of the value chain is encouraged by the Government of India.”

The centre and the states should, in fact, apply their minds jointly to empower landless and marginal farmers with land for which different options have been recommended by the 12th Plan Working Group on Disadvantaged Farmers including Women (D&W). One option envisages leasing of government land to landless and marginal farmers and organising them into co-operatives for joint farming and marketing of farm produce. After all, land is the biggest constraint in increasing agricultural production as well as generating new employment.

According to the group, “there are many potential advantages of farmers cooperating, ranging from joint marketing to land pooling and group farming, with various forms of co-operation in between, such as jointly investing in lumpy inputs like irrigation, or joint crop planning.” It adds: “we recommend that all forms of farm cooperation be strengthened.” The central government should in fact take the spirit of co-operation further by facilitating bonding between farmers and industry through fiscal and institutional support. Such an arrangement might well lead laggard states to frame regulations for contract farming, which helps farmers to transfer the risks of farming to contracting companies as well as embrace innovations in their quest to improve their earnings.

The opening up of multi-brand retailing to foreign direct investment would not have resulted in a furore if the government had first created a mandatory framework for linkages between farmers and MBR companies on the one hand and between MBRs (as wholesalers) and kirana stores and street vendors on the other.

Graph: The ever-increasing gap between irrigation potential created and irrigation potential utilised



(Source: Report of the 12th Plan Working Group on Major and Medium Irrigation)

The Finance Minister should also loosen his purse-strings on rejuvenation of cooperatives for which he had a new scheme with a namesake outlay of Rs 25 crore. He should, in fact, implement WGOIFCRM's recommendation to transform primary agricultural cooperative societies (PACs) into one-stop shops to provide all inputs and services including renting of farm equipment.

To cope with labour shortages accentuated by the Mahatma Gandhi National Rural Employment Guarantee Act (MGNREGA), the government must give a big push to farm mechanisation. Mukherjee can find handy a recommendation by the 12th plan Working Group on Crop Husbandry for launch of Farm Mechanisation Mission. This group has recommended that grant of "financial incentives" of 50 per cent on the purchase of mechanical power operated farm machinery to farmers, co-operatives and other such entities.

"Financial institutions may provide machinery loans with reduced interest rates and easy payment terms. State governments may consider top-up subsidy," says the group. It has also recommended the provision of financial incentives of 80 per cent on the purchase of manual tools and draft animal power based implements and machinery. Instead of creating MGNREGA-induced tension between farmers and farm labourers, the government should ensure that MGNREGA and agricultural schemes are dovetailed to improve food, water and energy security.

The impact of the MGNREGA is being felt by the industry especially by plants in rural areas that depend on casual labour. The All India Plastic Manufacturers Association (AIPMA), for instance, has contended that the MGNREGA gives minimum wages and demotivates the workers from rising to higher level of training for better jobs, which is a drain on economy. The AIIMPA has suggested that this scheme should be dovetailed to the small and medium enterprises (SMEs). Under such arrangement, SMEs would add their own funds and instead of 100 days as available under the scheme, industrial employment would last 150 days or more. What applies to the MGNREGA also applies to other economic activities. (See box on bonding agriculture and other sectors).

While synergising public expenditure across the entire spectrum of programmes and schemes covering all sectors, the Budget should keep agriculture as the nucleus of the inclusive growth agenda. As the 12th Plan Working Group on Crop Husbandry says, "It is essential that India focus on farmers and natural resource system, comprising land, water, vegetation, which form the production base of agriculture. Often, policies are focused on farming without looking at their implications for the farmers. Unless growth and development of farming leads to improvement in welfare of farmers, it cannot be sustained." ●

The author, a senior journalist, specialising in chemicals, fertilisers, energy and telecommunications is Consulting Editor, taxindiaonline.com and Associate Editor, gfiles india.

CRISIS IN AGRICULTURE:

Of Technology Fatigue; Rich-Poor Farmer Divide; Governance and Growth

Dr Abhijit Sen** is Member, Planning Commission of India. He is a Ph.D. in Economics from the University of Cambridge (currently on leave as Professor of Economics at the Jawaharlal Nehru University) and has also taught at the Universities of Sussex, Oxford and Cambridge. Besides serving various think tanks in the states and at the centre, Dr Sen has been a consultant with UNDP, ILO, FAO and various other multilateral organisations. In a candid interview, he speaks on a range of issues affecting agriculture, farmers and ordinary people. Talking to him about such issues as subsidies, small land holdings and the overall efficiency of Indian agriculture are Farmers' Forum Editor, **Ajay Vir Jakhar** and **Paranjoy Guha Thakurta.

Abhijit Sen, *Member, Planning Commission, talks to* **Farmers' Forum**

PGT: ***To begin with a basic question: what are the most important problems that farmers in India are facing; looking at agriculture as a whole?***
AS: The main problems with agriculture – not necessarily the main problems with farmers – are the quality of the land; the quality and quantity of water available and the signs that new technologies are not delivering as much as was expected. There are clear signs, as stated in 11th Plan document, of a technological fatigue…

PGT: ***Technological fatigue?***
AS: This reflects in the margins that one is getting in terms of increased potential yields or increased savings in costs. These are simply not commensurate with either the investments being made or with achievements in the past. This is the real problem of Indian agriculture. Nature is limited; we have overused it in the past; the only way out, when one has a natural constraint, is by improving the efficiency with which natural resources are used. That is a matter of technology. The problem is that even on technology, we are not doing that well. I think this is the broad question facing Indian agriculture.

PGT: ***If you look at farmers…***
AS: There are a whole set of other issues that come along. Farmers are interested, first and foremost, in their own incomes from agriculture. Here, there come the issue of the functioning of markets; the prices they get, compared to the prices that consumers pay; the extent to which they can themselves access both technology and inputs that, to some extent, is a function of markets. It is, however, also is a function of government programmes. When it comes to the farmer, there are a whole set of extra issues. What needs to be highlighted though is the divide between what the better-connected farmer gets and what the poorly-connected farmer gets, both in terms of access to inputs as well as in prices.

PGT: ***One of major concerns is about the after effects of the Green Revolution but – even before discussing them – why is it that in most of parts of India there has been no significant enhancement of agricultural productivity? We are primarily looking at cereal production, wheat in particular.***
AS: When you talk about wheat in particular, it has a limitation and we need to relook at the entire genome and characteristic. Wheat is essentially a winter crop; it likes the cold climate and, in India, is actually suitable only for the northern Indian areas. You can, of course, grow wheat anywhere you like but it is very unlikely to be a crop that is sufficiently profitable compared to other crops for farmers to take it up. So wheat, by its very nature, is a cold-weather crop. The real concern is that in a context of temperatures going up – and given the whole discussion on climate change, it is likely to become even hotter – there is a problem with wheat. There are still areas where wheat can be grown; the entire northern U.P. where yield are low, large parts of northern Bihar and certain areas in Madhya Pradesh, where wheat is grown but again with low yields at present though the quality, often, is much better. Wheat is a very special crop and the important question is why productivity has not generally increased much more, as was expected.

PGT: ***It is even lower than in our neighbouring countries.***
AS: Yes; lower than what lot of people are getting. This a valid, genuine, definite question. What one needs to point out is that Indian productivity varies massively across the country for the same crop. There is good productivity for some crops in certain regions but, may be, in very small areas. Wheat productivity in Punjab is comparable to best in the world. Productivity of certain other crops too is comparable to the best in the world but the average yield is low; well below what is possible. There is sufficient evidence available by simply comparing what the best farmers in a region get in terms of yield, which is much higher than what

other farmers in the same region get. What the best farmers get is also less than what scientists get in the labs. So these yields gaps are large and the hope about production growth in the future largely comes because these gaps exits. Without these yield gaps, we would have to rely entirely on technology. This gap creates the potential to increase yields even if technology is not improving that much. Output could increase and come closer to the best farmer practice; to the best lab practice. That is why there is hope that India will still get such growth.

It would, however, be futile to say that just because a yield gap exists, it can be removed without much cost. Had it been that easy, the gap would not exist. Obviously, there are farmers who either have conditions that are not as good as the conditions the best farmers have; or the cost that the best farmer is incurring is too high for the other farmers to incur; or that there are access problems. The best farmer is getting much better seeds and the entire agriculture extension system sometimes only goes to the richest three or four rather than to everybody else. So while everybody is trying to do the same thing, not everyone has access to whatever is necessary. That is the reality.

Also, some of the yield comparison, with yields abroad for example, are a bit spurious because India has a larger number of crops than most other places. Besides, there are things like irrigation, which make a huge difference between farmers even within India and there are various types of usage of water and land resources, which vary greatly across farms.

PGT: ***Put simply, 60 per cent of the cropped area is still dependent on rain.***

AS: It is very unlikely that we will ever be able to give irrigation to 100 per cent of the land.

AJ: ***Do you think agricultural productivity is going to suffer because of fragmentation of land holdings and because small and marginal farmers are facing problems of economic sustainability? Will it increase with increased fragmentation?***

AS: This is an age-old question and is asked again and again. Clearly, there are economies of scale in agriculture, at least beyond a point, like in any other activity. However, the evidence – old, combined with some new evidence as well – suggests something like this: If the yield of any particular crop (wheat or rice) in say Punjab or U.P. is taken and farmers are ranked by their farm size, one may find that, if anything, the larger farmer has a slightly higher yield. It may be insignificant but there is some positive relationship. However, the moment you take the total farm area and the total farm output and divide the total farm output by the total farm area the net sown area of the farm, the tendency is for the small farmers to get a higher value of output per acre of land.

PGT: ***That is an inverse relationship between land holding and productivity.***

AS: That is an inverse relationship between land holding and the total output; between the yield of a particular crop and of total output, where the tendency is exactly the opposite; one is going up the other is coming down. The question is: how many times do you use the land? What is the cropping intensity? Also, which crops are you growing; what is the cropping pattern? Essentially, what tends to happen is that the smaller farm sacrifices something on the yield side, partly because he has to mix things and tries to make more intensive use of the land by growing as many crops that he can. He also tries to have a greater distribution of crops; add to it some livestock or whatever. When it comes to productivity and effects of fragmentation, at one level, this will have a negative effect but, at another, it is like a farmer becoming a gardener. A gardener will, usually, get much more out of the land simply because he is putting in much more effort into a small patch of land than any farmer would. The difference between these two is that the farmer expects to get a sizeable income from a given amount of land. A gardener is either being paid by somebody else to do this and has no other option. So he actually has to put in a lot of labour.

The best farmer gets much better seeds and the agriculture extension system, sometimes, only goes to the richest three or four rather than to everybody else

AJ: ***What you are saying is that productivity could increase with smaller holding also because of farmers working more hard on their land?***

PGT: ***Also because of greater cropping intensity and variety.***

AS: Yes but over time, if the farmer has greater options – he can go out and do something else – the advantage of the small farm is likely to disappear. The advantage exists because the farmer has to get some income from this small plot, he does not have a choice. Therefore, the economy-of-scale argument still applies but it can be misused. It can easily become an argument saying that these folks can do nothing so give everything to a big organisation; let them grow in an American style and we will get higher output. Nonetheless, it is true that Indian agriculture is now in a situation, given the average farm size, that one must look at ways to improve things wherever possible – and this need not be with actual farming activity – with all sorts of associated activities. There has to be some way in which group efforts must start.

PGT: ***Including co-operative efforts…***

AS: Yes or any other type of group effort. It could, in fact, be with certain things that farmers themselves do not do as is already happening. In India there is a huge increase in the amount of custom services: people are actually selling a service; the farmers themselves are not doing them individually but are buying it from one seller.

PGT: ***Including somebody who is providing the services of a tractor or somebody who is providing a combined harvester or whatever…***

AS: That is on the private side. On the co-operative side, there are the self-help groups. In Andhra Pradesh that has many self help groups – not the traditional co-operatives – the SHGs have become a part of a lot of combined activities like pest control measures and things of that kind. There is a potential for the actually producer companies to come up or old-fashioned co-operatives to come up to provide the economies-of-scale in the post-harvesting side. It is absolutely essential that the Indian government thinks in terms of how to aggregate small farmers so that collectively they can get the economies of scale.

AJ: ***One major problem is that agriculture machinery is very expensive and farmers with small holdings would find it unviable to buy machinery today. Do you think the government of India and the Planning Commission will come up with such initiatives where it would be cheaper to collectively finance machinery for collective units rather than for individuals? Right now, if you take a loan, the rate of interest is the same for a collective outfit and an individual. A differentiation between the two would help.***

PGT: ***Also, if you look at the Nabard's rules, they are not really conducive for such purchases…***

AJ: ***In my village the co-operative society is associated with IFFCO that hires out water tankers, rotovators, tractors, and ploughs and seeds. This is very good because the farmers do not need to buy them. Machines could never be optimally utilised because of the small land holding.***

AS: There is also the more fundamental issue about government policies. The government policy has largely been to have schemes that are run through the state agricultural department. The state agricultural departments send them to their extension wing, which is basically a set of people who go to the farms but see the same people again and again.

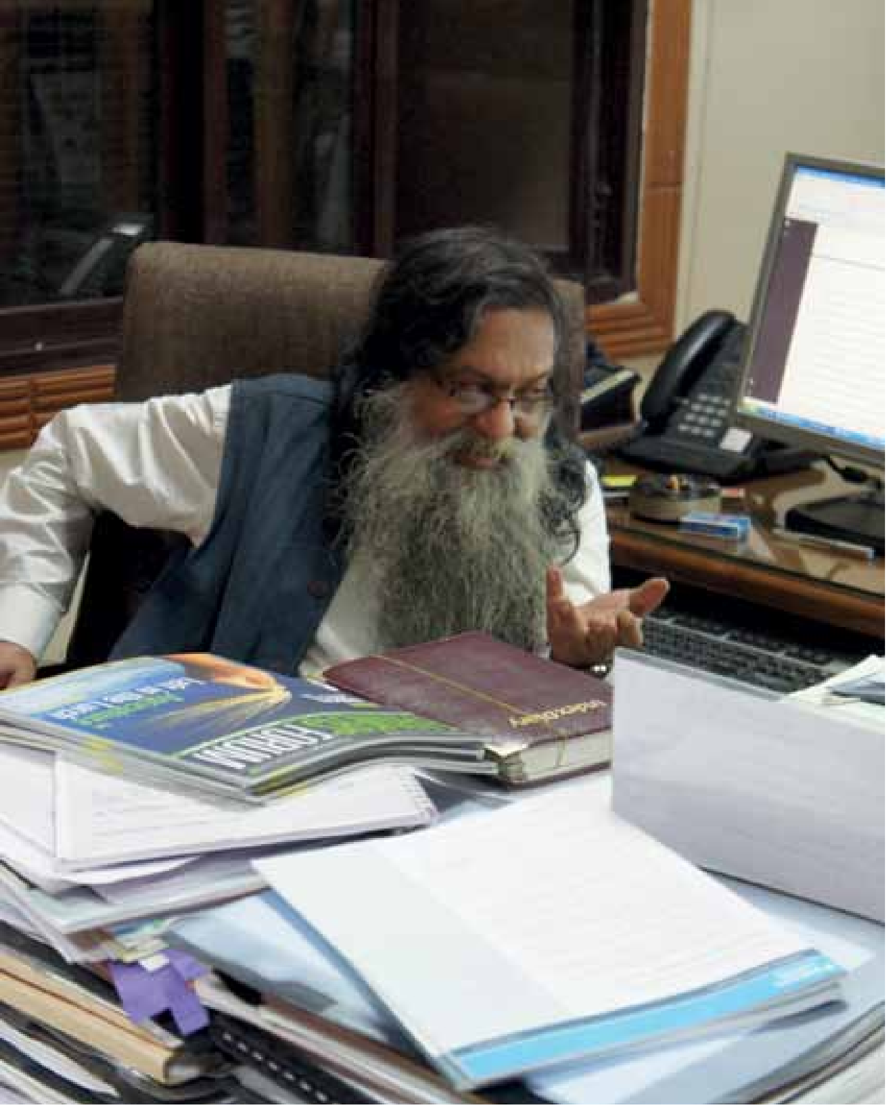
AJ: ***They do not even go nowadays.***

AS: Quite right. Those that do go meet the better off people and it is the same group that benefits. Today, there are special schemes for small farmers and one thinks that there will be something for the small farmer; some subsidy perhaps but eventually many such schemes end up by giving birth to a set of fake small farmers, who grab the benefits.

PGT: ***So there is a huge amount of corruption and it becomes a governance issue.***

AS: In the case of extension work, the reach is insufficient in terms of number of extension workers and their ability to move: the simple ability to go to the farm continuously or the willingness to do so has gone down massively. The larger issue is whether the government can really be thinking in the old fashioned way: that

Indian agriculture is now in a situation, given the average farm size, that one must look at ways to improve things wherever possible.



market for food is being increased and the nutrition that people receive is being improved. So subsidies are being given to consume rice and wheat – limited only to rice and wheat – but also huge subsidies are being given to produce rice and wheat. The fertiliser subsidy is also of a similar amount of about Rs 60,000 crore. So, on the one hand, the government spends huge amount for production (most of it goes to rice and wheat) and, on the other, once it is produced, the government procures it for the public distribution system but finds that it cannot sell it at those prices. Wherever it tries this APL (above poverty line) thing, it does not sell. So it has to cut the prices. Here is a fundamental problem for a whole set of these basic cereals.

It is even worse for millets (jowar and baajra), which the government cannot procure: when it does procure, it rots because there is no provision for storage. The point is, in many cases, the cost of production for the farmers is quite high. The MSP (minimum support price) tries to cover that cost and, at times, becomes too high. In other words, there is a major problem of growing enough food at a price that enough people will be able to afford. Subsidies are not a good way of addressing this problem. Subsidies add up to a huge amount and you are absolutely right: between these two subsidies – leave aside NREGA for the moment – they add up to more than Rs 1,20,000 crore, whereas, the total expenditure of the ministry of agriculture is about Rs15,000 crore.

something special has to be done for small farms and small farmers. Should it not say that it would do things differently: subsidising such activities that small farmers do collectively; encourage them. That is what is necessary; focus subsidies on small farmers, not just because they are small but actually to subsidise group activities.

AJ: ***The Budget for NREGA is around Rs 40,000 crore. The Right to Food will reportedly cost Rs 1,20,000 crore. The Budget for the Agriculture Ministry is Rs 15,000 crore. Do you think this expenditure is justified? Rather than invest around Rs 1,00,000 crore on the Right to Food, India could invest that in increasing agricultural productivity, helping 55 per cent of the population, which lives in the villages, to become self-sufficient. Don't you think that approach is better than the one India is taking now?***

AS: Let me make the point in a slightly different way. There are two subsidies: one is the food subsidy of about Rs 60,000 crore that will probably go up to Rs 75,000 crore, which is a very large chunk of money. What does this money do? Most of this money, presumably, is to make food cheaper for some people. The argument is that by making food cheaper, the

AJ: ***As a farmer organisation, we think these expenditures will never benefit the nation in the long run. We believe that fertiliser subsidies are not actually meant for the farmers but meant to keep the prices low for consumers. Farmers will be happy to take fertilisers without subsidies provided they get higher prices for their products.***

AS: Whatever it is, the point simply is that it comes back to that technology problem, which is, can we expect farmers to produce a sufficient quantity of food or at least this food at a price that the mass of people can afford.

***AJ:** There is another issue: in my village, there is no person advising me or any other farmer. There are 6,00,000 villages in the country. If the government appointed an M.Sc. or B.Sc. for each village and trained him, the total cost would not exceed Rs 10,000 crore to Rs 12,000 crore and it could actually roll out extension services over a period of four or five years across the country through one officer at the village development office in every village. The cost would not even be 10 per cent of what is being spent but the Planning Commission does not propose such a thing.*

AS: No, no, it is not that we do not propose such a thing. I think the Planning Commission, more than any other organisation, has posed the issue of subsidy against better use of the subsidy money. It is also the Planning Commission, which has been trying to put extension back on rails. There is a view that the Planning Commission does not reject that if you take an agriculture graduate, give him a sarkari naukri (government job) and place him in a village, he will be about as useful to the village as a primary school teacher, who is on a government salary. So it is more than just an issue of appointing these people; it is more than just a matter of spending money. It is spending that money usefully.

***PGT:** To change tack; over the last few decades excessive emphasis has been laid on the two major cereals, rice and wheat (in terms of strategies and programmes to enhance production) and not enough has been done for coarse cereals, which are far more hardy, less dependent on irrigation and far more nutritious. Not just all the millets but even the non-cereal foods.*

AS: That would have been a right statement to make about 10 or 15 years ago. Since then, a number of things have happened. First, one of the areas in which massive expenditure is being made – and I am sorry to say, even in this area it is not very clear that expenditure is being done properly – is horticulture. In fact, after the Rashtriya Vikas Yojana, the horticulture mission is the largest expending item in the Ministry of Agriculture. Second, there has been a considerable shift in bank financing, away from traditional agricultural things to all sorts of other areas. Third, there are real growth stories over the last 20 years in milk, in some horticulture products and in meat and fish. Not just marine fish but with freshwater fish. These are where the growth has come and this growth has come about because of solid inputs. The ICAR laboratories have done considerably more work on things other than just rice and wheat. In fact, some think that rice and wheat have been de-emphasised a bit too much.

***PGT:** Coming to food inflation, why has the government been unable to control or put an effective check particularly on the prices of high-protein products, not only food and vegetables but also dairy products, in the recent past? There has been consistently high food inflation in the last few years. How much of it do you attribute to change in people's eating habits? To people becoming relatively prosperous, eating less rice and wheat and eating other fruits and vegetables etcetera…the so-called demand side factor?*

AS: I belong to a generation and of a mentality who would admit a problem and say that I cannot give an answer till I have the valid ability to do so. I will tell you what the problem really is. The problem is that our statistics on horticulture or livestock are very poor while our statistical ability to talk about rice and wheat and the major crops is much better. On livestock and on horticulture our statistics are, at best, late and, at worst, at any point in time, hopeless. We do not know what we have grown in the last three months or four months. Therefore, for the purpose of inflation control, one does not know the supply side. On the demand side too, the data comes with some lag and what the demand data shows simply does not match up with the supply data.

The demand data from the National Sample Survey – that has lags – shows slow movement rather than any sharp increases. In the last three years, essentially since the beginning of about 2009 to most of 2011, there has been a massive increase in prices, led really by foods, vegetables, poultry, fish, dairy products and such others. In this group of products, vegetables is a story of fluctuation and spikes rather than any sharp increase. The sharp increase is really in milk, meat, egg and fish. How much of this is due to a sudden spike in demand, which we do not have the data for? The latest data from NSS is for year 2009. How much of the rise in prices is because supply might have gone down? The supply side statistics is wrong but one knows that prices have gone up. On that basis the story can be told one way or the other. I certainly would not take upon myself the responsibility to say that any such story is going to be the real story. I would have to say, I do not know.

PGT: ***Do you think that food inflation is going to come down as the government has suggested time and again? The deputy chairman of the Planning Commission recently acknowledged that because the government has gone wrong over and over again, it has actually affected its credibility.***

AS: It has…

PGT: ***The government kept saying that wholesale price index would come down to whatever: three per cent, four per cent; six per cent or eight per cent. It refused to do that. Where do you see food inflation going?***

AS: There are patterns in this that are important: on the inflation front, things have been very bad for the last three years at least. It is not just in the last three years; from about 2004-05 or 2005-06, inflation rate for food has been going up. For 10 years before that, food prices were actually low and were, in fact, in relative terms, coming down. What is interesting is that food prices were stable or coming down in real terms in a period where output growth was low. They have been going up in the period where output growth is high! This is the first big mystery.

Yet it can be explained by the fact that exactly the same pattern is observed in the movement of food prices in the world as a whole. The movement of prices in India and the world was relatively similar but this opens up another question. Indian agriculture is hardly open to trade; it is relatively insulated compared to other sectors. So, how is it that what is happening in our prices seems to be parallel to what is happening in world prices? That big question is: Are people in a position to influence prices able to see that in a situation where world prices are high, the government would be unable to do anything about prices by importing the items? So that window, which is open to government, with which it can actually put down prices immediately, is being closed off?

On the inflation front, things have been very bad for the last three years at least. From about 2004-05 or 2005-06, inflation rate for food has been going up

PGT: ***The classic case of pulses (daal); there is just not enough of it available in the market.***

AS: Daal is a classic story. India's output had not increased for the last 30 years but daal prices should have been rising faster than other prices over most of that period. In fact, daal prices, relative to other prices, were falling for some of this period, including the period from mid-90s to the mid-2000s. The point is that there is, on the one hand, the paradox about output and prices moving in unexpected ways. On the other, there is this paradox that world prices seem to be affecting us, although we are relatively insulated. These realities have to be accepted. They also show some of the problems that the government is facing and why the government is not being able to do anything about it. In this context, a number of things are being said: that 'marketing is poor; or, if you open up more; if you have more storage space; or more markets open up somehow prices will go down. Theoretically yes but the fact is that it is not as if

India's infrastructure was any better when inflation was low. The infrastructure is much better today especially because of the Pradhan Mantri Gram Sadak Yojana that has actually transformed parts of rural India massively. Roads are, more than anything else, the infrastructure for marketing.

PGT: ***Why is there an apparent lack of co-ordination among different departments of the government: the agriculture ministry, food and civil supplies department, consumer affairs department, commerce ministry, finance ministry in their inability to devise early warning systems to prevent the spikes?***

AS: This is a general problem of the government and it gets particularly worse in the case of food management. Two things have happened. First, there was a time when food management was simple; all that was needed was to look at cereal prices. If that one price was controlled everything else seemed to be controlled. The world has become a far more complex. People are now looking at a much more diversified basket and the more diversified the basket is, the more difficult it is to manage.

The second is about what one can control: which is cereals. This activity was messed up. The Food Corporation of India's job was simply to buy where it was relatively cheap; where there were relative surpluses; and sell where it was relatively more expensive; where there were deficits. So one loved wheat and rice from Punjab, took it to the South and that is the way FCI worked; as an instrument of market stabilisation. Things have got a totally different shape today. The FCI tries to carry food to where the poor are: so it takes food and dumps it in Bihar, where there is a potential for growth and ends up reducing the incentive for the Bihar peasant to produce more. It is not actually supplying it to where the deficit really is, say Kerala, which is a relatively rich state with few poor people but which does not grow any wheat. As a result, it ends up not even using the mechanisms for stabilisation.

AJ: ***What you are saying has been said before about American aid. That food aid actually could be counterproductive for increasing agricultural productivity because it kept prices low and served as a disincentive for farmers for growing more.***

AS: It could be. The basic thing is very simple; a minimum support price and then a ration price, which is low, with the government buying at a higher price and selling at lower prices, giving a huge subsidy. Whatever its arguments, this system could, in one shot (suppose there was no cash problem) deliver something both to the farmers as well as to the poor, provided two things worked: First, the MSPs worked and the farmers got the MSP. Second, the ration shop worked. That is, the poor got the cheap food. If both of them worked together that would be fine. The problem is that the PDS is probably working in some states like Andhra Pradesh, Kerala and Tamil Nadu. The MSP is probably working in Punjab and Haryana. In Bihar neither is working.

PGT: ***You talked of the government having limited scope to, say, import; to act and influence prices but we seem to be systematically goofing up in the manner in which we are exporting and importing. Take two examples: In 2009, we were exporting sugar at Rs 12.50 per kilogram up till about March-April. About eight or nine months later we contracted for imports and whenever India contracts for imports, world prices shoot up. Onions are a classic case. What happened in 2010? There was a 10 per cent drop in output and one saw a huge spike with prices going up 300 per cent or 400 per cent. Why is India unable to use import and export in a rational manner?***

AS: That is a good question and is generally related to India's failure to: get its act together across ministries and it is exacerbated by the fact that there is a very poor knowledge. Around November 2010, prices were falling. It looked as if one knew prices would really come down and then, suddenly, in the first week of December or the last week of November there was this huge rise in prices, limited first to onions and then, across the board. One did not know what hit the prices and one did not have any information that this onion price hike was coming. Till that point everybody was talking of a good crop *(nahi-nahi iss saal ka to badhiya crop)*: so that is the data problem.

PGT: ***This is a huge problem and what you are saying is what we have is a highly inadequate system of market intelligence.***

Decision-making has certainly gone down to some extent from Delhi to the state capitals but not gone below that level

AS: The system of basic statistics on some of these crops is poor; the system of having advance knowledge of what is likely to happen. In the whole business of forecasting crops, forecast is almost zero. I would also admit that even with the best information the co-ordination between departments would be pretty poor. It is bound to be so where information is weak because, in a situation of ignorance, some people will push for things. Obviously, the onion seller will want onion exports to be open and the buyer will want a restriction on this and there will always be a pressure. Which way will the wind blow? It will differ from ministry to ministry: agriculture will listen to farmers slightly more than the food ministry. It also depends on which ministry gets its views across; which is actually the way politics works.

AJ: *There is another thing of interest. The Constitution of India provides for district planning committees (DPCs) but not for a Planning Commission. Yet the Planning Commission works but the DPCs do not. It has been suggested that the DPCs be formed and made to work and advise – from the bottom up – the Planning Commission and the state governments. One wonders who is responsible for setting them up: the state governments or the central government? The point is that the DPCs need to be working so they can actually send information (to farmers).*

AS: Again, on this there has been a fair amount of movement in the last four to five years. It is far from perfect but the fact is that even in 2005-2006 many states had no DPCs. You must give Mani Shankar Aiyar his due: he was the first minister of panchayats to ensure that certain constitutional provisions were actually on the ground. Now, almost every state has DPCs; almost every state has had its panchayat elections; and that there are frameworks by which the DPC is constituted. Unfortunately, the DPCs are not quite the planning mechanism that they were supposed to be but are really *thappa maro* (rubber stamp) mechanisms. They are, however, there. Adequately strengthened on the capacity side, they have the ability to advice on technical matters. The DPCs can become what they were expected to be but are not at the moment. Again, some states are much better than others where things are very bad. In the case of agriculture, in the 11th Plan, partly as a result of an NDC decision there was the Rashtriya Krishi Vikas Yojana, which had only two requirements of states. States would not get money under RKVY if they did not implement these two. One was that they could not cut their agriculture expenditure as a share of total expenditure from what it was. The second was that every district would have to have a district plan.

As a result, unlike in the 9th and 10th plans, states have not cut back on agriculture spending. Agriculture spending, even by the states, has been going up, which is one intention. The second intention, which is the district plans, is yet to be implemented. Every state produced for every district – as was the condition – a pharra (a piece of paper) that was the district plan. Some were good, some very bad but what is worse is that decisions being taken at the state level (and despite the local sanctioning committees) reflect the views of people in the capital more than views of the people in the districts.

PGT: *Top down rather than bottom up…*

AS: Yes, decision making was supposed to go down and it has certainly gone down to some extent from Delhi to the state capitals but not gone below that level. That is what one should really try and ensure. It needs to be remembered that the greatest opponents to panchayats and to DPCs and all of this is the local MLA and the local MP.

AJ: *There is a major problem facing farmers: the concept of ATMA (Agriculture Technology Management Agency), which is actually run by the district collectors). The DC is not even accessible to the opposition MLAs in states. So there is no way farmers can access schemes through the DCs because the central government is funding the ATMA scheme through the DCs. The last thing on the collector's mind is agricultural productivity. He has so many functions that he cannot even fulfill his other executive functions. This is an issue that, as a farmer organisation, we would like to put to you.*

AS: The ATMA (scheme) is a reaction to a collapsed extension system. The idea was to actually get as many different players on to the extension activity as was possible. It could be the KVK, it could be some progressive farmers; some good NGOs. Unfortunately, despite that what obtained was a talking shop where decisions were only taken when the district magistrate was around or there was some strong enough CEO or district agriculture officers, who could take decisions. In the second round of the ATMAs, it has been decided to have a block component. So there will now be a subject matter specialist at the block level. The point is, all this is scratching on the surface of a problem, which can only be solved by the states. I mean, the central government cannot actually get extension going in the states.

In the 9th and 10th plans, states have not cut back on agriculture spending. Agriculture spending, even by the states, has been going up, which is one intention

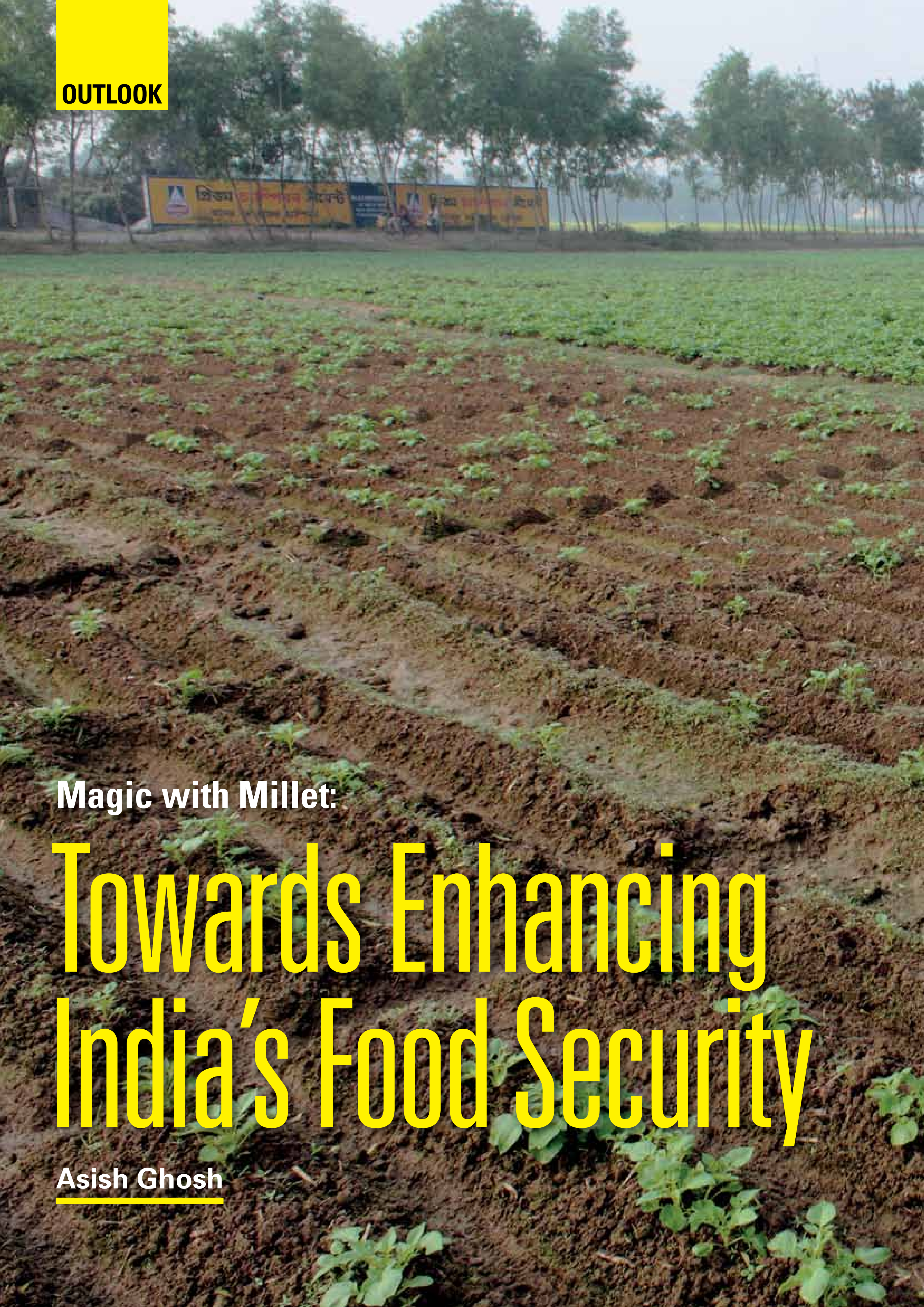
AJ: *We have a saying ATMA ka tow paramatma murr gaya (ATMA's God is dead)…*

PGT: *One last question: what could the Budget contain that will be beneficial for Indian agriculture as a whole and for farmers as well?*

AS: Let us face it, almost every Budget in the recent past has started off with about 10 paragraphs on agriculture. It says Rs 100 crore here; Rs 50 crore there and there is a lot of that money that is not in the Budget. The Nabard is expected to do something; the banks are supposed to do something; but the Budget gives a lot of verbiage to agriculture. At the end of the day after so much talk, the amount going to agriculture is relatively small. This is a general pattern and I do not have any reason to doubt that this year's Budget will basically conform to this. Where this year's Budget is different, however, is that it is the first Budget of the 12th Plan. So, hopefully, one will see something in this Budget that reflects some 12th Plan concerns.

PGT: *It is also a Budget at a time that the rate of growth of the economy has slowed down; where food inflation is not under control; where the international economic situation has perceptibly worsened.*

AS: Absolutely! It is a Budget that is under pressure to be a fiscal consolidation Budget. However much the Finance Minister talks about growth concerns having to be met, given the conditions, expenditures will not go up too much. It will have to be essentially in terms of whether or not, within a limited increase in expenditure, one can have something that works better. ●



OUTLOOK

Magic with Millet:

Towards Enhancing India's Food Security

Asish Ghosh

Photo: S. Mahalanobis

The National Food Security Act (NFSA) and the Mahatma Gandhi National Rural Employment Guarantee Act (MNREGA) have provided a major shift in alleviating poverty strategy. Nevertheless, the poverty status of the country is alarming. Even with the growth rate at 8.5 per cent, poverty and consequent malnutrition makes for 37 per cent (some data states 41.0 per cent) of Indians living below the poverty level. A staggering 43.5 per cent of Indian children under five remain malnourished.

Higher agricultural growth with sufficient food production can undoubtedly be useful in combating poverty and malnutrition. To implement the NFSA, the country needs is to expand its allegedly leaky public distribution system (PDS). There have been pre-Budget suggestions for Conditional Cash Transfer (CCF) and food coupon system but there is little media focus on the neglected but highly potential bio-resource of coarse grains or millets in India.

India has a rich resource base both in terms of farmers' varieties and laboratory produced cultivators of millets in India. While, admittedly it may not be much of a panacea in the Indo-Gangetic plains, millions of poor Indians in the hostile arid and semi-arid zones of India would stand to benefit. The Constitution invests every Indian with the Right to Life, irrespective of cast, creed, religion and geographical locations. Proper management of coarse grains resource can ensure that such right along with other supplementing measure is actually being ensured. This is easier said than done because India with a population of 1.21 billion in 2.4 per cent of global space is besieged with problems related to management of natural resources with which the country is richly endowed.

With eight per cent of the global biodiversity, India has a rich genetic resource base that, if appropriately managed and used, could be a great asset. The agro-biodiversity in India offers enormous opportunity to adopt a strategy for ensuring food security for one of the fastest growing human population.

Table 1: Millet Producing Countries

Top ten millet producers — 2007

Country	Production (Tonnes)	Footnote
India	10,610,000	*
Nigeria	7,700,000	*
Niger	2,781,928	
China	2,101,000	F
Burkina Faso	1,104,010	
Mali	1,074,440	F
Sudan	792,000	*
Uganda	732,000	
Chad	550,000	*
Ethiopia	500,000	F
World	31,875,597	A

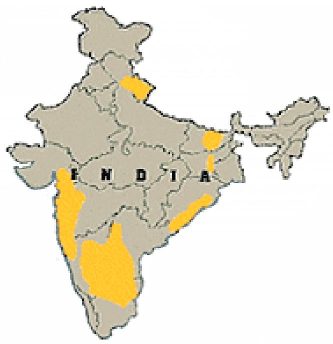
No symbol = official figure, P = official figure, F = FAO estimate, * = Unofficial/Semi-official/mirror data, C = Calculated figure A = Aggregate (may include official, semi-official or estimates)

Source: Food And Agricultural Organisation of United Nations: Economic And Social Department: The Statistical Division

Regrettably, an analysis of post-Independence agricultural policy, including the PDS, proves that the momentous strategy adopted during the era of Green Revolution and beyond had failed to respect India's agro-bio-resources: one such area of utter neglect is millets.

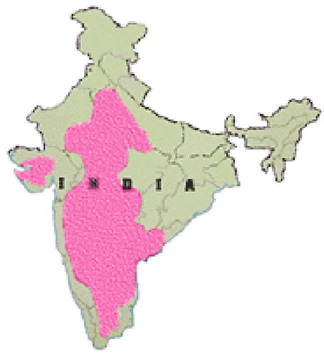
Millets are grown in arid, semi-arid or rather marginal conditions of soil fertility and moisture.

Table 2: Geographical spread of Sorghum, Pearl millet and Finger Millet in India.



Finger millet:
Also known as Ragi or Mandwa is the most important small millet food crops of Southern Karnataka, Maharashtra, Uttaranchal, Tamil Nadu, Andhra Pradesh and Orissa, It is grown successfully in areas where rainfall is about 350 mm and temperatures more than 30° Celsius.

Pearl millet:
Also known as Bajra is a Kharif crop and is mainly grown in Rajasthan, Gujarat, Uttar Pradesh, Haryana, Andhra Pradesh, Tamil Nadu, Punjab and Maharashtra. The crop can do well in the areas with less than 350 mm annual rainfall and temperatures between 25° Celsius to 35° Celsius.



Sorghum:
Also known as Jowar is perceived to be an important coarse-grained food crop, cultivated widely across Maharashtra, Madhya Pradesh, Uttar Pradesh, Haryana, Andhra Pradesh, Tamil Nadu, Karnataka and in parts of Rajasthan. The crop is hardy and cultivated in areas with rainfall beyond 350 mm.

Source: http://milletindia.org/statusofmillets.asp

Photo: S. Mahalanobis

Table 3: List of Millet species

Common English Names	Common Hindi Names	Scientific Names
Finger Millet	Ragi	Eleusine coracana
Barnyard Millet	Jhangon	Echinochloa colona
Foxtail Millet	Kangni	Setaria italica
Kodo Millet	Kodra	Paspalum scrobiculatum
Proso Millet	Barre	Panicum miliaceum
Jobs Tears	Gurgur	Coix lacryma
Sorghum	Jowar	Sorghum bicolor
Pearl Millet	Bajra	Pennisetum typhoides

Source: Ghosal & Krishna, 1995

Nevertheless, they are considered as rain-fed crops and could be of great help to large localised population as staples or even reserve crops in marginal areas. They are a proven source of energy and protein for millions of human population, additionally providing fodder for cattle population. Unfortunately, a steady decline in millet growing areas in the post Green Revolution period, without any intervention of the authorities, has led to it almost disappearing from the food list.

Millets have a short growing season, a low moisture demand and can play a significant role in a mixed cropped system. Characteristic ecosystems and climatic condition conducive for growth of three major groups is given below (Table 1). Adapting to both irrigated and dry land farming, millets can be a rich source of food and fodder in the years of scarcity and serve as "suitable candidate for famine reserve food." It is stated that adaptation of simple agronomic practices with timely sowing, right varieties, manuring and weeding and mixed cropping could even more raise the yield by 200 per cent or even 300 per cent (Ghosal & Krishna, 1995). Because of localised production, largely in backward areas, millets did never play the role of major community in the market. The geography and history of Millet

Table 4: Area under crop (2007-08 to 2009-2010)

Crop	Area in lakh hectare		
	2007-08	2008-09	2009-10
Millets	197.61	185.7	186.43
Rice	439.14	455.37	418.70
Wheat	280.38	277.52	283.42

Source: http://indiacurrentaffairs.org/area-under-millets/

has been dealt by Krishnaswamy (1938) focusing the role of Africa and India as its homeland. Incidentally, India still acts as the major producer of millets in today's world.

Types of millets and their varietal diversity

Millet crops belong to eight major genera of plants in India, namely, Eleusine, Coix, Sorghum, Pennisetum, Setaria, Panicum, Paspalum and Echinochola but are more easily recognisable by their popular names.

The diversity of varieties provides an assemblage of genetic characters and opportunities to be used in the desired condition of stress. Seven varieties of Finger millets are known in Karnataka alone, which are drought and pest resistant. Another five varieties are known from Garhwal Himalaya, which provide higher productivity with variable duration for cultivation days ranging from 130-150. Likewise, Sorghum is known to have five varieties in Andhra Pradesh, in the same state at best four varieties of Finger millet are also known to exist. Varietal diversity is also recorded for Foxtail millet in Garhwal Himalaya, each with 150 days duration.

Unfortunately, deprived of positive policy support and emphasis on rice and wheat, there has been a decline in the number of extant varieties as well as areas under millet cultivation. Farmers in Andhra Pradesh, a Deccan Development Society Survey reveals, believe that hybrid seed of rice and wheat has led to fast decline in the traditional millet cultivation. Changed food habit of the young generation and dearth of organic manure like cow dung are believed to be the other contributing factor. It is interesting to note that

Table 5: Proximate composition of small millets, wheat and rice (per 100g)

Name	Protein	Fat	Minerals	Fibre	Carbohydrates	Calcium	Phosphorus	Thiamine	Edible Matter
Finger Millet	7.3	1.3	2.7	3.6	72.0	344	283	420	100
Proso Millet	12.5	3.1	1.9	7.2	70.4	14	206	400	59
Foxtail Millet	12.3	4.3	3.3	8.0	60.9	31	290	590	79
Little Millet	7.7	4.7	1.5	7.6	67.0	17	220	300	66
Kodo Millet	8.3	1.4	2.6	9.0	65.9	27	188	330	58
Barnyard Millet	6.2	2.2	4.4	9.8	65.5	11	280	300	65
Job's Tears (Milled)	17.5	6.0	1.8	0.5	63.4	23	480	310	100
Rice (Milled)	6.8	0.5	0.6	0.2	78.2	45	160	-	100
Wheat	11.8	1.5	1.5	1.2	71.2	41	306	-	100

Source: Ghosal & Krishna, 1995

Photo: S. Mahalanobis

in the National Conference on Agro biodiversity (February, 2006) held in Chennai under the aegis of National Biodiversity Authority not a single paper focused on millet.

Semi arid and arid zone

The arid and semi arid zones of India are recorded as 0.31 million sq. km spread over Rajasthan (61 per cent), Haryana and part of Punjab (nine per cent), Gujarat (19.6 per cent) and Andhra Pradesh and Karnataka (10.4 per cent). Extremes of temperature, severe and frequent drought, low relative humidity and high wind velocity characterise the arid and semi arid zone. The region has undergone changes in the area where canal irrigation has been introduced but, otherwise, remains under ecological stress. The area under millet in comparison to rice and wheat can be seen in Table 4.

It is believed that millets can offer the most assured food security in the zone. Table 5 provides a comparative analysis of nutrient content available in rice, wheat and millets.

Conservation and management

The apathy of the Ministry of Agriculture has been well evidenced but the increasing awareness in the Civil Society Organisations has led to some welcome change. Of these, the setting up of millet in India Network, spread over 17 states in perhaps the most welcome. In February 2010, MINI focused on the urgent need to create space for India's millet-based agriculture in the 12th Financial Plan (2010-11), as a part of celebrating the Year of Biodiversity, when strong support was rendered by 153 members of CBOs, 53 Scientists, 26 Physicians and Nutrition Experts, 22 Members of the Parliament, 16 Presidents of Panchayats[1]. It may be noted that even without proven support, India contributes 33 per cent of total millet production, others being China and eight countries from Africa. Out of 31,875,547 tonnes production, India's contribution stands at 10,610,109 tonnes but there is scope to produce much more.

It is interesting to note that 17 kharif hybrids and 15 rabi hybrids of Sorghum have been released of which seven were released at the national level. Again, at least 24 hybrids and varieties of Pearl millets are found suitable for India. Similar efforts can be seen in the development of 28 varieties of 'Ragi', 12 varieties of Foxtail millets, nine varieties of Kodo millets, five varieties of Proso millets, nine varieties of Little millets and six varieties of Barnyard millets have been released, each with different attribute between 1986-2003 (Elangovan et. al., 2009). The question is: How much of such an impressive array of potential wealth has really been used to ensure food security and poverty alleviation. This is in spite of the money being spent on All India Coordinated Research Projects on Pearl Millets and Small Millets.

How much of India's impressive array of millets has been used to ensure food security and poverty alleviation. This is in spite of the money being spent on coordinated research projects

Noting steady decline in coarse cereal production, a centrally-sponsored scheme, called "Integrated Cereal Development Programme in Coarse Cereal based Cropping Systems Areas (ICDP-Coarse Cereal) has now been launched. It is expected to include frontline demonstration, assistance to farmers for improved package of practices, supply of quality seeds and resource conservation technologies. Currently, 25 millet manufactures and suppliers are known to be operative.

MINI is urging the government to promote millet cultivation and provide an incentive of Rs 5,000 per acre for cultivating millets. Since millets are grown in an area of maximum 20 million acres in India, the incentive percentage will not exceed Rs 1,000 crore; compare this with fertiliser subsidy of Rs 1, 40,000 crore provided by government in 2010[2].

It is of interest that India, the host country for International Centre for Agriculture Research in the Semi-arid Tropics, has an institute under Consultative Group on International Agricultural Research (CGAIR), ICRISAT. ICRISAT has global mandate on Pearl millet and is working for decades on the development disease resistant, yield increasing cultivars; it has significantly contributed towards combating 'Downy Mildew' disease, parasitic witch weeds and insect pests. A molecular map of Pearl millet has also been prepared.

With all its past history of the role it has played for centuries in offering staple food to millions of people in ecologically hostile areas, millet must be accorded the highest priority in terms of denominating it as the major cereal crop along with rice and wheat. Making millets available through proper marketing and making it a part of the PDS should also be on top of the agenda. Popularising millet-based food has been something that CSOs had engaged in but it is only serious policy support by the government that can make it a value-added product for India's food security. Budget 2012-13 should be a good time to make a beginning. ●

1 (www.milletindia.org/letters/Letter_FinanceMinister_Feb16_2010.pdf)

2 Times News Network, June 24, 2011

Dr Asish Ghosh, former Director, Zoological Survey of India is currently Director for the Centre for Environment and Development, Kolkata. He is a widely published author on natural resources management and on all dimensions of environment and development. He was invited to Chair UNEP-CBD meet in Paris in 2009. He has served as a member of the National Biodiversity Authority, Government of India and as a Member of the Working Group for the 111th Five Year Plan on Environment, Biodiversity, Planning Commission

References:

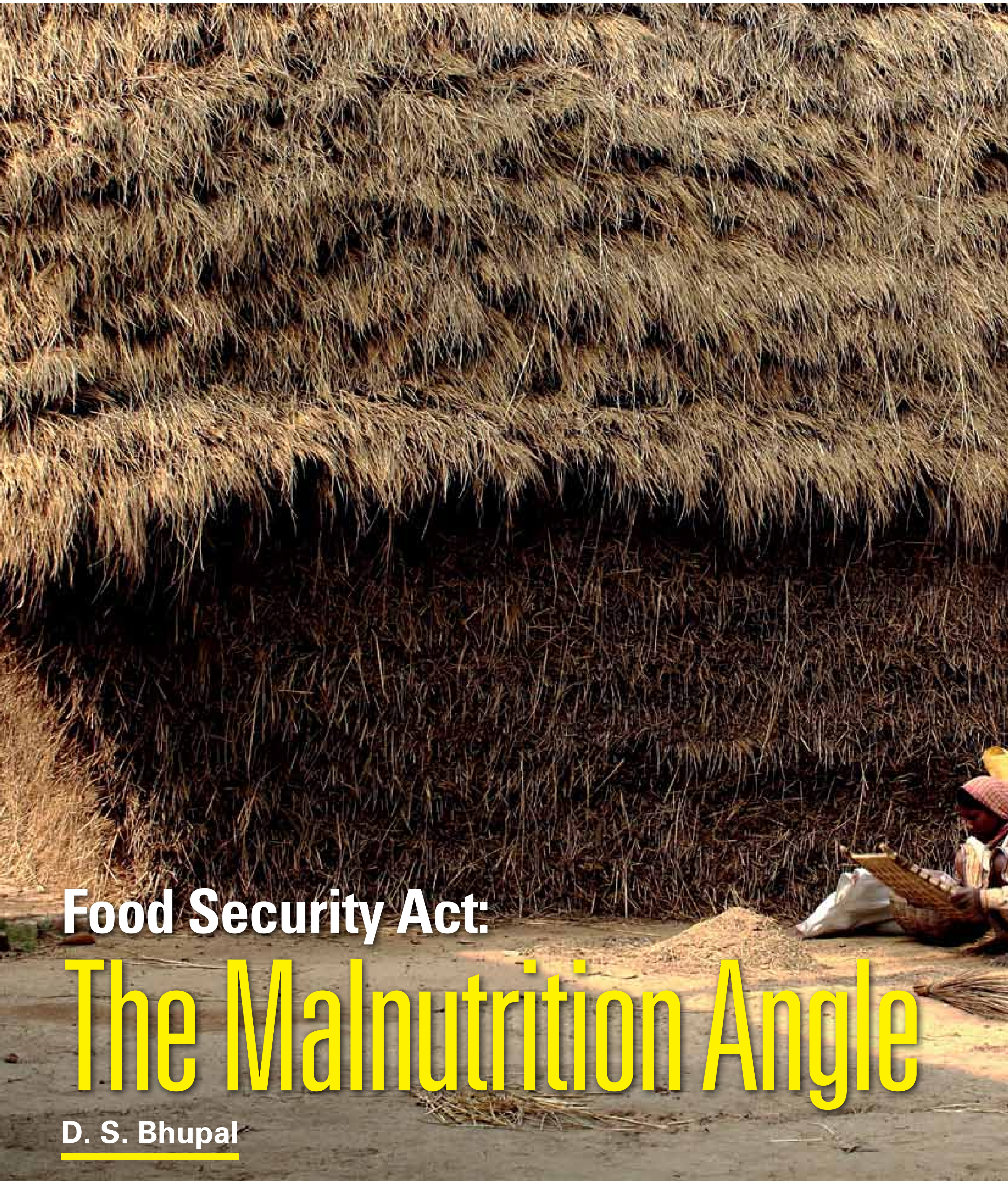
Elangovar, M. et.al. 2009 Sorghum and Millet Genetic Resource Management. p 21-55 In Agrobiodiversity Hotspots:Access and Benefit sharing (ed. S.Kannaiyan). Narosa Publishing House, New Delhi, Chennai, Mumbai, Kolkata.

Ghosal, Anjali and Onkar Krishna. 1995. Millets of India. Navadanya. New Delhi.

Gulati, Ashok and Ganguly, Kaveri 2010 .Right to Food: Getting it Right. Economic Times, New Delhi; December 4, 2010

Krishnaswamy, N. 1937. Geography and History of Millets. Curr. Sci., 7-355

PERSPECTIVE



Food Security Act: The Malnutrition Angle

D. S. Bhupal

Photo: S. Mahalanobis

After a long history of widespread malnutrition and starvation for many, the people of the India will have, for the first time, the Constitutional right to food. Yet, not all will have that right. As of now, 75 per cent of rural and 50 per cent of urban population will have the right to a limited quantity of food at concessional rates. As has been proposed, 46 per cent rural and 28 per cent urban poor will have the right to demand 7 kg per person per month or 35 kg per family per month (which ever is less) of foodgrains at the rate of Rs 3, Rs 2 and Re 1 per kg rice, wheat and coarse cereals, respectively. The rest of the targeted rural and urban poor will get a monthly 3 kg of foodgrains at half of its minimum support price.

The bill is being opposed on the following grounds:

- Systemic corruption will lead to waste of money;
- There will be huge expenditure, accelerating the fiscal deficit
- The increased demand for foodgrains will increase prices
- The farm sector will be deprived of investment, and many others.

What do these arguments amount to? There is no denying that the system has been corrupted beyond tolerable limits and universalisation of the scheme would be a rational alternative. However, scrapping it would mean throwing out the baby with the bath water. In any event, the argument of huge expenditure amounts to poor mathematics:

Two figures are cited by those opposing the Food Security Bill: between 62 million and 63 million tonnes of foodgrains and about Rs 95,000 crore (at current prices) will be needed annually to fund and run this programme. Table 1 shows how grossly exaggerated these figures are. The actual foodgrains as proposed would be around 53 million tonnes.

For 2011, the government fixed the MSP for paddy at Rs 1,080 a quintal, for wheat at Rs 1,285 per quintal and for coarse grains Rs 980 per quintal. The average conversion ratio of paddy to rice is 67 per cent (varies between 60 per cent and 72 per cent). This means that the MSP in rice terms would be about Rs 1,612 per quintal. Assuming that the government will bear the entire cost of purchase of foodgrains, which it procures at the MSP and the other costs like transportation, storage, packing and such will be recovered through sale price and the foodgrains (rice, wheat and millets) are supplied in equal proportion, the maximum expenditure

Table 1: Population (2011 census) and required subsidised foodgrains

	Rural		Urban	Total population	Food grains tonnes Per month	Food grains Million tonnes Per annum
	833087662		377105760	1210193422		
46 per cent	383220325	28 %	105589613	488809937		
Food @ 7kg*	2682542272		739127290	3421669561	3421670	41.1
Population 75 per cent	624815747	50 %	188552880	813368627		
75 per cent-46 per cent	241595422	50-28%	82963267	324558689		
Food @ 3kg+	724786266		248889802	973676068	973676	11.7

**per person per month @ Rs 3,2&1 per kg; + per person @ half of MSP*

incurred by the government would be Rs 12.92 per kg. The chances are that more coarse grains would be supplied and less of rice. Therefore, net of government legal and extra legal expenses, a sum of less than Rs 62,000 crore (Table 2) will actually be needed to fund the proposed programme, which is less than two thirds of the humungous figure of Rs 95,000 crore that has been quoted.

If the remaining targeted population is provided with 7 kg of food – another 4 kg per person per month – the total foodgrains requirement of this segment would increase to 27.3 million tonnes and the cost, at half of the MSP, to Rs 17.6 thousand crore. In other words, around Rs 70,000 crore would be needed to provide 7 kg food per person per month to 75 per cent of the rural and 50 per cent of the urban population, which is still less than Rs 95,000 crore.

Assuming that the entire 75 per cent rural and 50 per cent urban population is provided with 7 kg food per month (amounting to 68.4 million tonnes) at Rs 3, Rs 2 and Re 1, as in the case of priority population, the total funds required would increase to Rs 88,370 crore. Even this is less than quoted Rs 95,000 crore.

Consider the worst case scenario: the costliest food distribution through the FCI at its economic costs, which includes procurement costs, procurement incidentals like market fee, commission to adtiyas, loading/unloading, transport, storage and such others along with distribution costs. For 2011-12, the costs have been estimated at Rs 1,580.58 per quintal for wheat and Rs 2,068.95 per quintal for rice. The economic cost of coarse cereals is not available and purchase price of coarse cereals is far less than wheat and rice. The economic cost of coarse cereals would

Photo: S. Mahalanobis

To consider an example: India has a scientifically devised electoral system that could be foolproof. Officials of the Election Commission list the gulli (lane), mohulla, house, gender, age and name of the voters. Dwarka, on the suburbs of Delhi comprises cooperative societies only; it has sectors with proper numbering, names and flats, with least ambiguity. The society that I live in comprises 150 flats but the electoral list showed 268 flats with strange numbers that did not tally with any other society nearby and listed more than 1,000 voters. Only 100 flats in the society were occupied with 500 or so residents and I was the society's president. By the time I got to know about the electoral list on the polling day, I found that more than 900 votes had already been polled. I got everything corrected after making several complaints. The question is: should that mean that we give up the electoral system because it is corrupt?


Photo: Aline Dasse

invariably be less than that of rice and wheat. Secondly, how much of each type of foodgrains, rice, wheat and coarse cereals will be included in the prescribed 7 kg of foodgrains has not yet been decided. To average out, for the purpose of calculation, consider economic costs of wheat as the basis (Table 3). Even in such a case, the funds required would be a little more than Rs 74,000 crore, or 22 per cent less than the figures supposedly being presented to the world.

The nutrition aspect

The WHO estimated in 2000-03, that 54 per cent of under-five global deaths will be because of malnutrition. Economic logic suggests that the reduction in disease will benefit the poor more: enabling them to increase earnings and spend more on things other than taking care of disease. Economic logic also says that use of labour cannot be postponed (as other factors of production can). First, today's labour has to be used today. Second, the relative value of earnings in the poor families is always more. Third, the welfare state cannot ignore the largescale ailments in society and must address disease with funds that would have otherwise been spent on economically useful projects. While these arguments need to be explored in finer detail, there are a number of studies about the economic costs of diseases due to malnutrition, starting from direct effect on labour to deferred effect on the economy due to malnutrition of children.

The strongest support for the economic case for investing in nutrition comes from Hoddinott et al (2008). This showed that exposure to a randomised community-level nutrition intervention for ages 0-3 years increased the wages of males in adulthood by more than 40 per cent but had no effect on women's wages.

It is found that poor nutritional status at age 36 was linked to lower grade attainment and poorer cognitive skills in adulthood. Men earned lower wages and women were less likely to have independent sources of income from own business activities. Women who were stunted at age 36 had, on average, 1.9 more pregnancies and were more

Table 2: Amount required to fund the proposed programme

Rice msp kg	Wheat msp kg	Millets msp kg	avg.	food (mn. T)	Amount (000 cr.)
16.12	12.85	9.80	12.92	41.1	53.38
50 per cent of MSP			6.46	11.7	7.59
Total amount required					61.97

The author is Fellow at the Agro-Economic Research Centre, University of Delhi (ds_bhupal@hotmail.com)

Table 3: Amount required to fund the proposed programme

Rice economic cost	Wheat economic cost	Millets economic cost	Average	Food (million T)	Amount (000 crore)
2,068.95	1,580.58	?	1,580	41.1	64.92
50 per cent economic cost			7.90	11.7	9.23
Total amount required					74.15

Providing a monthly 7 kg per person of foodgrains to 75 per cent of the rural and 50 per cent of the urban population is economically viable. It needs to be seriously considered

likely to give birth before age 17. Better nourished preschoolers were taller as adults and had more fat free mass and greater hand strength. Being stunted at age 36 increased the likelihood of living in a poor household in adulthood by 31 percentage points.

Child malnutrition impacts on education attainment

The degree of cognitive impairments is directly related to the severity of stunting and Iron Deficiency Anaemia. Studies show that stunted children in the first two years of life have lower cognitive test scores, delayed enrolment, higher absenteeism and more class repetition compared with non-stunted children. Vitamin A deficiency reduces immunity and increases the incidence and gravity of infectious diseases resulting in increased school absenteeism (WHO, Geneva, 2010).

Data on primary school age children from

There is another study (Hoddinott et al 2010), based upon the project data providing nutrition four decades ago, between 1969 and 1977. Two nutritional supplements (a high protein-energy drink and a low-energy drink devoid of protein, randomly assigned at the village level) were provided to preschool children in four villages in eastern Guatemala. These individuals were traced and interviewed as adults who had been exposed to this intervention, collecting data on a wide range of life-course outcomes. These data satisfy the stringent statistical requirements. Using Instrumental Variables estimation, it has been demonstrated that individuals better nourished in the first three years of life have dramatically better lives. They complete more schooling, have more success in the marriage market and generally were in better health. As adults, they had better cognitive skills, earned higher wages and lived in households with higher consumption levels.

subsistence farm households in the Terai (southern plains) region of Nepal show the relationship between nutritional status and school participation (Peter R. Moock, Joanne Leslie, 2002). Only 15 per cent reported attending school; nutritional status, particularly as measured by the percentage of median height-for-age, was found to be a significant determinant of both enrollment in school and age-adjusted grade attainment.

Child malnutrition impacts on economic productivity

The mental impairment caused by iodine deficiency is permanent and directly linked to productivity loss. The loss from stunting is calculated as 1.38 per cent reduced productivity for every one per cent decrease in height while 1 per cent reduced productivity is estimated for every one per cent drop in iron status (Haddad and Bouis, 1990).

Maternal malnutrition

This increases the risk of poor pregnancy outcomes including obstructed labour, premature or low-birth-weight babies and postpartum haemorrhage. Severe anaemia during pregnancy is linked to increased mortality at labour.

Low-birth-weight

This is a significant contributor to infant mortality. Moreover, low birth-weight babies who survive are likely to suffer growth retardation and illness throughout their childhood, adolescence and into adulthood. Growth-retarded adult women are likely to carry on the vicious cycle of malnutrition by giving birth to low birth-weight babies.

Huge savings by providing supplements:

A little research work is available on economic costs of malnutrition and benefits of the amount spent on providing nutritional diet to children, adults and senior citizens in the developing world where malnutrition is very common and is observed at large scale.

There are no reliable studies about the indirect positive macro-economic effect of the amount saved on health care and spent to buy other goods and service resulting in increase in demand thereby impact on production and increase in national income in India. What one does have is the number of under six children: 15,87,89,287 as per census. Of them, 48 per cent (7,62,18,858) is estimated to be malnourished. A per person spend of €172.2 annually on these children would mean a spend of Rs 90.19 thousand crore (at Rs 68.713 per Euro,

at current rate of exchange), which is more than the amount required (Rs 88,370 crore as worked out above) to provide 7 kg foodgrains per person per month to 75 per cent of the rural and 50 per cent of the urban population at Rs 3, Rs 2 and Re 1 per kg. These calculations suggest that money spent to provide cheaper foodgrains to the poor undernourished masses will be far less than cost of malnutrition in medical terms alone.

Foodgrains supply to cover wider segments under the Act

As far as the feared short supply for the market (because of so called huge procurement by the government agencies for the public distribution system) is concerned, the arguments do not hold. There is a projected 241 million tonnes of foodgrains production this year. The procurement of 53 million tonnes as per the instant provisions of the Act will be less than 22 per cent of total production. Even if 75 per cent of the rural population and 50 per cent of the urban population is provided with a monthly 7 kg per person, the food grain requirement would be 68.4 million tonnes or about 28 per cent of food grain production, leaving a huge 72 per cent or more than 173 million tonnes of foodgrains to be handled by the market forces.

The worst fear being expressed (for drought and bad weather years) can be addressed with the existing carry-over stocks and with likely investment of Rs 3.5 lakh crore, which the nation is being told the government is planning to increase food production and to improve productivity, storage and transportation. The proposed investment and increased procurement would work as great incentive for the farmers to increase food production.

Cash coupons: an infantile proposition

There is a suggestion that cash be transferred directly to the accounts of the beneficiaries in lieu of food. The reason being cited is to curb corruption in food distribution (starting from mismanagement in FCI, pilferage at ration shops to bogus ration cards). The ground realities, however, preclude such a move. On the basis of experiences in north India (Punjab, Haryana, north Rajasthan and west Uttar Pradesh), one can argue that should such cash transfers be resorted to, there will be more chances of the real purpose – removing hunger and malnutrition – being defeated. The cash will find its way to liquor shops instead of buying food as has been the repeated experience in most of the country with certain categories of people. The recent liquor disaster of West Bengal and hooch tragedy of Andhra Pradesh show that it is not a north Indian phenomenon alone. The chances are that more harm would be done by distributing cash instead of food grain in material form.

However, because the cash coupon recommendation has been prompted by the need to curb the menace of corruption, which is equally disastrous, one could introduce cash coupons as an experiment in two sample pockets of each state – one heavily infested with liquor and the other where rampant corruption is visible. A proper impact study, including impact on level of hunger, could be carried out for further extension of the best proposition. For the rest, providing a monthly 7 kg per person of foodgrains to 75 per cent rural and 50 per cent urban population is economically viable and needs to be seriously considered. ●

References:

Bouis, Howarth E. and Haddad, Lawrence J.: International Food Policy Research Institute in collaboration with the Research Institute for Mindanao Culture (Washington, D.C.) Effects of agricultural commercialisation on land tenure, household resource allocation, and nutrition in the Philippines, 1990

Census, 2011: Registrar General and Census Commissioner of India, MOH, GOI, provisional population estimates

Christine A. Russell: The impact of malnutrition on healthcare costs and economic considerations for the use of oral nutritional supplements, Clinical Nutrition Supplements, Volume 2, Issue1,(2007), 25-32,

D. L. Pelletier, E. A. Frongillo, Jr, D. G. Schroeder, and J. P. Habicht: The effects of malnutrition on child mortality in developing countries, Bull World Health Organ. 1995; 73(4): 443–448.

Peter R. Moock, Joanne Leslie, 2002: Childhood malnutrition and schooling, Journal of Development Economics 20 (1986) 3352

Hoddinott, J., J. Maluccio, J. Behrman, R. Flores and R. Martorell: Effect of a nutrition intervention during early childhood on economic productivity in Guatemalan adults. The Lancet 371: 411–416, 2008

John Hoddinott; John Maluccio; Jere Behrman; Reynaldo Martorell; Paul Melgar; Agnes Quisumbing; Manuel Ramirez-Zea; Aryeh Stein; Kathryn Yount: Weight Gain in the First Two Years of Life Is an Important Predictor of Schooling Outcomes in Pooled Analyses from Five Birth Cohorts from Low- and Middle-Income Countries, Journal of Nutrition, February 2010 vol. 140 no. 2 348-354

Peter R. Moock, Joanne Leslie, 2002: Childhood malnutrition and schooling in the Terai region of Nepal, World Bank, Washington, DC 20433, USA

Projectbritain.com

CASE STUDY

Juicy enough for a Bribe

Ravleen Kaur

A stroll along the Leh market in July or August, the tourist season in the cold desert region of Ladakh, reveals several colours of this landscape that is otherwise blanketed by snow. The most prominent one is orange; the colour of the fresh apricot piles lining one side of the road. Women farmers from Saspol, Nimmo, Domkhar and villages on the outskirts of Leh sit there selling this most popular fruit of Ladakh. However, this is the only place where this fruit is sold. In the villages of Ladakh, most people have their own apricot tree. Outside Ladakh, the fresh fruit cannot be exported.

In 1981, the government of Jammu and Kashmir banned the transportation of fresh fruit from Ladakh to any other part of the country under the J&K Plant and Disease Act 1973. Any consignment being taken through Sonamarg, the

Photo: Ravleen Kaur

Kashmiri village on the Leh-Srinagar highway, is siezed and destroyed if farmers tried to reach it to markets in Srinagar. The reason for the ban was a moth that infects apple and some other fruits in the region. The distribution of the codling moth, a menace in most fruit-producing areas of the world, is restricted only to Ladakh in India, where it is said to have come from the North-West Frontier province in Pakistan. "If the fruits are exported in fresh form, the moth will spread to other parts of the country where it will affect apple and other fruit production. Export of dried apricots is, of course, permitted," said Iqbal Khandey, Principal Secretary, Department of Agricultural Production, Kashmir.

However, agricultural scientists in Kargil are unhappy with the ban. "The ban is only to protect the Kashmiri apple industry, which is famous for its brand value. We understand that if the moth spreads to the apple-growing areas of Kashmir like Sopore, they will have to spray pesticides and their cost of production will go up. But why cannot fruit from this region be marketed in areas where no apple grows?" asks Dr Mohammad Mehdi Akhon, scientist at the Kargil Centre of Shere Kashmir University of Agricultural Sciences and Technology of Kashmir (SKUAST-K).

The Ladakhi apricot, Chuli as it is called locally, has a sweetness of about 90-250 brix (a measure of sweetness), which is much higher than any European variety; is is also completely organic, making it tastier than the apricot from neighbouring Kashmir, Himachal Pradesh and Uttarakhand. According to a survey in 13 villages of Leh and Kargil by Mohammad Saleem Mir, a scientist working on apricot in SKUAST, Srinagar, the fruit (though smaller than the fruit in other areas) has about 119 varieties in the surveyed villages only. Raktsay Karpo, the literal meaning of which is white seed, is considered the finest table variety because of its sweet fruit and kernal. The apricot kernal tastes like almonds. Oil extracted from the bitter kernals, which is known for its effectiveness against rheumatism, sells at the rate of Rs 500 per litre while the sweet kernal is sold for Rs 250 a kg.

Unlike today, apricot from Ladakh was exported to all parts of the world earlier. Gazette information shows that apricot was the main trading commodity of Ladakh when the Silk Route connecting Leh to China, Tibet and Pakistan was open prior to 1947. British gazetteers Moorcroft and Trebek reported an export of 600 mounds of dried apricot from Leh to Tibet and Tartary in 1825. Some varieties are even known to have come from Yarkhand in China and Tibet.

In July and August, when the apricot ripens, the Ladakhis delicately pack it in plastic chewing gum containers and send it to their children studying in Jammu, Chandigarh and Delhi through friends going by airplane or even by road sometimes. "The Ladakhi apricot is of such good quality that

"The shelf life of apricot is as much as cherry, six to seven days. Of course, tree-fresh goodness is not there after freezing so cold-storages are not the best idea. What can be done is that the fruits can be plucked in a little raw state and packed well like is done with most fruits transported over long distances" – **Dr Faizan Ahmed** we have even heard of it being used as bribe in Kashmir," said Dr Faizan Ahmed, another scientist at SKUAST's Kargil centre.

With warming of the weather in recent years, the fruit belt in Ladakh has moved up. This, combined with subsidies by the district administration on equipment like solar or osmotic dryers and on raising an orchard, has encouraged people to grow more horticulture products like apple and apricot, thereby increasing the area under these fruits (table: total land under horticulture, area under apple and apricot). In 2010-2011, more than 5,000 metric tonnes of apricot was produced in Kargil alone, out of which only about 3,000 tonnes could be dried. "We are not even including the production of the wild trees here," said Dr Ahmed.

Though the production has gone up, market linkage for fresh fruits is abysmal. The lack of processing or storage facilities means that a major portion of the non-drying type of apricots goes waste, especially in villages far from Leh or Kargil town. The establishment of small-scale processing units can go a long way in reducing this wastage and can make it more renumerative for small growers in the remote parts of Ladakh.

The Ladakhi apricot is of such good quality that we have even heard of it being used as bribe in Kashmir

"There are more than 200 genotypes of apricots in Kargil itself but people prefer growing only Halman, the drying type, so that they can sell it," said Dr Ahmed. "Monoculture of Halman can have disastrous consequences. If any disease occurs because of mutation in the variety, the entire crop will be destroyed," he added.

Hamza Ali Alhayati, who runs a food-processing unit in Kargil town, says that he pulps apricot to make jams and juices but that can be done on a very small scale. "I source 100 quintals of apricot from farmers in this area, which can easily be increased if there is demand. Kashmir is our only market as of now and thanks to the volatile situation there, it is never a steady business. Last year, we approached Dabur for juice and they liked our product but wanted it without preservatives, which is difficult as we do not have any cold storage or canning facility in Kargil. The operations start in May and get over by October as soon as the harvest season finishes," said Hamza Ali. "The ban on fresh fruit is just a political issue because our fruit will affect the sale of Kashmiri apple, which we compete with them as the apple from Ladakh tastes better. Even if they allow canning of fruits, it will be good for us," she said.

"Even tourists take it to Delhi when they return and nobody stops them. So why stop the poor farmers who can earn some money from this fruit exotic to the northern plains," asked Dr Akhon, whose team has undertaken a project for complete elimination of codling moth from the region. The project, funded by the Indian Council for Agricultural Research, began three years ago.

The codling moth, an inch-long mottled grey insect, is a highly adaptive creature. It manages to survive in a wide range of climatic conditions that range from -30 degrees to 30 degrees centigrade in Ladakh. The moth spins its cocoon under the loose bark on trunks of apple trees or on the ground nearby. As a full grown larvae, the moth remains dormant through the winter and changes into pupal stage in mid-spring. Once adult, after two to four weeks, they lay eggs that hatch into a larvae after seven to 15 days. The freshly hatched larvae bore their way into the fruit. The larvae feed on the fruit until fully grown in three to four weeks and then exit it to hide under leaf litter or bark again. It may complete another generation in a year in places where temperature is comparitively higher like in the villages of Dah, Hanoo or Achinathang than the villages around Leh that are at a higher elevation.

The codling moth, according to Dr Ahmed, mainly attacks apples and makes the fruit its host. A survey conducted by Dr Akhon's team in villages of Leh and Kargil revealed that the infestation of pest on the apple tree ranges from 42.2 per cent to 79.8 per cent while for apricot, it is about four per cent

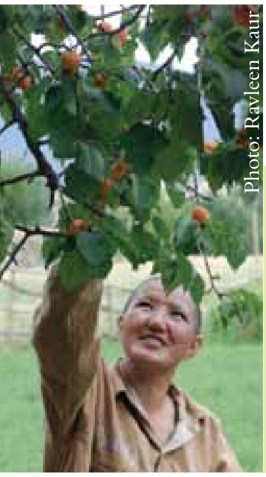


Photo: Ravleen Kaur

"The project was going well for two years but we could not do anything this year as the Central Government did not issue any funds for this year… This has rendered our work in the last two years useless as the moth population controlled in the last two years would have resurfaced by now."

– Dr Mohammad Mehdi Akhon

In 1981, the Government of Jammu and Kashmir banned the transportation of fresh fruit from Ladakh to any other part of the country under the J&K Plant and Disease Act 1973. Any consignment being taken through Sonamarg, the Kashmiri village on the Leh-Srinagar highway, is seized and destroyed if farmers tried to reach it to markets in Srinagar.

to 28 per cent. The moth results in considerable dropping of fruits from the tree. In this project, insecticides are being used to kill the moth. Besides, another pest is introduced that will gobble up the codling moth and a technique called bur lapping in which sacks are tied around the tree trunk at the end of the harvest. The moth hibernates in this artificial nesting site that is removed by the end of winters and the moths killed. Besides this, fruits dropping from the tree needs to be removed from the ground to prevent larvae from maturing and infecting another fruit.

"The moth is easily controllable but people here, being Buddhist, are not really eager to spray insecticides," said Sushil Chaddha, the chief horticulture officer of Leh. Also, there are problems because of there being no compact orchards but isolated plantations in the hills and distant villages, which makes it difficult for horticulture extension agencies to deliver services effectively. Akhon's team found burlapping to be a favourable technique with farmers as it is economical and does not involve use of insecticides. "The project was going well for two years but we could not do anything this year as the Central government did not issue any funds for this year," said Akhon. "This has rendered our work in the last two years useless as the moth population controlled in the last two years would have resurfaced by now," Akhon said. "The project is going on and I have no information of funds being released this year. We will consider removing the ban once the findings of this project are out, which will take another year or so," said Iqbal Khandey.

A concept paper on agriculture prepared by SKUAST in December 2010 recommended that the state government permit export of fresh fruit only in tropical and sub-tropical zones (where the host of the codling month does not exist) and regulate a rule for opening the fresh fruit loaded vehicles only in the permitted zones. "While executing this project, we found that the larvae

Photo: Ravleen Kaur

emerge from fruits by the end of August and go for hibernation under tree barks or soil cracks. So no fruits record any pest carrier (egg, larvae or pupae) beyond the end of August. This means that apricot can be sent out for sale after August," said Akhon. The team has also recommended setting up of X-ray units at major junctions in fruit growing areas for phyto-sanitary purpose. "X-rays kill all insects. When we brought earthworms by flight last year, they all died when put through x-ray machines at the security check point," he explained.

"The problem is not just codling moth but the short shelf life of apricots. The fresh fruit cannot be exported to far-off areas," said M. Raju, divisional commissioner, Kargil. The scientists disagree. "The shelf life of apricots is as much as cherries, six to seven days. Of course, tree-fresh goodness is not there after freezing so cold-storages are not the best idea. What can be done is that the fruits can be plucked when still a little raw and packed well like is done with most fruits transported over long distances," said Ahmed.

"The pest would have already spread by now as it is illegally taken to Kashmir anyway. Nobody has a problem when our food is infected by pests from the northern plains. For example, we never had a rat or cockroach in Kargil when I grew up. They came with food supply from outside. So should we now ban the food from the plains?" asked Haji Mohammad Ibrahim, uncle of Hamza Ali. ●

The author is a media fellow of the National Foundation of India currently working on Ladakh

CASE STUDY

Towards Productive Agriculture

Amod Agrawal

There can be no leap-frogging of the Indian economy into the league of the world's fast-growing nations unless Indian agriculture becomes a part of the growth. The key to satisfactory growth in Indian agriculture now lies more in improving productivity than in increasing acreage or irrigation cover of arable land. While efforts are required for continuing agricultural research to develop high-yielding, pest resistant and all weather varieties, there are some critical issues leading to poor productivity.

In a nutshell, fragmented holdings prevent the use of mechanised operations for better agro extension work and the scale of farming is not suitable for optimal farm operations, lack of knowledge for input usage and crop choice in pre-harvest operations; lack of knowledge for pricing decisions in postharvest operations: right price; time of sale, place of sale, opacity of the spot market and lack of access end user are the main problems. To these are added weather unpredictability with poor access to weather insurance; little access to credit; land tiller-owner divide; inadequate development of agro processing and complementary rural industry. These conspire to deprive the farmer of the ability to put his own knowledge to optimum use. In essence, these lead to low productivity and turn the farmer away from farming courtesy his inability to manage costs and finances. The story of farming suicides in India is a much talked about one.

There are two new developments that have visited this rather unhappy scenario. The government's invitation to the private sector to invest in the farm sector, which is a major and transformative intervention. The other is a far more routine attempt to resolve faming issues around credit; spread knowledge about advanced agri-practices especially around crop rotation to improve productivity, soil nutrient balance and income; improve irrigation and manage water better with renewed focus on ancient methods of water harvesting like check dams and ponds (to be regenerated under the rural employment guarantee scheme); drip irrigation; livelihood enhancing programme to be initiated through dairy farming, globar gas plants; managing the MSP regime more effectively to encourage farmers to consider cash crops as well

Finance has been a critical problem for the

Indian farmer, especially given the influence of the moneylender and his usurious rates. There is a clear need for legislation to control money-lending through compulsory licensing of their operations and getting their accounts audited. Essentially, there should be transparency around their outstanding in terms of principal plus interest along with the rate of interest; there should be full disclosure around their assets, especially land holdings; there should be a complete documentation of the interest that they charge and whenever a rate in excess of 18 per cent per annum is charged, it should be reversed. The government should also issue bonds for interest and the farmers allowed to pay the principal over a five-year period without any interest. The bonds should be redeemed after a period of 10 years carrying interest at the PLR of RBI from the date of issue.

There are numerous factors harming the farm sector. Amongst the most sensitive ones is around the fertiliser subsidy and the over use of subsidised nitrogenous fertilisers like urea. While there is general agreement that the subsidy should be nutrient based, the manner of doing so is not yet clear. Even the food basket of India – Punjab and Haryana – is getting degraded because of non-rotation of crops and extensive use of chemical fertilisers and pesticides. The soil is gradually being denuded of minerals and trace elements. The farmers should also be encouraged to use organic manure to replace trace elements and minerals. The indiscriminate use of chemical pesticides must be balanced with organic pesticides. A system of crop rotation should be encouraged by using MSP as an incentive to the farmer.

Even the food basket of India – Punjab and Haryana – is getting degraded because of non-rotation of crops and extensive use of chemical fertilisers and pesticides

There are three other sensitive areas around Indian farming that need attention.

- The first is GM seeds like BT cotton that are high-priced with a fair amount of cheating of farmers, who are sold spurious seeds. The company selling GM seeds should take appropriate action and the BIS should set up standards of GM seeds. Anybody found selling spurious seeds should face a major financial penalty and imprisonment.
- The second is around the lack of a spot market for agro produce, which is totally dependent on the local traders with virtually no mechanism of price discovery. Setting up electronic platforms for spot trade should help in discovering the real price of the produce. The electronic market must be delivery based.
- The third is the falling acreage under Indian agriculture. Due to extensive greed of city dwellers for farm houses for weekend getaways, land under the till is going down. The state government should earmark certain areas along major roads only for purposes other than agricultural. One would suggest 1,000 metres depth for land abutting major roads are used for development of habitation and commercial purposes.

The other dramatic issue that the farm sector is faced with is the government invitation to the corporate sector to participate in the farm sector. This immediately raises questions around contract farming, which has met with limited success in India because of lack of understanding of issues from both the corporate and the farmer perspectives. Where the programme has been successfully implemented, it has not been successfully upscaled.

Photos: S. Mahalanobis

The dramatic that the farm sector is faced with is the government invitation to the corporate sector to participate in the farm sector

Essentially, the model implemented has sought to capture the link between the farmer and the direct end user and use it to shrink the value chain and to provide farmer with higher price realisation; use superior knowledge support of the corporate and related organisations to bring benefits to the model; increase productivity and raise desired crops suitable for identified end use. What such a model failed to capture was a commitment from both farmers and corporates. In some cases, the corporates did not perform to expectations and, in others, when the farmers got better prices in the market they did not stick to their bargain. There is clearly a need to have in place an agriculture management system that will have the interests of all stakeholders in mind and work towards a scaleable model for development. The key features of such a system/model would include:

An SPV structure for delivering the advantages of the corporatised management in agriculture in the form of agriculture companies needs to be incorporated under the Companies Act 1956, which will operate for profits in agriculture management and agro-processing/rural/farm related activities. They should enjoy exemption from farm income to the extent of their revenues generated from farm management and any payouts made to the farmers shall be deductible from the company expenses. They should also enjoy any applicable tax exemptions for agro-processing. This would need incorporation of necessary provisions in the Companies Act 1956 and in the direct taxes regime for agro companies.

For capital, such companies will be allowed to use private sector capital but a certain minimum percentage of capital may be sought from central or state government organisations like NABARD, IFFCO, HAFED, MARKFED and such others. Banks too could be allowed to participate in such corporate structures and lending to such agriculture

companies would fall under agriculture credit and be treated as priority sector lending.

Such a model would focus on land consolidation based on (Model I) Leasing farmland or (Model II) equity holding in lieu of farmland. Under the former, agro companies will be allowed to take agricultural land in an identified block/district/ area on lease from the land owning farmers/ owners for a certain period. Lease rentals will be paid to the land owner at the rate of the productivity norm for the district and going rate for the crop that can grow or is being grown at the time of leasing the land.

The lease rentals will accrue and shall be paid to the land owners at the start of every crop season. Lease rental value should also have a provisional income clause to provide for a share of increase in the income of that area under corporate agro management that should be balanced to give the land owner a share of subsequent prosperity as well as enough profits for the AMS to grow and reap back profits for further development. The capital for lease rentals is raised by way of share capital or loans.

Under the second option of equity holding in lieu of farmland, the consolidation of land holding can take place by way of purchasing agricultural farmland into a SPV/company. The majority equity holding could be held by such farm owners/ labourers equivalent to the value of the land at the market value rate and such equity holding, not to be less than 76 per cent of the total capital, can be explored.

Of the remaining 24 per cent, 18 per cent maybe owned by public sector institutions like NABARD or farmer cooperatives like the IFFCO, Hafed and such others. The remaining six per cent of the equity holding could be used as incentives/bonus shares/ESOPs for the professional management setup if they turn in profits. In such a structure no transfer of share holding of such company will be permissible outside the farmer/farmland labourer.

- Under both the models the land/farm owners and labourers/farm labourers who till the land shall be employed by the company for tilling the land thus leased so that there is minimised labour displacement and payment is made to such labour only if they work the land.
- Agro processing /rural industry employing newer techniques may not require the same number of manpower and the land labourers thus displaced will be engaged in value adding agro processing industry
- Under both models the AMS will lease/acquire land of about 500-1,000 acres given that average farm size being 1.5 acres per farmer thereby overseeing a farm owner/ labourer population of 400-500 farmers.
- Land rules of the said area may require suitable amendment for provision of such land to be taken on lease/acquisition by an agro company.
- Lease rentals valuation may also be under jurisdiction of the local state machinery.
- Land valuation norms may be required under local state machinery.
- The management of the agro company will be in the hands of professionals who will be entitled to incentives by way of partnering in profits. This would help in incorporating effective private sector style decision-making with an eye to profits an integral fabric of agricultural management.

There must also be a focus on farming by using best farm practices like drip irrigation; certified seeds; farm machinery; agro research institute advice; crop insurance; scientific storage; end user sale for better price realisation; agro processing to capture value addition within the rural economy. The professional management should be allowed to make independent and efficient decisions to protect the interest of the company. ●

The author is the director and promoter of National Warehousing Corporation Pvt. Ltd and a former OSD to the Minister for Food.

PROS & CONS

FDI in multi-brand retail:

Why We Can't Wait

Debashish Mitra


Photos: Debashish Mitra

In the small village of Soppanhalli, in Ariskere taluk of Hassan district in Karnataka, Rame Gowda, a small farmer with five acres of land, surveys his half-acre gherkin crop. The crop is doing well, helped by the agri team of the gherkin-processing company, which has entered into a contract farming arrangement with him. The team has advised him how to grow the crop and supplied him inputs, right from the seed, to the special plant protection chemicals that meet E.U. norms (tougher than the Indian food safety norms) and helped with the right agronomical practices to optimise his yields.

The company will pick up the crop from his village and take it to the processing unit, which is over 75 km away, saving him the trouble of transportation. On the day of the harvest, which is daily or alternate day, depending on his yield, his passbook is entered with the details of the harvest, typically 50–100 kg per harvest. The company, based on his passbook, pays him his dues every 15 days, into his bank account. From half an acre, he expects to earn Rs 40,000 in 90 days of his land being occupied by the gherkin crop.

Sounds like fiction? Or a small scale pilot run by an NGO? Neither. This is a robust business today, which involves over 200,000 farmers in the states of Karnataka, Tamil Nadu and Andhra Pradesh, which generate over 60 million mandays of employment annually. Where do these gherkins go? Not to Bengaluru or Chennai or any nearby town but to those feared giants like Carrefour, Tesco, Walmart, Lidl, supermarkets in the first world countries; the multi-brand leaders; to Paris, London, Berlin, New York.

Who are they processed by? Not by the giant food companies like Nestle, Unilever, ITC, Pepsico but by 50 SMEs; unknown companies like Zenobia foods, Ken Agri tech, Indian Agriculture Products, Calypso Foods and even foreign SMEs like Reitzel India (the only exception being the Thapar group's Global Green Company), which, in turn, generate over 10,000 direct jobs and 50,000 indirect jobs, with just Rs 500 crore of investment. This is a much better ratio of capital investment to job creation, than sectors like steel, power and other large industry sectors.

Where are these jobs? Not in metro locations like Bengaluru, Chennai or Hyderabad but in relatively unknown places like Davangere, Gubbi, Dindigul or tier-II or tier-III towns like Madurai, Hassan and Hubli; places where employment needs to be created to reduce migration to large metros and reduce slum formations.

What about the profile of employees? More women than men; helping create dual incomes in marginal households. Are these sweat shops? No, they need to meet the food safety standards and employment condition standards like FDA, IFS, BRC, standards far ahead of the Indian food safety laws (the west will take no chances with food safety!), with regular inspections, social audits, health standards for workers, amongs other non-tariff compliances that companies in this trade need to conform to.

These small farmers and small companies exist because of the global sourcing models of the large global retailers. That is a cold, simple fact. If these retailers stop buying, these jobs and companies will vanish and the small farmers back to subsistence farming.

On the other hand, if these retailers, who collectively buy over $500 billion of food annually, buy even 10 per cent from India, imagine what it would do to the Indian, and the global economy! What is required is Foriegn Direct Investment and Farmers' Direct Involvement in multi-brand retail.

In the gherkin model, one of the greatest advantages has been the exemption granted from state level APMC rules, thereby allowing farmers and companies, to directly engage in the simple business, of growing crops for fair commercial reasons. If the farmer does not find the price attractive or wants to grow other crops in certain seasons, he can do so. There is structure of a partnership, with each side focusing on its respective areas of competence, to make a win-win situation happen. This is a classical case of the Farmers' Direct Involvement so essential for India. To make it scalable on a national level, it requires Foriegn Direct Investment.

It has been amusing and sad, to read the misinformed debates taking place on this subject across the country, mainly from academics and politically motivated entities, most of whom live at 30,000 feet above the reality of Rame Gowda and his power starved, poorly connected Soppanhalli, in rural Karnataka.

The tenor of the debate, seems to suggest, that while it is perfectly justified to have the large business houses of India put the small retailer out of business, there is no justification in allowing their elimination by foreign capital..directly. The same foreign capital can invest in the Indian stock market or give loans to such large corporate entities, which can be used to build a multi-brand

What is required is Foriegn Direct Investment and Farmers' Direct Involvement in multi-brand retail

Does the Indian farmer really care whether foreign or local companies buy his produce?

business in any part of India but woe betide, if the capital comes from a corporate 'retail' entity. In other words, American, French, British, Japanese, German – any country – can invest in Indian companies in the form of shares (particularly if they are listed) and repatriate the profits but retail entities from those countries cannot invest in India directly, even 51per cent. This defies logic! The question is: who says we are a logical people?

Does the Indian farmer really care whether foreign or local companies buy his produce? Will he care whether Nestle buys his milk or NDDB/ Heritage dairy? Does he care whether Pepsico buys his potatoes or Parle or ITC, or the local 'hot chips' vendor? Does he care whether Unilever or Shaktibhog atta or FCI buys his wheat? What the farmer cares for is the price paid for his produce. If his capability and capacity to earn more is improving, helping him and his family, lead a better life from his land, in his village, he is happy. There should be no need for him to migrate to urban pastures to improve his life.

The worrying question is why should the farmer be denied this right by 'gherao' based politics and a system of democracy that currently permits leadership to the most vocally endowed or agitation oriented. How does one justify the farmers being forced to travel miles and miles, on poor roads, in all seasons, to sell their produce to a trade manipulated mandi, where there is no transparency in price, weighment, quality or any other parameter? How does one justify the perpetual exploitation?

The questions are endless. Why is it necessary to pamper the middleman to an extent that food inflation causes the RBI to raise interest rates to such levels that stymie the economy? Is India going to be perpetual victims and hostage to the 'grim' version of game theory, in which if party A, betrayed party B once, party B will never forgive party A and, therefore, cut its nose to spite the nation? When will this tragic misinformed stalemate end? It is important for the long term of the nation that it ends immediately.

Why is the FDI in multi-brand retail important? It very simple really. It is just that at this stage of Indian collective national capability, it lacks the skills and the means to create a powerful agri-economy and needs to 'import' these skills and technologies. The gherkin industry learned from its customers; not from agri universities or the CFTRI, which unfortunately are very far removed from global knowledge standards, especially in horticulture or high value crops.

This is much like the way that General Electric of the US, under the leadership of the legendary Jack Welch, created the BPO business in India, which has done India proud today. Essentially the country needs the catalyst of cutting edge skills to jumpstart the rural economy. What GE and IBM (the company that some may recall that George Fernandes and the Janata Government threw out in 1977) have done for the IT sector, FDI in retail will do for the farm sector.

If the groups, which led the wealth creation in India (more personal than national) could not bring the necessary skills to the farming sector, linking small farmers to the urban market place efficiently even after over 10 years, why will the next 10 years be any different? The Indian urban consumer has a choice: the housewife can buy vegetables from a cart, the neighbourhood store, the 'air conditioned' environs containing wilting vegetables, often manned by traders. The Indian farmer has none. Nor has the wherewithal to fight the system in which the price paid to the farmer growing vegetables 50 km away from these urban centres is often a third of what the consumer pays because of the inefficiency in procurement and the multiple levels between the farmer and the consumer.

480 and wheat imports.

FDI will bring in the technology and the resources and the Farmer Direct Involvement will ensure the big shift in incomes and quality of life, so necessary for our nation. What is the way forward?

1. Allow 100 per cent FDI in multi-brand retail. There is nothing like being 'half' pregnant. If it can work for 'multi-brand' cash and carry, why not for retail?
2. Ensure that all foreign entities coming into this sector are required to support and buy from at least 1,00,000 farmers each..these can be for export or domestic consumption. Something akin to the conditions imposed on Pepsico when it entered India in the height of the Punjab militancy. The export:import obligation was 5:1.
3. These entities should commit to source at least $5 billion of produce from India, over a five years, doubling to 10 billion in 10 years. Imagine if $50 billion worth of produce (Rs 2,50,000 crore of

It has been amusing and sad, to read the misinformed debates taking place on this subject across the country, mainly from academics and politically motivated entities

A simple check of performance related to skills, would be to evaluate the 'cash and carry' sector where 100 per cent FDI has been allowed. If the performance of the German chain Metro in the south of India and that of Walmart in Punjab is measured against that of their Indian owned competitors and the reasons are analysed, the answer will be clear.

It is not money power, which is often projected as the reason, but sheer difference in skills. Simple things (which can be technically complex), like post-harvest management, right temperature for transporting food, humidity conditions, stocking pattern, training of farmers, all of which are known to mankind but not practiced or applied in our country now need to implemented and urgently.

A burgeoning middle class, nutritionally challenged child population, with serious consequences for the long-term health of the nation, the sheer numbers to be fed are problems that demand a sense of urgency as they are combatted. Left unattended they will conspire to reduce India to a food-importing nation. Forget the foreign exchange problem of 1991; remember PL

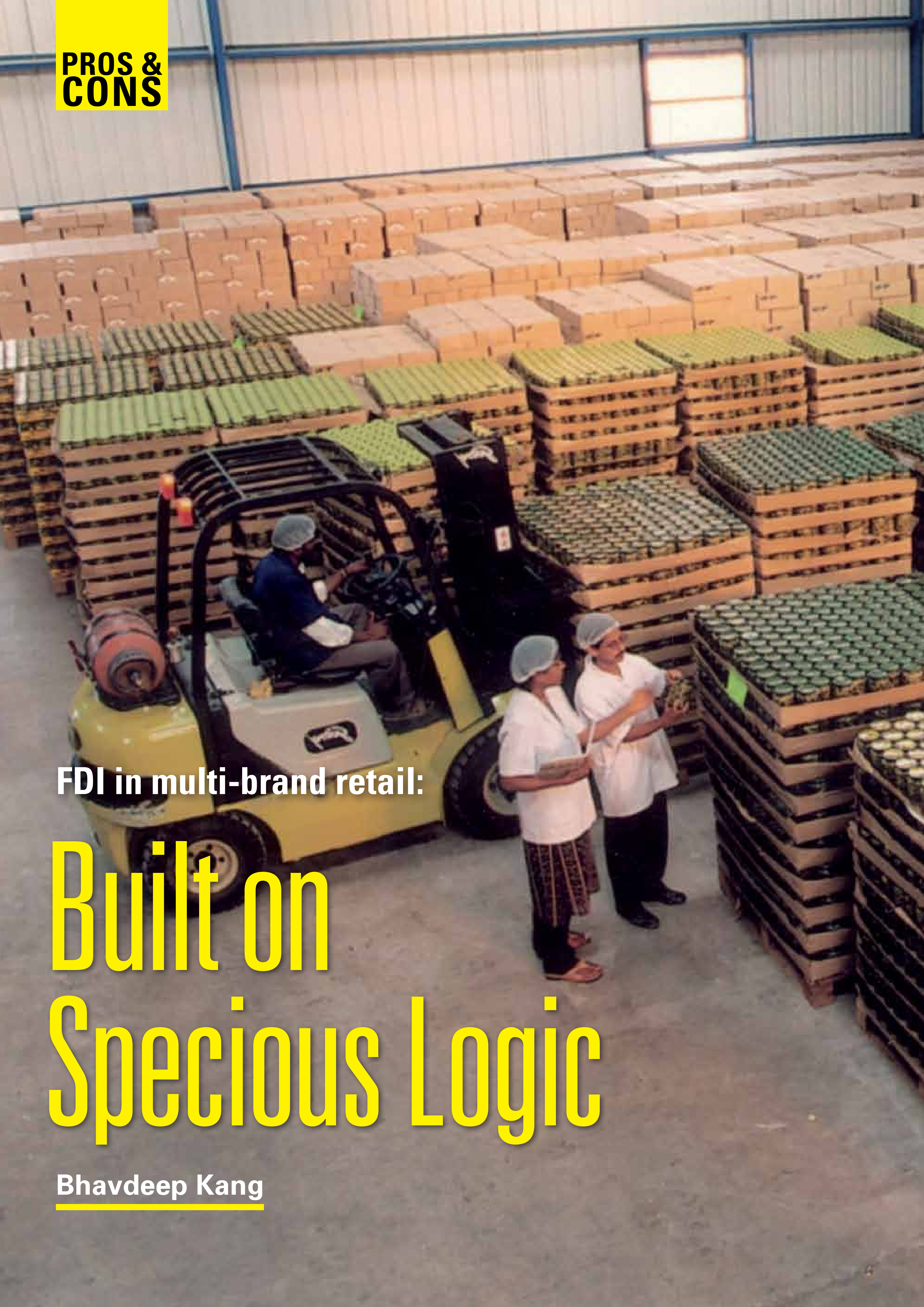
rural income is increased) in five years and Rs 5,00,000 crore is added in10 years, what it would it would do to the economy and the world, as the rural households become consumers of goods and services!

India is perhaps the only country on the planet, which can supply mangoes, strawberries, apples, bananas, onions, bell peppers, any kind of milch-cow, goat, buffalo or sea food, like shrimp, tuna; meats of all kinds, herbs, flowers – the list in endless. It could be Rural Procement Programme that engaged the whole of rural india, including the fisherfolk, all communities and religions, through Farmer Direct Involvement.

4. Sourcing is to be done from farmer organisations and/or aggregators who source directly from farmers. In these entities, the farmers, the aggregators and the FDI entities should have ownership. The mega-food parks proposed by the Ministry of Food Processing could be important catalysts for this.
5. SMEs should be given preference for sourcing. More important, a capacity improvement programme, akin to what happened in the IT/ITES sector should be instituted. This can have an great cascading effect, as better equipment, skilled jobs, food safety standards, modern and eco-efficient packaging, all can come into play. Benefiting the Indian consumer, who will get the same safe food, as its western counterpart. It is indeed ironical, that the cost of packaged fruit juice is cheaper in London and Berlin, than it is in Mumbai and Bengaluru!
6. Infrastructure status is to be given for all investments, be it storage, cold chains, training, food processing, IT infrastructure
7. Most importantly, APMC needs to be abolished and the informal national trade in fruits and vegetables that runs into hundreds of thousands of crore, is formalised. Today tomatoes travel from Arsikere in Karnataka to Delhi (and Lahore!); pineapples from Siliguri to Amritsar but amidst such waste that prices need to factor this in.
8. The price difference between retail shelf price and the farmer premise should not be more than 2X...perhaps even 1.5X and this will have an entirely salubrious effect on prices. If Indian households start spending even 25 per cent of their income instead of the current 50 per cent (in the west is at 10 per cent), for the daily calorie intake, the impact on savings and consumption will be phenomenal.

Can the jailors of the Indian 'Prometheus', the Indian farmer, please set him free? Can the Rame Gowdas of Soppanhalli be allowed to prosper? Not just the citizens of Nariman Point or Raisana Hill...

The author is founder and Managing Director Calypso Foods (dmitra@calypsofoods.net). The company pioneered contract farming in gherkins and their exports to Europe and the US.



PROS & CONS

FDI in multi-brand retail:

Built on Specious Logic

Bhavdeep Kang

Photos: Debashish Mitra

The argument in favour of Foreign Direct Investment (FDI) in multi-brand retail goes something like this: by eliminating rapacious middlemen, multinational participation in the retail sector will ensure a good deal for producers (particularly farmers) and consumers, besides creating jobs. It will enable massive investment in storage and processing infrastructure, economies of scale, prosperity at every level of the supply chain and a wealth of choices for the consumer. A win-win situation for all.

No FDI votary has yet explained why FDI is needed to accomplish all this. Organised retail already features players with significant investment capacity (Reliance and the RPG group, to name two). If they have not liberated Indian retail from middlemen and turned farmer fortunes around, it is for reasons other than lack of funds. The inflow of foreign money *per se* will not resolve issues related to the policy environment or infrastructure or consumer behaviour or shortcomings of the retailers themselves – unless, of course, we credit MNCs with the ability to influence Indian policymakers, God forbid.

The claim that producers – farmers and small manufacturers – will benefit from FDI in retail is unsubstantiated. In fact, studies show that they do not; quite the reverse. The 2005 Oxfam study on Big Retail, 'Trading away our rights', comes to mind. The producer invariably bears the brunt of risk and operates on tiny margins. Big retail exercises control over the entire supply chain, creating a monopolistic situation where there are a limited number of buyers and vast number of dependent producers. Price, quality, delivery schedules and even labour conditions are determined by the buyer.

Big retail exercises control over the entire supply chain, creating a monopolistic situation where there are a limited number of buyers and vast number of dependent producers

The Oxfam report says: "Buyers employed by many retailers and brands are given strong incentives to cut the prices they pay. Others demand 'open-book costing' that requires suppliers and producers to reveal their production and delivery costs so that retailers can cut out low-value steps and capture the saving in lower prices. Some boost their profits by charging suppliers for product promotions, for store displays, for discounts on poorly-selling goods, for discounts on well-selling goods and even for simply being listed as a supplier."

Farmers are even more vulnerable to the machinations of big retail. Predatory pricing eventually closes off traditional distribution channels and leads to monopolies, which pare farm income to the bone in developing countries, as described in Raj Patel's *Stuffed & Starved*. In India, the farmer's vulnerability is compounded by the fact that he retains his faith in government even as he protests low procurement prices or short supply of seeds and agro-chemicals. When approached by corporates under the aegis of government, he responds without suspicion.

One should be quite clear. Walmart is not Santa Claus. If it wants in, it is to make a profit and not to

practice philanthropy. If it keeps prices down, it will have to keep costs down. If that means squeezing suppliers and farmers, it will do so. For example, will Walmart guarantee that it will consistently pay farmers more than the minimum support price for staples and a government administered fair price for other produce, which is linked to cost of production rather than global market price for that particular commodity?

As for the claim of more jobs, this is again purely speculative. In fact, it is hard to see how big retail can avoid putting people out of work. While retail giants can offer employment to a limited number of people – far fewer than those likely to be displaced – doubtless they hope to generate indirect employment through manufacturing, processing and such others. The extent and manner in which the unorganised sector – which accounts for the bulk of retail livelihoods – would be affected remains unclear though.

As economist Mohan Guruswamy, who co-authored a detailed study on big retail, observed: "If Walmart were to open an average Walmart store in each of these (53) cities and they reached the average Walmart performance per store – we are looking at a total turnover of over Rs 1,41,000 million with the employment merely of about 16,000 persons. Extrapolating this with the average trend in India, it would mean displacing about 7,58,000 persons." Besides, Walmart does not enjoy a stellar reputation as an employer: if jobs are created, can a respectable salary structure and conditions of work be guaranteed?

Consider the retail scenario: around 12 million retail outlets, employing some 40 million people. Small and micro enterprises dominate this fragmented market, with many intermediaries. The wholesale trade is controlled by thousands of small, local-level commission agents and distributors. Margins are typically very small.

The range of enterprises is vast, from general stores to street vendors. The retail system operates in a manner incomprehensible to conventional business. It is based on social relationships and trust, which are maintained even at the cost of profits. Entire families and, often, communities, are involved in the business, from manufacture to retail. Operating costs are low and labour input

Walmart is not Santa Claus. If it wants in, it is to make a profit and not to practice philanthropy. If it keeps prices down, it will have to keep costs down, even by squeezing suppliers and farmers

is high. For many poor and even middle-class families, credit extended by the retailer – who may turn moneylender in times of need – is vital.

Another important aspect of unorganised retail is its elasticity. It provides part-time employment to vast numbers of people. An out of work auto driver may turn vegetable vendor until he finds another job, or a sacked domestic help may become a delivery boy. It provides a cushion to the unemployed. Tinkering with this system could have widespread, cascading effects on the economy, creating unmanageable social tensions. We are treading on eggshells here; to have Carrefour jackbooting around in this environment cannot but be counterproductive.

As far as investing in storage and processing infrastructure is concerned, it is difficult to grasp what role FDI has to play. After all, refrigerated stores and vans (for instance) are not exactly rocket science, necessitating heavy-duty technology transfer. Cold stores need regular power supply to run and refrigerated vans need motorable roads on which to ply, preferably without having to negotiate a series of check points at which the police, excise and transport officials must be paid off. This is the province of government, not Walmart et al. Certainly, there is a need for reform, particularly at the mandi level, to streamline post-harvest management and transportation of produce but that again is the purview of the state governments.

To argue that special skills or technology owned by MNCs are necessary for supply chain management is ridiculous. Countrywide distribution networks for agricultural produce already exist and are doing well. There are problems of over and under supply of commodities from time to time but that cannot be addressed by retailers.

The argument most often advanced is that multinationals will help control food prices, while simultaneously benefitting farmers. In fact, the Inter Ministerial Group on inflation headed by chief economic advisor Kaushik Basu recommended FDI in multi-brand retail as the panacea for inflationary ills. This claim is mystifying and anyway, food inflation appears to have controlled itself without any help from Walmart and company.

An important aspect of unorganised retail is its elasticity. It provides part-time employment to vast numbers of people. An out of work auto driver may turn vegetable vendor too

The farmer argument is basically a plug for contract farming that, thus far, has received mixed reviews from farmers. If some have benefitted, others have suffered when crops have failed or contracts have not been honoured. Will the government consider putting a strong regulator in place to protect farmers from exploitation? In any case, why does the farm sector need MNC participation? There are no pioneering technologies on offer to either farmers or agribusiness entrepreneurs.

The crisis in Indian agriculture has to do with the farmers' increasing lack of control over his means of production, be it spiralling input costs, low procurement prices or the vagaries of weather. From that perspective, MNCs are likely to exacerbate the crisis by multiplying risk and increasing indebtedness. Growing tomatoes in greenhouses for Walmart is great as long as all goes well but a single attack of say, yellow mosaic virus, could wipe out the entire crop, reducing income to zero and leaving the farmer without the means to pay off the loans taken to set up the greenhouse, buy the seeds and arrange a backup power supply.

Study after study have shown that the farmers who form supply bases for big retail get only a tiny part of the ultimate retail price of any product. In the case of South American banana growers, it is a generous five per cent. Also, over time, the share of trade in the retail price goes up. How is this better than the situation obtaining today? A farmer gets up to Rs 20 per kg for genuine MP wheat; one buys it for Rs 24 to Rs 28 a kg. There is no evidence to support the contention that MNCs can do better.

It has also been said that traditional retail can thrive alongside big retail. Perhaps it can, although studies in the US point to the contrary. However, any policy that has a wide-ranging and profound impact on agriculture and trade needs careful analysis before it is implemented. Extravagant claims on the ameliorative effects of FDI in multi-brand retail cannot be taken at face value. ●

The author, a senior journalist, has been a political commentator for magazines like Outlook and India Today and newspapers like The Telegraph and Indian Express. She now writes on agriculture and food policy. She also works on sustainable agriculture initiatives in various parts of the country.

GREEN FINGERS

The Earth's Humble Servant

Water man, Laxman Singh of Laporia

Ashim Choudhury

Laporia, some 80 km from Jaipur, is a raucous village. The cacophony of the chirp is loudest in the mornings and evenings, when the birds wake or return to roost. Even the silent nights are not spared, punctuated by the screeching of owls. Laxman Singh, the man who has transformed the semi-arid village on the fringe of a desert into a natural haven calls it a "khula chidia ghar" (open bird-house). "We have 135 species of birds in Laporia!" he says. "People from the government came and carried out a study to register the species." As if to support his claim, our conversation under a neem tree is constantly interrupted by shrieking parrots, common mynahs and pigeons.

"They are welcome even in our fields, we do not chase them away," says the benign thakur. "Their droppings ensure that our farms keep getting natural manure." The birds in Laporia are so well fed they do not need to raid the crops. At the entrance to Laporia, Singh introduces me to Chhotu ji, a turbaned 50-something man, entrusted with feeding the birds. A 'chabutra' (yard) scattered with grains is mostly monopolised by pigeons and parrots. Chhotu ji opens a small godown, displaying sacks of wheat and millet stacked that have been donated by people. "We have over 300 maunds of cereals for the birds," he says.

Chhotu ji, one of the several volunteers that support GVNML in its conservation efforts, will receive the title of "Dhundhar ratan" this year for "planting thousands of trees" over the years. "This year alone he has planted over 400 peepal saplings," says Laxman Singh. Chhotu ji also distributes seeds and saplings to people he meets during the annual 'dharti jatan yatras' that GVNML organises each year, spreading awareness about preserving the earth.

'Chaukas': recharging ground water

Birds are just an offshoot of Laxman's work. His main calling is water management in the sparsely rain-fed region. The 'chauka' system that he has developed is a unique water management technique whereby rain water, instead of hurtling down slopes, moves gradually through rectangular troughs called 'chaukas'. The chaukas give the rain water more time to seep into the ground, helping in the germination of grass and other fodder for grazing animals. The Ashoka Foundation for innovative ideas has recognised Laxman's chauka work granting him a fellowship.

For the village herders it has meant green fodder for the animals without having to travel long distances and abundant milk, to be sold to the cooperative. The network of lakes, bunds and canals that Laxman Singh and his villagers have created has played a key role in Laporia's water table rising. At a village farm, we peep down a dark, cavernous well. "The water level here is no more than 20-30 feet below the ground. In Jaipur and other places the level is 500-600 feet below," he says. A well recharged ground water table has meant easier and better irrigation and a bumper harvest even when the rains have not been good. The linking and creation of water bodies also works as a flood control measure in rare times of heavy rains. GNMVL is currently replicating the Laporia model in some 500 villages across Rajasthan – Jaipur, Pali, Badmer and Jodhpur districts, where the results have been highly encouraging. Even rain scarce countries like Afghanistan and Israel are experimenting with the Laporia model, says Singh.

Organic approach: happy farmers

Testifying to this claim an old farmer confirms what is visible. "We are happy, the yield is good enough to survive and save for marriages, festivals and other events," he beams. "Farmers are self sufficient, they do not commit suicide here because they are not entrapped in the vicious cycle of buying seeds, fertilisers and pesticides," Laxman adds. "Nature gives us everything we need." Chemical fertilisers and pesticides are a strict 'no-no' here. The lush farms are a testimony to the organic method of farming adopted here.

"The cattle give a lot of milk and their gobar enriches the top soil," explains Laxman. "Because we have also made a natural habitat for the birds, they do not need to raid our crops." He believes that the presence of birds and animals, including snakes, mice and rabbits ensure there are no diseases among the crops. He goes on to explain how each creature forms a part of a food chain. "Most of the insects and pests are devoured by the birds, helping the crops," he explains. Shikar is strictly prohibited and attracts censure.

What is remarkable about this green transformation from a semi-barren land is that much of the knowledge and know-how has come from within. "We have got our knowledge from the land, by observing it closely, by living in harmony with it," Laxman says. Starting from harnessing water, his work now emphasises nature even more. *"Sabhi vanya prani ka khayal rakhte hain hum; unke liye pani bhojan ki vyavastha karte hain hum."* (we care for all living beings, including birds and animal, ensuring that they have enough water and food). He adds: "Livelihood should be such that it supports the climate; not destroys it."

Climate change is a recurrent theme with Laxman and he intends to demonstrate how a natural way of life can contribute to the war against climate change. His compound now has a weather meter that measures temperature, wind speed and humidity. "Twice a day readings and taken and after a year we intend to carry out a comparative study," he says.

> "The water level here is no more than 20-30 feet below the ground. In Jaipur and other places the level is 500-600 feet below" – Laxman Singh

How it happened

Laxman's advent into social work was more by accident. "He used to be a *badmash* (naughty boy) during school days," says childhood friend Ajay Rathore. "He was a hero, with high collars and rolled up sleeves. Together we bashed up many a rival gang," he laughs. "That is true," avers the now wizened Laxman, "but we beat only the guys who challenged us!" Little wonder then that Laxman Singh did not even finish his schooling at Poddar High School in Jaipur. How did the transformation come about?

"Our village had a very bad name. At school they would say 'Oh, you are from Laporia?' in a denigrating manner." On leaving school and returning to Laporia he realised even the physical state of his village was not good. The village *talaab* (pond) was broken and there was hardly any water for the crops. People were poor and ill fed. "That is when I made up my mind." One of the first tasks he undertook was to repair the water tank. He was barely 17 then and his efforts to mobilise

the villagers failed for three successive days. On the fourth day, he and a friend picked up a spade and a pickaxe and headed to repair the talaab on his own.

"Bana ji! You?" villagers who saw him were shocked! After all, he was the son of the village thakur! Shamed, one by one they joined him and soon the entire village had been mobilised. "That year 100 bighas of land was irrigated yielding a rich harvest," recalls Laxman Singh and the idea of *shram daan* (voluntary self-help) took root. In 1977, with the help of some 70 volunteers from the village GNMVL was formed to address water scarcity in Laporia. Was his feudal background a help? "Yes, to an extent," Singh says, adding though, "*meri pehchan alag hai* (my identity is different). People follow me because they see in my work a worship of the land. The people respect me because I respect them."

Rejuvenating the earth

In his crumpled shirt and pyjamas Laxman Singh is a picture of rustic simplicity and humility and there is a certain persuasive charm in the way he speaks. Fame and recognition have not dented his down-to-earth nature. Recognition first came in 1991 with the National Youth Award, followed by the Indira Priyadarshani Vriksh Award in 1994. Several other awards have marked Singh's career of over three decades, including an award from the President of India; several state awards and a silver award from the Tina Ambani Foundation. Sunita Narayan, of the Centre for Science and Environment, is another of his many admirers and visits Laporia at least once a year. Anupam Mishra of the Gandhi Peace Foundation has also been a mentor in his nature conservation efforts.

The journey so far has not been all rosy as Laxman grapples with shrinking funds that constricts the ambit of his work. There have been vested political interferences like a minister in the state, who instigated people to encroach the village lake by building houses on it. He also spread canards that the 'bagichis' ('nature enclosures' where he lets the land rejuvenate itself for birds and lesser animal species) are a tactic to grab public land. Such allegations have pained him but Laxman's supporters have fought back valiantly. A bigger worry is not getting whole-hearted support from the government. "The Laporia model should have been adopted as part of government policy that has not happened," he laments.

Laxman is now increasingly focused on spreading awareness about the environment. Each year GVNML gives away awards to individuals and institutions doing exemplary work to protect the environment. This year's awards were given away by the former Jodhpur Maharaja, Gaj Singh. Among the five recipients, was Chhotu ji. The Rajasthan Patrika Group recognised him for his relentless effort to save the water bodies of Jaipur. "It is not for the *sarkar* alone, people have to be involved," says Laxman Singh. The 'humble servant of the earth', as Laxman likes to call himself, now plans to start a project on 'eco-tourism' to promote awareness and love for the environment, particularly among the city people. •

The writer is a freelance journalist and author of the forthcoming novel 'The Sergeant's Son'.

IFFCO KISAN SEZ - Nellore

Creating India's First Agribusiness Based Special Economic Zone

Business opportunities that invite you to IFFCO Kisan SEZ

Processing of cereals and pulses
- Ready to eat
- Bakery
- Biscuits
- Primary processing and milling
- Snack Foods

Fruits & Vegetables
- Mango
- Citrus (Acid Lime and Sweet Lime)
- Papaya
- Tomato and varied vegetable crops
- Sapota
- IQF / Freeze dried / RTC / RTE / Pickles
- Juices, Jams, Jellies, pulp making
- Snack foods

Realizing the need to bring in high value agribusiness activity into the country, **IFFCO, Asia's largest** fertilizer company through its SPV IFFCO Kisan SEZ Ltd., has embarked on the development of an **Agri-based Special Economic Zone based on the** concept of **"Agroparks" (AP) in Nellore** in the state of **Andhra Pradesh.** The developer has brought in the expertise and lessons learned by the northwestern European agro sector in **innovating metropolitan agriculture by forging strategic consultants with Wageningen University and Research** Center, the Netherlands and YES BANK Limited.

▪IFFCO Kisan SEZ is a notified Multiproduct Special Economic Zone spread over 1000 hectares located 22 KM North of Nellore, A.P. It comes with many customs duty and sales tax concessions provided by the government of India to promote economic activity in notified Special Economic Zones. The concept of Agropark is based on the principles of sustainable development, i.e.

- Application of principles of industrial ecology, i.e. mutual use of waste and by-products.
- Advantages of scale through industrial production and processing.
- Improvement of farmers position as a preferred supplier.
- Independence from seasonality and land during the whole year of production cycle
- Significant reduction of costs

Locational Advantages: IKSEZ is at a distance of just 50 Km from Krishnapatnam Sea Port, a new mega port on the east coast, and within a reach of three hours drive from Chennai International airport.

Nellore, the catchment area which is the Heart of Indian Aquaculture, is a strong source of various agricultural produce such as paddy, sugarcane, fruits & vegetables (especially tomato) and is a prime source of supply of poultry products and milk to near by metropolis. Major fruits include mango, citrus, papaya, banana & sappota.

▪ Infrastructure that is being provided: The IFFCO Kisan SEZ comes with a bundle of world class common infrastructure conforming to international standards including internal roads, high quality rain harvest supported water supply, uninterrupted power supply, common operation, maintenance and management of security, logistics, ICT etc. Moreover, the Agropark offers a framework of industrial ecology, managing waste and byproducts thus significantly reducing costs.

▪ Land at IFFCO Kisan Project site is being offered on long term lease basis for 33 years for potential Entrepreneurs for setting up their units on attractive terms and conditions. For further details contact our website www.iffcokisansez.com or can be obtained from,

Head Office :
Indian Farmers Fertiliser Cooperative Limited
IFFCO Sadan, C-1, District Centre, Saket Place,
Saket, New Delhi-110017
Ph.: +91-11-42592626, 26510001

Project Office:
IFFCO Kisan SEZ Limited
2nd Floor, Srinivasa Towers, Srinagar Colony,
Nellore-524003, Andhra Pradesh
Ph.: +91-861-2320483,

mail-guptark@iffco.nic.in, raja@iffco.nic.in, dsrmurthy@iffco.nic.in, mlnmurthy@iffco.nic.in